Customer Knowledge Management (CKM) in the e-Business Environment

Cases From Swedish Banks

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Abstract

The advent of information technology has generated interest not only in how to acquire, store and "mine" data, but also on how to manage knowledge. The ability to create knowledge and to continue learning from it can become a competitive advantage, as the innovative knowledge developed today will become the core knowledge of tomorrow. Therefore the organization’s success and growth become dependent on the successful generation, management, and deployment of its own, as well as, its customer knowledge across the business processes. In e-business environment there are many opportunities to collect data about the customers, the market, as well as, the industry. But in such a data-rich environment the challenge is to distinguish the relevant data, convert it into knowledge and integrate this knowledge into the business processes. The purpose of this study was to provide a better understanding of how companies manage customer knowledge in the e-business environment. For this purpose three research questions have been formulated, which focus on how customer data, aiming to create customer knowledge, can be acquired and processed, as well as, how this customer knowledge can be deployed in the e-business environment. Moreover, a qualitative approach was chosen and a deductive research was conducted based on two case studies from Swedish banks' perspective that were selected as a non-probability and judgemental sample. The findings of this study show that successful implementation of CKM in the e-business environment depends on the active participation of the customer in the knowledge generation process, the knowledge culture of the organization and the deployment of customer knowledge that creates a two-way flow of value for both customers and companies. The examined organizations were shown not to fully exploit the opportunities for customer data acquisition that the Internet provides, but they are working towards this direction. Even though the two banks were similarly equipped with sophisticated infrastructures capable to support their CKM procedures, differences were observed in terms of their knowledge culture. Finally, in general terms, the examined banks were shown to work towards the co-creation of the product with the customer in order to generate value for both parties and with the purpose to achieve competitive advantage towards their rivals.
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Christos Stavropoulos

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Αφιερωμένο στην οικογενεία μου.
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1. Introduction

The first chapter introduces the background of the selected area. This will be followed by a problem discussion that will lead to an overall purpose and specific research questions. The end of this chapter will present delimitations and an overview of the entire thesis.

1.1 Background

The advent of information technology has generated not only interest in how to acquire, store and "mine" data, but also how to manage knowledge (Asllani & Luthans, 2003). In the present post-industrial society, knowledge has become a key resource of the economy. Increasing demands of customers concerning quality and innovativeness of products and services put companies under pressure. At the same time threats from worldwide competitors force them to reduce the price of the products and services. These challenges of improving quality, innovativeness and the rising pressure to reduce cost require companies to redesign their business process (Dous et al., 2005). In that economy where the only certainty is uncertainty, the one sure source of lasting competitive advantages is knowledge (Nonaka, 1998).

Indeed, knowledge is the most important strategic resource and the ability to acquire and develop it, share it and apply it can lead to sustainable competitive advantages (Grant, 1996). This is because superior knowledge can contribute to traditional resources and assets in new and distinctive ways and thereby provide superior value to customers (Teece et al., 1997). The ability to create knowledge and to continue learning from it can become a competitive advantage because the innovative knowledge developed today will become the core knowledge of tomorrow (Zack, 1999).

In recent years organizational effort has been put into knowledge management (KM) initiatives that became one of the management buzzwords (Walsham, 2001 & Gumbley, 1998). It is focusing on capturing employees' knowledge about customers, competitors, products and services produced in an organization (Gibbert et al., 2002). In its simplest form KM is about encouraging people to share information, knowledge and ideas, in order to create value-adding products and services (Chase, 1997). Therefore, the perspective of the KM is inside the organization and the benefit of KM is customer satisfaction from the better services. (Gibbert et al., 2002).

However, as companies begin to develop competence in managing internal knowledge and applying it towards achieving organizational goals, they are setting their sights on new sources of knowledge that are not necessarily found within the boundaries of the firm (Paquette, 2006). With emphasis on knowledge as a key competitive factor in the global economy, corporations may be overlooking a major element – Customer Knowledge (Gibbert et al., 2002). It is the superior knowledge that enables organizations to exploit and develop resources, as well as, enhance their fundamental ability to compete. It, also, allows an organization to develop sustainable competitive advantage and to do better than rivals, even if its other resources are not unique. (Sharkie, 2003). Blosch (2000) defined customer knowledge as the dynamic combination of experience, value, scenario information and
expertise insights which is needed, created and observed during the process of transaction and exchange between customers and enterprise. This knowledge is created within a two-way flow of knowledge which creates value for both parties and is the origin of most improvements in customer value (Paquette, 2006 & Novo, 2001).

Moreover, the processing of customer knowledge is involved in a customer relationship management (CRM) business process with the aim of retaining customers. In general, two core developments can be identified which finally led to the emergence of CRM. One of these developments was the shift from a focus on transactions to the establishment, marketing and nurturing of relationships with customers. The other was the focus on customer retention rather than on single sales. Formally relationship marketing can be characterized as an integrated effort to identify, maintain and build a network with individual customers and the strengthening of this network for both sides mutual benefit. Furthermore, CRM is a high-tech way of gathering information about customers in order to understand and influence customers’ behaviour. (Dous et al., 2005) Even if many researchers remind us that 80 per cent of CRM implementations fail (Rowley, 2002), overall, CRM is probably one of the most recognized management approaches of the past decade (Rollins et al. 2005).

In recent years companies have integrated their customer relationship management and knowledge management efforts because they realize that KM plays a key role in CRM processes (Dous et al. 2005). While CRM is focusing on the knowledge about the customers to manage customer interactions, KM systems can manage that knowledge through the process of creating, structuring, disseminating and applying it to enhance organizational performance and create value (Bose & Sugumaran, 2003). According to the view of Bose and Sugumaran (2003), a CRM success in a customer-centric business environment is only possible by integrating it with KM systems to create what is known as knowledge-enabled CRM processes.

Nowadays, researchers propose that knowledge-enabled CRM or customer knowledge management (CKM) is the way to succeed. CKM is an area of management where KM instruments and procedures are applied to support the exchange of customer knowledge within an organization and between an organization and its customers, in order to improve CRM processes such as customer service, customer retention and relationship profitability (Rollins et al., 2005). While most of the firms have large data warehouse about customers which are based on customers’ transaction data, it is true that they do not really know their customers, how to support them (knowledge for the customers) and the knowledge residing in them (knowledge from the customers). Thus, Dous et al. (2005) defines CKM as the utilization of knowledge for, from and about customers in order to enhance the customer relating capability of organizations.

1.2 Problem Area Discussion

CKM is a dynamic recycling process of acquiring and refining valuable customer data by means of various paths and methods, and sharing the generated customer knowledge across the organization. Through this process the organization promotes and optimizes the customer relationships in the customer oriented organizational model, frame and environment (Feng &
Tian, 2005). According to Paquette (2006) CKM comprises the processes that are concerned with the identification and acquisition of customer data, as well as, generation and utilisation of customer knowledge. Such data exists beyond the firm’s external boundaries and the knowledge deriving from them creates value for both organizations and its customers (Paquette, 2006).

An important aspect of customer knowledge is that it is knowledge that is not owned by the firm, but by others who may not be willing to share such knowledge. A stimulus is needed for their collaboration with the firms. Recently, an emphasis on customers as partners in the knowledge creation process has been presented. Customers co-create knowledge with an organization in order to create value for both parties by sharing the knowledge residing within customers in order to create better products. Here, the two entities are working together with a shared goal in mind and the customer becomes an active and key participant in the knowledge creation process. (Paquette, 2006)

Indeed, value creation for organizations and customers through the deployment of customer knowledge is the main goal of CKM. Companies can utilize this knowledge in many different ways, but is especially valuable for innovation and the new product development function. Through recognizing customer knowledge as a key component to a firm’s ability to innovate, combined with actively searching for sources of knowledge within the business environment, an organization is able to augment its innovation capabilities. (Paquette, 2006) In this respect, the value for the customers is being created through the improved services and products that are customized according to their needs (Rowley, 2002).

Previous studies on CKM revealed that most of the successful companies consider the person behind the transaction and recording what customers do during sales and service interactions. By examining this “human data”, they can better understand and predict customers’ behaviour (Davenport et al., 2001). Their aim is to better support their customers through learning from them (ibid). In order to support customers in their buying cycle, a continuous knowledge flow directed from the company to its customers (i.e. knowledge for customers) is a prerequisite. To enable management of that knowledge, a wide array of technology is deployed. CRM systems are used to track interactions with customers and improve the delivery of products and services. At the same time, knowledge from the customer’s has to be incorporated by the company for product and service innovation, idea generation as well as for the continuous improvement of its products and services (Salomann et al., 2005).

Traditionally market research, marketing information systems, business intelligence, database marketing and direct marketing have been concerned with the collection, analysis and management of customer data for the creation of customer knowledge. Nowadays, e-business gives a new channel for CKM and CRM concepts. It is a channel in which the service experience and data gathering about the customer are closely coupled. Moreover, in e-business infrastructure the interaction between customer and companies is mediated by computers. This means that every transaction, every bit of online behaviour and dialogue can be recorded. Appropriately analyzed these data hold promise as a rich source of business intelligence. (Rowley, 2002)

The rhetoric of e-business emphasizes the opportunities for knowing customers in the digital economy (Rowley, 2002). As organizations move towards a more comprehensive e-business
environment, the business processes supporting the environment become increasingly knowledge intensive. Therefore the organization’s success and growth become dependent on the successful generation, management, and use of its own and customer knowledge across its business processes (Bose & Sugumaran, 2003). Generally, effective CKM in e-business is concerned with the dynamic integration of systems and people, in pursuit of the enrichment of the knowledge wealth of the organization (Rowley, 2002).

It seems that we are witnessing the emergence of customers as the focal point of all businesses whether they operate in business markets or consumer markets. As the advancing technologies and possibilities shape customer expectations, organizations are under pressure to improve their business processes, to develop new markets, and to improve their competitive positions using state of the art technologies. This focus on the customer, brought about by the diffusion of network-based technologies is, in turn, also hastening the transformation of the economy from goods-based to a service-based one, leading to the era of e-service. (Rust & Kannan, 2003)

1.3 Research purpose and Research Questions identification

The research on customer knowledge in e-business is often grounded in the data that can be collected about customer behaviour. It is important to appreciate that customer data can be collected through a number of different avenues and that the data from each of these avenues have different characteristics and needs different approaches to analysis and interpretation. These avenues include customer feedback, data collected from registration, during transactions, through cookies etc. (Rowley, 2002) But the organization must be able to extract relevant knowledge from these data sources in an effective and efficient manner (Desouza & Awazu, 2005). These different approaches can be used to generate a large collection of data but the challenge is to translate these data into information or knowledge in order to support the development of knowledge to create value for the organization and the customer. (Rowley, 2002)

Actually, there is no shortage of data in e-business, but there is disagreement as to the potential of such data. Academics express scepticism about the viability of interpreting traffic data in such a way that it generates useful insights into customer and user behaviour. Thus, before being blinded by the dazzling array of data that can be generated from e-business, it is useful to identify the different contexts in which customer knowledge might be used. In such a data-rich environment the necessary data to underpin useful information and knowledge creation must be available; the organizations must first secure the effective data management through the KM infrastructure. (Rowley, 2002)

It is obvious that the transformation of all the data collected into useful information and knowledge requires strong analytical skills. Companies face also the transferring of knowledge across organizational boundaries. In short, lack of time, resources, and focus can limit a company’s ability to make the critical transformation from data to insight. (Lesser et al., 2000) Customer data gathering is also complicated because the data needed by one business unit or process is often generated in another area of the organization or even by a
third party. In such a case, knowledge developed by one business unit may be available but still unused by another unit, because individuals might not have confidence in the source.

Taking the above into consideration, research on CKM in e-business environment seems to be challenging. The fact that CKM is a new subject and little empirical research, particularly in connection with specific industries, has been done, motivated this study. In the context of our discussion the research purpose is phrased as follows:

**Research Purpose:** “To provide a better understanding of how companies manage customer knowledge in the e-Business environment.”

Specifically, this study explores how companies acquire the right data in the e-business environment and how they process these data in order to generate and deploy customer knowledge. We believe that through the observation of the CKM procedures we will get a clear insight about the area of our study.

**Research questions:**

Based on the above research purpose it is found that three aspects can be studied within the scope of this research. At the beginning of this chapter certain key variables have been discussed that have emerged from previous research in this field.

- **RQ1.** How is customer data, aimed at creating customer knowledge, acquired in the e-business environment?

- **RQ2.** How is customer data processed in order to generate customer knowledge in the e-business environment?

- **RQ3.** How is customer knowledge deployed in the e-business environment?

**1.4 Delimitations**

Though customer knowledge management (CKM) is a more recent concept in marketing, research on the topic can be conducted from different industry perspectives. In view of the limited research carried out in CKM in connection with service industries, including that of banking, and given to the limited frame available to the researchers, this particular study would focus on CKM in Swedish banks. We assume that as a recent and not well established concept, CKM is more likely to be applied from the bank industry.
1.5 Overview of the entire thesis:

The entire thesis is divided into seven chapters, as presented in the following figure 1.1. In the introduction chapter, the reader can obtain a perspective regarding the background of our study, the problem discussion, the overall purpose and, our research questions. In addition, this chapter provides the delimitations of our research topic. In the literature review chapter, the previous research related to our area of study is presented. This chapter is followed by the frame of reference, that outlines the specific model which defines the variables to be examined, in relation to our three research questions. Methodology introduces the methods which we deploy for conducting our study scientifically. With respect to these methods, we provide the reader with the empirical data collected for the two case studies of this thesis. Further down, empirical data is analysed in order to provide us with the insight to form the final findings and conclusions of this thesis in the last chapter.

Figure 1.1: Outline of the thesis
2. Literature Review:

The literature review chapter will frame the study in a theoretical context. Since the research would be carried out in a qualitative approach, the role of theory here is to build a contextual background. The purpose of this chapter is to provide an overview of the relevant literature relating to each of the three stated research questions.

2.1 Background literature

This section will present the relevant background literature. Since CKM is a recent concept and little empirical research is available, this section will first present the theories from which CKM derives. Thus, knowledge, knowledge management, customer relationship management and customer knowledge concepts are initially discussed, in order to provide the reader with a better understanding and clear picture regarding CKM. The criteria for selecting the specific theories presented below, were their level of relevance with the CKM theory and the area of our research.

2.1.1 Knowledge

Knowledge has been the subject of intensive research in almost every area of organizational inquiry (Tzokas & Saren, 2004). It has been a fashionable subject in recent years, with significant attention focused on areas such as the key role of knowledge workers, the need to generate and share knowledge, and the creation of knowledge intensive organizations and societies (Walsham, 2001). In marketing, knowledge constitutes the basic tenet of the marketing concept as this is expressed by means of market orientation, which denotes the case of a firm that methodically collects and disseminates information about the customers and competitors, and takes decisions that are firmly based on this information (Hurley and Hult, 1998).

Spiegler (2000) outlined a model that relates and distinguishes the various terms and concepts of knowledge so that a clear picture results. As shown in Figure 2.1, reality is related to entities whereas data are the attributes of those entities. This model describes the knowledge creation process with the information technology playing an assistant role. In that process data are being captured from various paths and methods and are processed to create information. Information is defined as “data endowed with relevance and purpose”, or data that make a difference. Clearly, the value of information is determined by the receiver not by the sender. Data becomes information when they add value in some way, and then information becomes knowledge when it adds insight, abstractive value, better understanding. (Spiegler 2000)

- **Data** is represent, record, store, and maintain entities attributes.
- **Information** is knowing-that and is the result of data processing operations such as organizing, sorting, etc.
- **Knowledge** is defined as *knowing-how* and is a consequence of information processing operations.

![Knowledge Terms and Transformations (Spiegler 2000)](image)

- **Wisdom** is about *knowing “when”* and/or *“if”*. Knowledge contributes to wisdom through activities such as discovery, inference, value, experience and more.

Researchers have identified two types of knowledge, which are the explicit and tacit knowledge. Explicit is the type of knowledge that is relatively easy to articulate and communicate. It is the knowledge that resides in formulae, textbooks, technical documents etc. On the contrary, tacit is the type of knowledge which cannot be explicated fully and can be transferred from one person to another only through a long process of apprenticeship. Tacit knowledge is the skills and ‘know-how’ we have inside each of us that cannot be easily shared. (Lee & Yang, 2000)

**2.1.2 Knowledge Management**

Eventhough, Knowledge Management (KM) is crucial to organizational survival, yet it is a difficult task because it requires large expenditure in resources. Information Technology solutions, such as email, document management and intranets, are proving very useful in certain areas (Milton et al. 1999). The process of knowledge Management can therefore be somewhat unclear and vague (Firestone et al. 2005). Managers working in this field should realize that KM is more than groupware or an intranet (Group level/Package-Store & Share-Apply in the KM Map), more than business intelligence (Organization level/Scan-Map) and more than a yellow pages database of employee CVs (Individual level/Package-Store).
KM is engaged with the managing of company’s corporate knowledge and information assets to provide this knowledge to as many staff members as possible as well as its business process to encourage better support and more consistent decision making (Bose & Sugumaran, 2003). It seems clear that knowledge management as a distinct field of work now and has always been rooted in the individual and his or her behaviour. With the formalization of this field, attention has shifted to encourage the generation, transfer, application and re-invention of knowledge in a company (Despres & Chauval, 1999). Lee & Yang (2000) defined “KM is an emerging set of organizational design and operational principles, processes, organizational structures, applications and technologies that help knowledge workers dramatically leverage their creativity and ability to deliver business value”.

2.1.3 Knowledge Management Process

KM is basically a support process and due to pervasive nature of knowledge any business process can be transformed into a “Knowledge Management Process”, such as knowledge creation, knowledge dissemination and use (Gebert et al., 2003).

Galagan (1997) proposes the following as a sample list of knowledge management process:

- Generating new knowledge.
- Accessing knowledge from external sources.
- Representing knowledge in documents, databases, software and so forth.
- Embedding knowledge in processes, products, or services.
- Transferring existing knowledge around an organization.
- Using accessible knowledge in decision making.
- Facilitating knowledge growth through culture and incentives.
- Measuring the value of knowledge assets and the impact of knowledge management.

2.1.4 Knowledge Management Criteria

Firestones & McElroy (2005) clearly identified set of criteria which will ascertain whether the strategy can be really described as knowledge management. These criteria are as follows:

- Does the strategy aim to recognize and resolve efficiently problems encountered within the business process?
• Does the strategy clearly recognize and identify the difference between knowledge and information?

• If the strategy aims to capture information that will be used to rectify problems encountered within business processes, are there measures in place which can be later used as benchmarks to determine to what extent the information was responsible for solving the problems?

• If the strategy is designed to evaluate levels of knowledge, are there benchmarks in place to gauge these labels of knowledge and their importance of success?

• If the strategies is designed to result in improved knowledge management, does it incorporate benchmarks that can be used to gauge issues such as problem recognition, crisis handling, resource negotiation or the allocation of resources to deliver knowledge management?

From the corporation perspective KM is a process of managing corporate knowledge resources. Rowley (2002) defined “it is a holistic philosophy that drives organizations to optimize the utilizations of their knowledge resources. These knowledge resources include both explicit knowledge that might be recorded in databases and other archives, and implicit knowledge that is held in workers’ minds, and which is embedded in the fulfilment of their job role. Except corporate knowledge resources, now it is emerging that customer is more powerful than before. As a consequence customer knowledge is an important asset for the company.

2.1.5 Knowledge Management capabilities needed for CRM

In order to implement knowledge – enabled CRM process, companies need to provide and support several categories of knowledge management capabilities through the development and integration of currently available technologies. The capabilities framework (fig 2.2) developed by Bose & Sugumaran (2003) and it is designed around enterprise knowledge portal with the intention of acceleration of the knowledge management penetration within organizations because the users will expect that the interface component of the architecture to offer similar capabilities for knowledge management, such as search engines and automatic document summarization, across an enterprise wide collection of documents.

At the high level of this framework explained as comprised of two parts. First it is designed to leverage existing knowledge and to enable creation of new knowledge through a continuous learning process denoted by the knowledge learning loops. And second the rectangular level boxes denoted the KM capabilities and a few currently available technique or technologies that can provide them. Bose & Sugumaran (2003) described knowledge management capabilities in the following way:

*Presentation* involves personalizing both the access to and displaying of the results of user interactions with the system. It is designed to let every organizational user know where to go
to find the organization’s knowledge through a single browser-based point of entry to all information that the user may need.

The **personalization** function helps personalize content and services to deliver tailored content or information to users based on several user criteria or preferences. The primary capabilities of this function include the creation of personalization profiles of individual users or groups or departments or divisions, providing personalized navigation, providing personalized notification, and the ability to personalize the content categorization. Personalization is often accomplished by using software agents, commonly called spiders, to get the information and handle user profiling.

The **collaboration** function is designed to connect people with people through communities of practices; to preserve discussions; and to stimulate collaboration by integrating the knowledge repositories and collaboration applications such as workflow.
The process function allows users to participate in relevant business processes in the context of their own roles. Through this function, users have access to knowledge management applications such as knowledge or evidence based decision support system applications that enable increased responsiveness to customers and partners.

The publishing and distribution function provides the means and a platform for users to easily capture and distribute the particular kinds of knowledge assets they need to monitor without requiring them to learn complex programming syntax. Software agents are used extensively for this function. These agents are designed in such a way that users can set up and control them. The users can specify in them the type of knowledge he or she wants to publish, distribute, and receive. The frequency (by time and/or quantity) and method (by e-mail or Web page) are important parameters that should be set up by the users.

The integrated search function is designed to reduce the information overload and usefulness of search results to the users. Integrated searches across all repositories are performed by default but users can also identify the repositories they want to search such as Web pages, e-mails, and discussions. This function should also provide the ability to automate indexing and to crawl frequently to keep the index current.

The categorization function allows users to browse, create, and manage knowledge categories. It establishes a process and guidelines for authoring and publishing knowledge categories by the users. Business groups or departments or divisions are made responsible for creating and managing their own subject area taxonomies.

The integration function ensures seamless and consistent navigation among and between the above functions and knowledge sources such that all individuals can use the organization’s combined knowledge and experience in the context of their own roles.

2.1.6 Customer Relationship Management (CRM)

CRM is a process designed to collect data related to customers, to grasp features of customers, and to apply those qualities in specific marketing activities. Researchers suggest that CRM is an information industry term for methodologies, software, and usually Internet capabilities that help an enterprise manage customer relationships in an organized way. It focuses on leveraging and exploiting interactions with the customer to maximize customer satisfaction, ensure return business, and ultimately enhance customer profitability.

Generally, CRM is defined as an interactive process that achieves an optimum balance between corporate investments and the satisfaction of customer needs to generate the maximum profit. According to Gebert et al. (2003) CRM entails:

- Measuring both inputs across all functions- including marketing sales and service costs- and outputs in terms of customer revenue, profit and value.
• Acquiring and continuously updating knowledge on customer needs, motivations and behaviour over the lifetime of the relationship;

• Applying customer knowledge to continuously improve performance through a process of learning from success and failures;

• Integrating marketing, sales and service activities to achieve a common goal;

• The implementation of appropriate systems to support customer knowledge acquisition, sharing and the measurement of CRM effectiveness;

• Constantly contrasting the balance between marketing, sales and service inputs with changing customer needs in order to maximize profit. (Gebert et al., 2003)

Furthermore, a widely accepted classification of systems connected to CRM is the operational, analytical and collaborative. E-CRM presents the Internet based perspective of CRM. (Xu & Walton, 2005)

**Operational CRM:** Customer data is collected through a whole range of touch points such as contact center, contact management system, mail, fax, sales force, web, etc. The data then are stored and organized in a customer centric database, which is made available to all users who interact with the customer. A typical operational CRM is the contact center and contact management. A contact management system can provide complete and comprehensive tracking of information relating to any contact with customers. This is known as 100 per cent focus on the customer.

**Analytical CRM:** Data stored in the contact centric database is analyzed through a range of analytical tools in order to generate customer profiles, identify behaviour patterns, determine satisfaction level, and support customer segmentation. The information and knowledge acquired from the analytical CRM will help develop appropriate marketing and promotion strategies. This type of CRM is referred as a 360 view of the customer. Technologies underpinning the analytical CRM system include CRM portals, data warehouses, predictive and analytical engines; pattern discovery association rules, sequential patterns; clustering, classification and evaluation of customer value. As a result of the analysis, customers are more effectively segmented and offered products and services that better fit their buying profiles.

**Collaborative CRM:** The CRM systems are integrated with enterprise-wide systems to allow greater responsiveness to customers throughout the supply chain. For instance, a CRM can be extended to include employees, suppliers, or partners. A collaborative selling CRM can offer knowledge and tools to everyone in the extended enterprise, and to help drive sales through every channel from call center to the web.

**E-CRM** is the Internet related CRM. It allows customer information to be available at all touch-points within the company and among external business partners through the Internet.
and the intranet. e-CRM can is defined as a web-centric approach to synchronizing customer relationships across communication channels, business functions, and audiences. It enables online ordering, e-mail, a knowledge base that can be used to generate customer profiles, personalized service, the generation of automatic response to e-mail, and automatic help. (Rowley, 2002)

2.1.7 CRM solution architecture

With this architecture (fig 2.3), customers and business partners have a single point of entry into organization’s knowledge resources.

![Diagram of CRM solution architecture](image)

Figure2.3: CRM solution architecture (Massey et al., 2001)

The acquisition and distribution of data, information, and knowledge is becoming more and more important to firms. As such, the solution architecture places an emphasis on accessing and analyzing data real-time in support of the customer, rather than simply capturing transactions. Dating mining, neural networks, and other forms of online analytical processing are available to backend enterprise processes, as needed. In sum, this figure illustrates a unified CRM entity where all CRM solution segments will be integrated together beyond a silo view.
2.1.8 Customer Knowledge

Customer knowledge has increasingly been recognized within marketing as a significant resource that can be managed to support research and development (Gibbert et al. 2002), to improve innovation, to facilitate sensing emerging market opportunities and to support the management of long term customer relationships (Darroch & Mcnaughton, 2003). According to Guaspari (1998) customer knowledge refers to understanding your customers, their needs, wants and aims is essential if a business is to align its processes, products and services to build real customer relationships.

On the other hand, Paquette (2006) goes a step further and suggests that customer knowledge can be composed of a combination of customer knowledge, supply chain knowledge, joint venture specific knowledge and so forth. This knowledge is created within a two flow of knowledge which creates value for buyer and supplier. It goes beyond information identifying and classifying customers, to knowledge that is resident within the external organization that has been developed through industry and market experience. Examples can be consumer preferences of new products, knowledge derived from joint research and development, design improvements from suppliers intended to reduce the cost of manufacturing and knowledge regarding trends within the business environment. (Paquette 2006)

Figure 2.4: Summary of customer knowledge (Paquette, 2006)
An important aspect of customer knowledge is that it is not knowledge owned by the firm, but by others who may or may not be willing to share such knowledge. Furthermore, the ability to design and improve new products is also impacted by the level of customer knowledge flows. A depiction of customer knowledge flows is shown in figure 2.4 (Paquette 2006)

Desouza & Awazu (2005) defined customer knowledge management (CKM) involves leveraging three types of customer knowledge:

*About the customer:* There are three types of about knowledge, processed demographic, psychographic and behavioural. Nowadays, technology has led to an abundance of information on customers. This is collected from multiple sources – financial institutes, credit reporting agencies, local stores, etc. Loyalty card and RFID (radio frequency identification devices) gives accurate and detailed information about customers’ purchasing habits which have had to guess at just a few years ago and can record and store this information with ease. But the organization must be able to extract relevant knowledge from these information stores in an effective and efficient manner. The most common technique is data mining which seeks to uncover patterns hidden in vast amounts of information. Data mining analysis of point – of – sale data uncovered the ways in which patrons customized the standard offerings. This kind of knowledge helps an organization understand its customers and target them effectively. (Desouza & Awazu , 2005)

*For the customer:* Support knowledge improves the customer’s experience with products and services. It is five times more expensive to find a new customer than retain an existing one, and ensuring a pleasant user – experience is critical for retaining customers. The growth of e commerce makes a pleasurable user experience even more vital. To enable management of support knowledge, a wide array of technology is deployed. Customer relationship management (CRM) systems are used to tract interactions with customers and improve the delivery of products and services. And the Internet is again useful, as it can transmit product documentation, trouble shootings guides, repair manuals and other forms of support knowledge. (Desouza & Awazu , 2005)

Some organizations have gone a step of further and are using the Internet as an interactive medium to handle customer support queries. Through the use of chat rooms, emails and structured reasoning systems, customers can resolve queries and problems online. Although technology enabled mechanisms for customer support knowledge delivery has increased enormously, we can not entirely overlook the human element. Automated techniques work well for supporting problems that are well structured and easy to diagnose and solve, and also where there is little need for detailed explanation of processes. For complex problem still needs humans to transfer and apply customer knowledge (ibid). This type of customer knowledge is usually single directional from the enterprise to the customer wherein the enterprise provides customers with necessary knowledge so that the latter can better understand the product and service offered by the enterprise (Feng & Tian, 2005).

*From the customer:* From knowledge can be defined as the ideas, thoughts, and information the organization receives from its customers. These insights can be about current products and services, customer trends and future needs and ideas for product innovations. Ideas for
successful product innovations usually emerge from end-users and customers—not from within the organization. So the organization must actively seek out such knowledge to discover innovation. The focus must be on delivering what customers want—not to create something and then convince customers that they want it. This involves observation and dialogue. But the problem with dialogue is that customers cannot articulate what they want—they do not realize they need something until the innovative products offer to them. User toolkits attempt to address this problem. They can help customers innovate and customize products to meet their particular needs and preferences. Using toolkits lifts the burden of manufacturer, reduces design cycle time, and is more effective as a means of elicit customer knowledge. (Desouza & Awazu, 2005)

In the meantime, the organization can deploy one generic product that can be customized by a wide ranging user community, rather than having to provide multiple solutions for the idiosyncratic customer. In addition to empowering customers, many organizations are now consciously tapping into their lead user segments for knowledge. The current needs of lead users will become requirements for other users in the marketplace within months or years. Lead users have foresight, and this helps an organization identify incremental and radical innovations and plan product improvement more effectively. (ibid)

Some organizations now host user conferences so they can see how customers utilize their products and how they customize the products. This is to be expected because as products become more sophisticated, it’s rare that customers will want the same products for the same process. An organization can not interact closely with all of its customers in order to seek out knowledge from them. By investing resources in listening to customers who buy in bulk and/or who are repeat customers, a company can implement mechanism to select the customer segment that needs to be polled. The management of from knowledge has a stronger human element than the other two types. Good communication is vital to gaining such knowledge. (ibid)

2.1.9 Customer Knowledge Management (CKM)

Rowley (2002) suggests that customer knowledge management is concerned with the management and exploitation of customer knowledge. According to Paquette the process that a firm employs to manage the identification, acquisition and internal utilization of customer knowledge are collectively referred to as Customer Knowledge Management (CKM). It is within these processes that an organization and its customers collectively work together to combine their existing knowledge to create new knowledge (Paquette, 2006). Accordingly, Gibbert et al. (2002) states that CKM is the strategic process by which companies emancipate their customers from passive recipients of products and services, to empowerment as knowledge partners.

Many studies have used customer knowledge and customer information interchangeably, causing confusion between the two terms. One main theory states that understanding “how each customer interacts with business processes is to gain knowledge about that customer”. Other authors would describe this only as customer information, as it is knowledge about the customer and is gained without a predetermined close interaction or partnership. Some of
them also examine the use of customer information within a retail environment, and look at how data mining can contribute to an organization’s understanding of the customer. Once again, the emphasis is on acquiring information about the customer, without interaction or joint knowledge creation. (Paquette, 2006)

Davenport et al. (2001) begin to argue that knowledge about the customer is only the first step, and organizations should create processes to better manage the relationships they discover with this information to create profitable interactions. The focus they present remains with learning about the customer’s needs through different channels. However, the customer’s involvement in the knowledge process is still passive, and not participatory (Paquette, 2006).

However, CKM gives an emphasis on customers as partners in the knowledge creation process. Customers co-create knowledge with an organization in order to create value for both parties by sharing knowledge residing within customers in order to create better products. Here, the two entities work together with a shared goal in mind, and the customer becomes an active and key participant in the knowledge creation process (Paquette, 2006).

Gibbert et al. (2002) examined a set of organizations that have implemented this idea into their customer relationship strategy, and described the types of CKM they observed. Research findings show the following (Table 2.1) styles of CKM and their application, which are:

<table>
<thead>
<tr>
<th>Table 2.1: Five styles of CKM</th>
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</table>

<table>
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<tr>
<th>Style/Characteristic</th>
<th>Prosumerism</th>
<th>Team-based Co-learning</th>
<th>Mutual Innovation</th>
<th>Communities of Creation</th>
<th>Joint IP/Ownership</th>
</tr>
</thead>
<tbody>
<tr>
<td>Focus</td>
<td>Developing tangible assets and benefits</td>
<td>Creating corporate social capital</td>
<td>Creating new products &amp; processes</td>
<td>Mission-specific Professional expertise</td>
<td>Tangible customer IP sharing</td>
</tr>
<tr>
<td>Objective</td>
<td>Improved products &amp; resulting benefits</td>
<td>Facilitate team learning for dealing with systemic change</td>
<td>Create max. return from new ideas</td>
<td>Obtain &amp; explicate professional expertise</td>
<td>Max. returns on IP jointly</td>
</tr>
<tr>
<td>Processes</td>
<td>Pre-, concurrent &amp; post-production integration</td>
<td>Teamwork, empowerment, case development, quality programs</td>
<td>Idea faire; brainstorming; customer incubation</td>
<td>Best practices CoPs, expert networks</td>
<td>Apprenticeships Formal training programs On job training</td>
</tr>
<tr>
<td>Systems</td>
<td>Planning, control and decision supply systems</td>
<td>Knowledge sharing systems, digital ‘nervous’ systems, customer visits in teams</td>
<td>Idea generation support systems</td>
<td>Expert systems, shared e-workspaces, group support systems</td>
<td>Group IP support systems</td>
</tr>
<tr>
<td>Performance Measures</td>
<td>Effectiveness, efficiency, customer satisfaction &amp; success</td>
<td>Systems productivity quality, customer satisfaction &amp; success</td>
<td>ROI from new products &amp; processes, customer success</td>
<td>K-sharing behavior, timeliness of decisions, rate of hyperlinked results</td>
<td>Value of new IP, incremental ROI on new revenue streams</td>
</tr>
<tr>
<td>Case Examples</td>
<td>Quicken; IKEA</td>
<td>Amazon.com; Xerox, Hockim, Mettler Toledo</td>
<td>Silicon Graphics, Ryder</td>
<td>Microsoft; Sony; eBay; Hockim</td>
<td>Skandia</td>
</tr>
<tr>
<td>Intensity of Interaction</td>
<td>Relatively low</td>
<td>Low to high</td>
<td>Relatively low</td>
<td>Relatively high</td>
<td>Relatively high</td>
</tr>
<tr>
<td>Type of Knowledge</td>
<td>More explicit</td>
<td>Explicit and tacit</td>
<td>More tacit</td>
<td>More tacit</td>
<td>More explicit</td>
</tr>
</tbody>
</table>

Source: Gibbert et al. (2002), pp. 465
2.1.10 CKM: an integrated management approach

In general CKM and Customer Relationship Management (CRM) used interchangeable and CKM may seem another name of CRM or KM. But customer knowledge managers require a different mindset along a number of key variables (Gibbert et al. 2002). Figure 2.5 represents the key aspects of CKM as a management area in between KM and CRM.

<table>
<thead>
<tr>
<th>Customer Knowledge Management: an integrated management approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Disciplinary partners&quot;: CRM and KM approaches</td>
</tr>
<tr>
<td>Perspective: In customer interface and inside the organization</td>
</tr>
<tr>
<td>Key actors: Employees and customers</td>
</tr>
<tr>
<td>Key communication context: Interaction between organization and customers</td>
</tr>
<tr>
<td>Conceptual foci: What is customer knowledge? Different sources and types of customer knowledge</td>
</tr>
<tr>
<td>Key processes: Generating, disseminating and using customer knowledge within organization and between organization and its customers</td>
</tr>
<tr>
<td>The goal: Learning about, from and with customers, in order to support CRM efforts</td>
</tr>
</tbody>
</table>

Figure 2.5: Customer knowledge management as an integrated management approach (Rollins et al 2005)

Moreover, Gibbert et al. (2002) identified some key variable and on the basis of those variables they have developed the followings table of comparison:

Customer knowledge managers require a different mindset along a number of key variables (Table 2.2). Customer knowledge managers, first and foremost focus on knowledge from the customer (i.e. knowledge residing in customers), rather than focusing on knowledge about the customer, as characteristic of customer relationship management. In contrast to KM’s very appropriate focus on fostering productive and collaborative relationships. The logic of CKM seems counter-intuitive, the challenges of getting employees to share their knowledge with one another are overwhelming enough.
2.1.11 e-CKM Model:

As is being discussed above, customer knowledge management (CKM) model has drawn much attention by the combination of both the technology-driven and data oriented approaches in CRM and the people-oriented approach in KM, with a view to exploit their synergy potential. The expectation from this endeavour is to more articulately delineate knowledge ‘for’ customers, knowledge ‘about’ customers, and knowledge ‘from’ customers, so that more beneficial products can be delivered to the right group of customers, to prevent product failure and to ensure commercial success. (Su et al., 2006)

With this background and the objective of addressing the essentiality of customer knowledge in innovative new product development (NPD), Su et al.(2006) presents a methodology to support the argument that in order to ensure business excellence, a product’s features must meet the needs of specific customer groups in the market. This is accomplished by a target marketing-oriented customer knowledge management-model implemented by information technology, which is named E-CKM model (fig 2.6).
In the E-CKM model described in the following figure 2.6, the CKM process comprises four stages which are supported by the applications of different methods in information technology. At the first stage, the company identifies perspective product benefits in terms of a customer’s perceived value, in the form of features, functions, and other attributes which can be communicated to the customers.

![Figure 2.6: The E-CKM model (Su et al., 2006)](image)

At this stage, the company delivers product knowledge for the customers. Individual customers may make response based on their own attitudes toward these features or benefits, via a bi-directional communication channels. Moreover, at the second stage, the company acquires knowledge about the customers by understanding the customers’ background, needs, and preference pattern toward product features. (Su et al., 2006)

Through that communication and a web-based survey, a company is able to utilize knowledge for customers and knowledge about customers, and conduct the appropriate market segmentation task. After the segments are formed through data mining, each segment’s pattern of needs towards product features is well delineated. Now the different characteristics of each segment can be identified and analysed. At this (third) stage the tacit customer knowledge, dispersed among the individual customers is excavated, and it can be codified into explicit customer knowledge desired by the company. (ibid)

Finally, once the segmentation task is completed, the characteristics of the customers’ needs in each segment are studied in order to extract the needs patterns in each segment. Therefore, the knowledge from customers enables the company to aim at the right target market.
segments. It also enables them to make the appropriate strategic business decisions in the product variant development plan and marketing activities. It helps the company to revise the original definition of the product, set priorities for product attributes to be developed, enhance the functionality of the attractive product elements, and rule out product features in which the customers show no interest. And this is the way the company can innovate or improve the product with the utilization of the knowledge from the customer. (ibid)

2.2 Customer Data acquisition

 Corporations are beginning to realize that the proverbial “if we only knew what we know” also includes “if we only knew what our customers know”. CKM is contrasted with knowledge about customers, e.g. customer characteristics and preferences prevalent in previous work on knowledge management and customer relationship management (CRM) (Gibbert et al. 2002). Managing customer knowledge is still not a simple task. Most of the companies acquire customer data from transactions, which Rowley (2002) defined as knowledge about customers, and another important source of customer knowledge is customers’ encounters where the buyer and seller meets. And the challenge is how to collect and manage this customer knowledge and embedded in organizational process.

2.2.1 Source of customer data and guidelines for managing it

In order to meet the objectives of acquiring customer knowledge resources, Davenport et al. (2001) study revealed that mixing transaction data and human data, a strategy that the CKM leaders support, gives them the best results. But it doesn’t mean to integrate the data. To compete for customer satisfaction, firms must work harder to collect, distribute and use the right data.

Although transaction data is relatively easier to manage than data from human interactions, it’s still not simple. The biggest issue is how to collect only the data you need and not waste time and effort on useless information. Most firms gather too much customer data and then find it difficult to access the data. (ibid)

On the other hand, customers are people and not simply the stacks of transactions. So any effort to manage customer knowledge must go beyond transaction data analysis. The forms of customer knowledge that are more human in nature are least likely to captured and shared such as customer comments, a salesperson’s interpretation, a synthesis of a customer’s new organizational structure. (Davenport et al., 2001)

After their study, Davenport et al. (2001) addressed some general rules for acquiring and sharing data from customer interaction.

- Give every customer a unique identifier: It’s hard to collect and share knowledge about a customer if you are not sure everyone is talking about the same person.
• Find an internal champion: It takes time and work to collect this kind of data. Determine who will benefit from the results and involve this person or group in piloting the effort.

• Do your homework: You will have to spend more time talking to customers, so before starting this effort familiarize yourself with what your target customer value.

• Don’t overwhelm everyone with useless knowledge: Manage only what people find useful by using filtering technologies to limit what you request and send.

• Start simply: Try to find employees who are located in the same office and serve the same customer.

2.2.2 CKM Cycle

As described before, customer knowledge comprises knowledge for, knowledge about and knowledge from customers. Knowledge for customer is mainly generated in processes within the enterprise, such as in research and development of production. Campaign management is responsible for collecting this knowledge and refining it in respect of the customer requirements. (Gebert et al., 2003)

Knowledge about customers is mainly captured by offer management, service management, complaint management and, if available, contract management. Campaign management and service management are the main user processes of knowledge about customers, because both processes personalize their services as based on user criteria. Within the company, knowledge about customers must be transparent, although its dissemination beyond the borders of an organization must be controlled, since this knowledge can often be directly transformed into competitive advantages. The development of such knowledge is also expensive, because knowledge explication takes time and draws attention from the main task, i.e. serving the customer. Interaction management offers opportunities to automatically gain knowledge about customers via the electronic media. The critical challenge when managing knowledge about the customer is the question of how much data about the customer an enterprise can transform into knowledge. (ibid)

Knowledge from customers can be captured in the same ways as knowledge about customers. Gaining knowledge from customers is based on the fact that customers gain their own expertise while using a product or service, and that they can be regarded as equal partners when discussing changes or improvements. (ibid)

Derliyski & Fröhlich (2004) links the various forms of customer knowledge (Knowledge about the customer, Knowledge of the customer and Knowledge for the customer) with knowledge management processes. The different steps are depicted in a closed cycle called the Customer knowledge management cycle in Figure 2.7
Acquiring knowledge of the customer constitutes the starting point of that cycle. Through processing the knowledge of the customer it becomes knowledge about the customer. In order to leverage that knowledge for innovations and product improvements it must be stored and disseminated within the company. In the next step knowledge deficits of the customer need to be identified. This knowledge for the customer is developed, provided and communicated to the customer in order to dispel the identified deficits. Through this process in turn the customer’s knowledge increases. This is where the cycle closes.

2.2.3 Methods of acquiring customer data in e-business environment

The web apparently empowers customers with more choices and best prices. In the meanwhile, this technology also gives retailers wealth options for reaching more customers, understanding their customer better and offering their customers with world class online experiences. Particularly the web facilitates businesses in acquiring customer data. The most common methods of customer data acquisition are web based surveys, online communities, transactions, server log file and cookies. (Lee et al., 2006)

Web-based survey:
Customer provides via Internet information in response to a request for the information. Data specific to the topic can be collected. This involves recourse to traditional and well-tried market research methods such as focus groups, interviews and questionnaires. But there is now the opportunity and possibly necessity to interact with customers electronically.
Electronic data which are entered directly by customers can eliminate the need for transcription (Lee et al., 2006).

As well, for businesses with global or simply a geographically scattered customer base, electronic interaction may be useful. These means of gathering data have many of the attractions and limitations of data gathering approaches in other business channels, such as potentially low response rates, but give the opportunity to ask detailed questions specifically on the topic around which data are required. (Rowley, 2002) Su et al. (2006) are more specific in their study and propose that an online market survey such as a questionnaire can provide the companies with responses from customers about their attitude, preferences, needs and perceived value for product features offered. Additionally, companies can extract clues on the pattern of the customers' needs if the company’s intentions are to offer products to target specific groups of customers (Su et al., 2006).

**Online community:**
Those communities ensure an audience and a marketplace for e-business. Online communities are computer mediated space where there is an integration of content and communication with an emphasis on member generated content. In order to be attractive to all stakeholders, online communities need to create value for each of their stakeholders. And that because customers as members of such communities are not under any contractual obligation to participate or contribute. Thus, the effectiveness of online customer communities is crucially dependent on the way in which the community is managed and the nature of relationships in them. At the heart of each of these different approaches to create value is knowledge exchange. (Rowley, 2002)

The main characteristics of online communities, according to Preece and Diane (2003), are the following:

- Members have a shared goal, interest, need, or activity that provides the primary reason for belonging to the community.
- Members engage in repeated, active participation and there are often intense interactions, strong emotional ties and shared activities occurring between participants.
- Members have access to shared resources and there are policies for determining access to those resources.
- Reciprocity of information, support and services between members is important.
- There is a shared context of social conventions, language, and protocols.

The narrowest definition of the membership of online communities is that those members are visitors who are registered to participate online in bulletin boards, online forums, and other
community spaces are deemed to constitute the membership of the community. (Rowley, 2002)

Customers provide information about themselves (e.i. demographics and interests) during their participation. Data about customers or customer knowledge about products or services can be collected. This presents opportunities for transacting business and communicating messages about products and services that are of interest to consumers, and which marketers and advertisers value and are consequently willing to pay. Moreover, a member input to the community consists of information content in the form of comments, feedback, elaborating their attitudes and beliefs and information needs. Thus, they can contribute knowledge that the business does not have about the efficacy of specific products. (Lee et al, 2006)

Transactions:
Customers provide information when they are involved in transactions with online merchant. The merchant can store customer’s name, address, e-mail address, credit card details and any other details that the customer provides during a purchase or registration transaction (Rowley, 2002). In addition to personal information, the website that customers have visited can be recorded and analyzed (Lee et al, 2006). Every day, transaction data is created which has the potential to help companies understand their customers better, and make better decisions to enhance customer relationships. But simply amassing customer transaction data doesn't assure results (Harris, 1999).

Intelligently and selectively integrating transaction data with externally produced data can lead to new markets and opportunities. For example, in order to identify new customer segments, knowledge about existing customer behaviour must be compared to the characteristics of potential customers. Employees need to be armed with the right skills, knowledge, and experience to process the transaction data. They must have a clear understanding of what outcomes they are trying to achieve, and be supported by an organization (culture, infrastructure, and metrics) that effectively implements fact-based decisions. (Haris, 1999)

Server log file:
Even if the customer does not engage in a transaction, the server log file can be analysed to assess the sites that a user from a specific IP address has visited. These data can be analysed to provide a profile of searching habits and sequences from a specific IP addresses, or to provide a profile of hits and traffic to specific web sites. (Rowley, 2002)

Server log file partially are motivated by the need to support the collection of data for demographic analysis and for log summaries. This format permits customized log files to be recorded in a format readable by generic analysis tools. For instance, web server log file analysis software can be used to analyze server files and to create a number of different measures of page impressions. These data can be useful in assessing the effectiveness and attractiveness of a site. (Eirinaki & Vazirgiannis, 2003)
Cookies:
A way of uniquely identified a visitor through a session is by using cookies. Cookies are the data send by a web server to a web client, stored locally by the client and sent back to the server on subsequent request (Eirinaki & Vazirgiannis, 2003). Moreover, cookies are used by server side connections to store and retrieve information on the client side of the connection. Web browsers set aside a small amount of space on the client's hard drive, in which to store a server side user identification number, the date of the user’s last visit, plus other useful information, such as preferences. Each time the client connects through the server, the server looks for the cookie on the hard drive, and through this cookie is able to identify the client (Rowley, 2002)

2.3 Processing of customer data

Effective Customer Knowledge Management systems have the potential to translate data into Knowledge. Customer knowledge must also effectively reach all the necessary parts of an organization. It is necessary that organizations have a knowledge culture that will add to the effective and efficient processing, dissemination and utilization of customer knowledge. Rowley (2005) stresses the importance of knowledge culture, so that the culture and the other aspects of the organizational environment are conducive to more effective knowledge creation, transfer and use. This may involve tackling organizational norms and values as they relate to knowledge. Only then the KM infrastructure of the organization can effectively contribute to the successful implementation of CKM activities. (Rowley, 2005)

Traditional KM approaches, such as an electronic knowledge repository are helpful because they are designed to support distribution (Davenport et al., 2001). KM systems are concerned with the management of an organization’s knowledge through the processes of creating, structuring, disseminating and applying knowledge (Rowley, 2005).

2.3.1 Knowledge management framework

Knowledge capture is the process by which knowledge is obtained and stored. Knowledge resources vary from organization to organization. Examples relate to customer information, human resources data, competitor products data, and government regulation. Knowledge or information can be obtained from the internal or external environment, and be stored in information systems (Lee & Hong, 2002). But the main focus of our study in acquiring external knowledge that is customer knowledge

In order to identify the needs and wants of the customer companies collect customer data from different sources, but the real challenge is converting this data to customer knowledge. Bose and Sugumaran (2003) proposed the KM framework (fig 2.8) which consists of four major processes, such as knowledge identification and generation, knowledge codification and storage, knowledge distribution and knowledge utilization and feedback.

From the following figure it is being observed that in order to create knowledge repositories organizations need a KM infrastructure. By using this infrastructure organizations can
generate knowledge repositories from external sources such as database, as well as, internal sources.

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**Figure 2.8: Knowledge management framework (Bose & Sugumaran, 2003)**

*Knowledge identification and generation* process includes recognition and creation of new information and knowledge. It focuses on determining the relevant customer data, process and domain knowledge needed to successfully carry out CRM activities. It also involves the acquisition or generation of this knowledge by monitoring the activities of customers and other players in the industry. (Bose & Sugumaran, 2003)

*Knowledge codification and storage* process involves converting knowledge into machine readable form and storing it for future use. It deals with archiving the new knowledge by adding it to a persistent knowledge repository that all stakeholders can use. This process consists of mapping the knowledge to appropriate formalism, converting it to the internal presentation and storing it in the knowledge repository. For internal presentation and storage, technologies such as XML and universal description, Discovery and Integration (UDDI) formalism can be used. These approaches facilitate easy search and retrieval of relevant knowledge from the repositories, which enables the stockholders to apply this knowledge in decision making. (Bose & Sugumaran, 2003)

*Knowledge distribution* process relates to disseminating knowledge throughout the organization and handling requests for specific knowledge elements. Knowledge dissemination can employ either push or pull technologies depending upon the organization’s culture and infrastructure. (Bose & Sugumaran, 2003)

*Knowledge utilization and feedback* process comprises the usefulness of knowledge and the feedback providing. This process enables the stakeholders to identify and retrieve relevant knowledge needed for solving a particular problem. In order to solve a particular problem, utilization of this knowledge may result in additional knowledge that can be abstracted out and stored in the knowledge repository for future use. Stakeholders can provide feedback regarding the quality of knowledge stored in the repositories, as well as, how easy or difficult
to search of relevant knowledge. They also can identify new types of knowledge that need to be gathered based on strategic objectives and the changes that are taking place within the environment. (Bose & Sugumaran, 2003)

2.3.2 Technical architecture to incorporate KM

A technical architecture, as depicted in Figure 2.9, is presented in this section to illustrate how existing EC sites can be extended to incorporate knowledge management tools.

![Figure 2.9. A Technical Architecture of a Knowledge-Enabled EC Environment (Chen & Liou, 2002)](image)

The architecture diagram illustrates how can integrate database, data warehouse, and knowledge-based systems to support an information-rich and knowledge-enabled e-business system. This technical architecture supports the knowledge management framework described in 2.3.1. This architecture can be viewed as a multi-layer system and the building blocks in each layer have been labelled according to the description in the following:

The static Web content layer: The first layer includes the Web servers, Web server log files, and the static Web contents. The Web contents can be in HTML or XML formats. XML may be used to deliver content to multiple viewing devices. The Web site usage information is stored in a Web log file. Web site analysis tools such as WebTrends can use log files to study visitors' usage patterns. The result of such a study can be used as a basis for redesigning a Web site. (Chen & Liou, 2002)

The dynamic contents and transactional processing layer: The second layer includes server-side scripts, software components, and the operational databases. Structured contents that
need to be managed and updated in a timely manner are stored in databases. Database contents can be accessed via server-side scripts to be returned dynamically to Web users. Transaction data is stored in transaction databases containing information about customers, products, and sales transactions. (Chen & Liou, 2002)

*The data warehouse and OLAP layer:* The third layer consists of data warehouse systems and front-end online analytical processing (OLAP) tools. The transaction data stored in the operational database is extracted, filtered, and consolidated into a database managed by the data warehouse environment. The design of a data warehouse is usually represented as a star schema or a snowflake schema about a subject area. The star schema is centered on a fact table that is related to several dimension tables. When some dimension tables are further refined into more abstract dimension tables by extracting low cardinality attributes into tables of their own, the resulting design is referred to as a snowflake schema. OLAP tools can be used to allow managers to access and analyze information from various dimensions. Recently, many data warehouse systems are becoming Web-enabled; access to such systems is more convenient. (Chen & Liou, 2002)

*The knowledge base layer:* The fourth layer includes knowledge base and KM tools. Via data mining and other knowledge acquisition techniques, rules and heuristics can be derived and stored in a knowledge base. The term knowledge and knowledge base is used in a very narrow sense in this context. The knowledge can be used to guide the employees in using information more effectively. The Web site can use such knowledge to provide customers with more personalized contents or services. Knowledge about products may help the site to provide better product selection advice. In a broader sense, documents, databases, data warehouses, and knowledge bases are all considered as sources of knowledge.

2.4 Deployment of customer knowledge

The most important part of managing human interaction-based knowledge is using customer knowledge to do something differently. Making customer data widely available to customers and internally is a good idea but the proper course of action depends on too many unpredictable factors because the changing behaviour of customers. Sometimes customers become confused regarding their wants. As a consequence, managers must decide when to take a particular item of customer knowledge seriously and when to discount it or look for more confirmation (Davenport et al., 2001).

2.4.1 Usage of Customer Knowledge

The use of customer knowledge in CKM is obvious that must meet the objectives of CKM. Davenport et al.’s (2001) study revealed the objectives of CKM models that were common to the leading companies of his sample. These are as follows:

1. Segment the customer base

2. Prioritize customers: Based on the needs of the customers
3. Know what your customers want to know.

4. Understand your customer’s Internet behaviours.

5. Engender customer loyalty.

6. Innovate existing products.

7. Extended product or services.

8. Improve success in cross selling

Moreover, Rowley (2005) mentioned the usage of customer knowledge. She described, in general terms, organizations use their customer knowledge to enhance the perceived value of their offering to customers. They can do this by:

*Customer portfolios:* The concept of a customer portfolio parallels that concept of the product portfolio. Businesses are beginning to assess the value that a customer contributes to the business. Customer value can be calculated by an examination of the last date of purchase, the frequency of purchases in store, and the monetary value of those purchases. Customer retention is expensive, in terms of, for example, expenditure on special offers, marketing communication, and the operation of rewards given through loyalty schemes. Nevertheless, it is generally perceived to be cheaper than customer acquisition. Businesses are becoming increasingly aware that for certain groups of customers, the costs of customer retention may outweigh their long-term profitability to business. So, one of the uses of transaction data is to assess from customers level of engagement with the business, whether to continue to encourage their ‘loyalty’ or whether they fall into a category of ‘non-preferred customer’ who are less likely to be offered incentives to continue to engage. (Rowley, 2005)

*Building segments:* Personal data entered on registration forms and the like is valuable in segmenting customers. Segmentation may be conducted on the basis of whether there are children in the family, age, income, geographical location, and a host of other factors. These factors can be correlated with transaction data to generate typical transaction patterns for specific segments. Once these segments exist, the business can focus on tailoring marketing communication and product development to meet the perceived needs of these segments. (Rowley, 2005)

*New product development:* Transaction data profiles for specific groups can indicate the product lines that are preferred by specific segments. This may suggest new product opportunities or routes to the enhancement of exiting products. Purchase profiles also offer insights into brand, design, quality, pricing choices and preferences, which may impact on decision making in new product design. (Rowley, 2005)
Furthermore, as previously presented Su et al.’s (2006) E-CKM model presents four specific steps for processing the data to generate customer knowledge, with the aim of an innovative product development. More specific those are:

- **Product features and benefit identification**
- **Customers needs categorization**
- **Market segmenting for converting tacit customer knowledge into codified knowledge**
- **Customers’ needs pattern extraction**

**Business processes and customer service:** Knowledge of customers and their engagement with a business, in terms of its nature, length, and extent can be used to inform the design of the interaction, in for example customer service contexts. Knowledge of address may offer insights into whether the customer is likely to be able to return goods easily. Any record of previous complaints can be used to prioritise complaint resolution for this customer. Advice on the product, as for example, a new television or computer, can be tailored on the basis of any records on previous experience of the customer with the product. (Rowley, 2005)

**Marketing communication and promotions:** Personal contact details allow the organisation to locate and communicate with the customer, possibly through multiple channels, extending to work addresses, mobile phones and the Internet. Transaction data provide indications of the kinds of products that customers normally buy, allowing a supermarket, for example, to target information on promotions and vouchers to encourage customers to try alternative products. For instance, a person who frequently purchased slimming products might be encouraged to try a new range of low calorie soup, whilst there is little point in promoting baby products to a family which does not include anyone under the age 18. (Rowley, 2005)
3. Conceptual framework

A conceptual framework focuses on the main dimensions to be studied, the factors of variables, and the presumed relationship between them or, in other words, something that explains, either graphically or in narrative form, the main things to be studied (Miles & Huberman, 1994). Based on the presented theories in the literature review, the concepts that are perceived as most significant for this research will be chosen, in order to turn the research questions posed into something that data can be collected on. All selected concepts have been chosen on the basis of their potential strengths as topics for data collection.

3.1 Customer data acquisition

The first research question will focus on how companies acquire the relevant customer data to create customer knowledge. Regarding the data acquisition process, CKM theory supports the interaction with the customer. This means that the data required to generate customer knowledge should also be collected through the process of interaction with the customer. This way companies emancipate their customers from passive recipients of products and services to key participants in the knowledge creation process. However, this implication does not exclude data collection methods where there is no active interaction with the customer.

Taking the above into consideration, we examined the data acquisition methods in the e-business environment that we found in literature. Based on those literatures a conceptualization has been made according to the purpose of our study. More specific, we have concentrated on the study of Lee et al. (2006) and the data collection paths the author provides. In order to further support the explanation of Lee et al.’s (2006) acquisition avenues, we have also taken into account theories from several other authors provided below. We believe that the following variables to be tested will provide us with insights on the ways through which the examined companies acquire the right data in the e-business environment, as well as, with the degree of interaction with the customer during that process.

Customer Data acquisition methods:

- Web based survey (Lee et al., 2006; Rowley, 2002; Su et al., 2006)
- Online community (Lee et al., 2006; Rowley, 2002; Preece & Diane, 2003)
- Transactions (Lee et al., 2006; Rowley, 2002; Harris, 1999)
- Server log file (Lee et al., 2006; Rowley, 2002; Eirinaki & Vazirgiannis, 2003)
- Cookies (Lee et al., 2006; Rowley, 2002; Eirinaki & Vazirgiannis, 2003)

3.2 Processing of Customer data to generate knowledge

The second research question aims to identify how companies process the collected customer data to generate customer knowledge. CKM is discussing the importance of an effective customer data processing for the successful implementation of the concept. As it is being
discussed in the literature review, customer data processing requires a well established knowledge management infrastructure, which in turn generates customer knowledge and distributes it to several functional departments within the organization. Moreover, the knowledge culture of the organization has a decisive role in the successful implementation of such operations. Thus, in order to answer this research question we examined the key knowledge management procedures.

Based on the literature’s views regarding the processing of customer data, a conceptualization was made. Regarding this research question we particularly concentrate on the basis of Bose & Sugumaran’s (2003) study which provides a sequence of data processing and knowledge management steps. We believe that the evaluation of these steps will provide us with insights on which procedure do the examined companies follow and the degree of their knowledge culture.

**Processing of Customer data:**
- Knowledge identification and generation through customer database (Bose & Sugumaran, 2003)
- Knowledge codification and storage (Bose & Sugumaran, 2003)
- Knowledge distribution (Bose & Sugumaran, 2003)
- Knowledge utilization and feedback (Bose & Sugumaran, 2003)

**3.3 Deployment of Customer knowledge**

Finally, our last research question refers to the deployment of customer knowledge which is the aim of the CKM concept. As it has been discussed in the literature review, the terms information and knowledge are used interchangeably in some theories. For the purpose of this study and in order to avoid confusion, we are going to use the term customer knowledge in order to define the outcomes of customer data and information processing.

According to CKM theories, the use of customer knowledge should lead to the co-creation of the product with the customers and that the outcome of such collaboration should create value for both parties. In order to identify this two way flow of value we examined the types of knowledge usage that we found in the literature, and observed whether the examined companies are actually co-creating and improving their products with the contribution of their customers. Thus, based on the literature regarding the deployment of customer knowledge, focus has been given on the basis of Rowley (2005) study. This theory provides five specific ways through which companies deploy customer knowledge. In order to further support the explanation of Rowley’s (2005) ways of customer knowledge deployment, we have also taken into account theories from other authors provided below.

**Deployment of Customer knowledge:**
- Customer portfolio (Rowley, 2005)
3.4 Emerged frame of reference

Based on the relevant selected literature, a frame of reference has emerged. This emerged frame of reference (Figure 3.1) will provide a guideline for the data collection process and it has been developed in order to reveal how research questions are related to each other. It, also, defines the way data will be collected and provides a theoretical frame of reference to achieve the purpose of the study.

Customer Knowledge Management (CKM)

Figure 3.1: Emerged Frame of reference

The above figure 3.1 shows that CKM is a continuous process which consists of several steps. The first step is the data acquisition procedure, where the customer data is collected from different communication avenues and contact points with the customers. The collected data is being processed in order to transform them into useful information and knowledge for the organization. Finally, this customer knowledge is being deployed in several ways in order to generate value for the organization and its customers. These three steps of the CKM process are repeated (as the link of the third and first step shows in figure 3:1), aiming to
continuously enhance and update the quality and quantity of the organization’s customer knowledge and to maximize the advantages that this knowledge provides.
4. Methodology

The purpose of this chapter is to provide a brief introduction to the research approach and methods. The chosen research approach and methods for achieving the research objectives are discussed, as well the steps we followed to conduct this study. Finally, we present how we are considering the validity and reliability issues for the entire thesis.

4.1 Research Process

Research can be defined as any organized inquiry carried out to provide information for solving problems. Business research is a systematic inquiry whose objective is to provide information to solve managerial problems or management dilemma: the problem or opportunity that requires a management decision. (Cooper & Schindler, 2003) Generally, the research process requires a sequence of steps which are being presented in the Figure 4.1. The validity and reliability of every scientific research is built gradually and accumulates through the intermediate steps followed.

4.1.1 Purpose of the Research

The purposes of social research may be organized into three groups based on what the researcher is trying to accomplish: explore a new topic, describe a social phenomenon, or explain why something occurs. Studies may have multiple purposes (e.g., both to explore and to describe), but one is usually dominant (See table 4.1). (Neuman, 2003)

<table>
<thead>
<tr>
<th>Exploratory</th>
<th>Descriptive</th>
<th>Explanatory</th>
</tr>
</thead>
</table>
| - Become familiar with the basic facts, setting, and concerns.  
- Create a general mental picture of conditions.  
- Formulate and focus questions for future research.  
- Generate new ideas, conjectures, or hypotheses. | - Provide a detailed, highly accurate picture.  
- Locate new data that contradict past data  
- Create a set of categories or classify types.  
- Clarify a sequence of steps or stages.  
- Document a causal process. | - Test a theory’s predictions or principle.  
- Elaborate and enrich a theory’s explanation.  
- Extend a theory to new issues or topics.  
- Support or refute an explanation or prediction.  
- Link issues or topics with a |
Methodology

- Determine the feasibility of conducting research.
- Develop techniques for measuring and locating future data.
- Report on the background or context of a situation.
- Determine which of several explanations is best.

Source: Neuman, 2003, p.29

As the research purpose indicates, this study attempts to describe a social phenomenon for which a high developed idea has been presented. It provides a background of a situation and also a relatively detailed accurate picture. As we are dealing with a well defined subject and we conduct a research to describe it as accurately as possible, we are primarily descriptive in this study. Moreover, we focus on "how" research questions, which according to Neuman (2003) is the focus of a descriptive study to describe how actually things are.

Descriptive and exploratory researches have many similarities, as they blur together in practice. (Neuman, 2003) Since the purpose of our study is to provide a better understanding of a relatively new topic in order to get insight about it, it is also placed as exploratory. The fact that our research questions are formulated in a way that further research can be conducted also indicates an exploratory approach in our study. In general, our study is primarily descriptive and partially exploratory.

4.1.2 Research Approach

A qualitative approach has been chosen for the purpose of this study. It is one in which the inquirer often makes knowledge claims based primarily on constructivist perspectives (i.e., the multiple meanings of the individual experiences, measuring socially and historically constructed, with an intent of developing a theory or pattern) or advocacy particular perspectives (i.e. political, issue-oriented, collaborative, or change oriented) or both. It also uses strategies of inquiry such as narratives, phenomenologies, ethnographies, grounded theory studies, or case studies. The researcher often collects open-ended, emerging data with the primary intent of developing themes from the data. (Creswell, 2003)

Different approaches can be taken such as deductive or inductive. Deductive research starts with existing theories and concepts and formulates hypotheses that are subsequently tested; its vantage point is received theory (Gummesson, 2000). The researcher begins with an abstract, logical relationship among concepts and then move toward concrete empirical evidence (Neuman, 2003).

An inductive research starts with real-world data, and categories, concepts, patterns, models, and eventually, theories emerge from this input (Gummesson, 2000). The researcher begins with detailed observations of a subject and moves toward more abstract generalizations and identifies preliminary relationships (Neuman, 2003). After the initial stages, all types of research become iteration between the deductive and the inductive. This is sometimes referred to as adductive research. (Gummesson, 2000)
Since our research purpose and research questions were developed on existing theories and concepts, our research is deductive. As well, we are moving from the general theories towards a more specific observation of the topic, which is a characteristic of a deductive research approach. That means our results cannot be generalized since they present the observations of specific organizations and in a specific period of time.

4.1.3 Research Strategy

A research strategy may be thought of as providing the overall direction of the research including the process by which the research is conducted (Remenyi & Williams, 1998). Yin (2003) describes five different research strategies to apply when collecting and analyzing empirical evidence: experiments, surveys, archival analysis, histories, and case studies. Yin (2003) also provides three conditions to apply in order to decide upon which strategy to use:

- The type of research question posed.
- The extent of control an investigator has over actual behavioral events.
- The degree of focus on contemporary, as opposed to historical, events.

The first and most important condition for differentiating among the various research strategies is to identify the type of research question being asked. ‘‘How’’ and ‘‘why’’ questions are likely to lead to the use of case studies, histories, and experiments as the preferred research strategies. (Yin, 2003)

Taking the above into consideration, for this study possible research strategies are hence experiment, history, or a case study. We have chosen the case study strategy since it may deal with the same kinds of evidence as the history, but adds the possibility of making interviews and direct observations. As is being discussed above, case studies are preferred strategy when ‘‘how’’ and ‘‘why’’ questions are being posed, but also when the investigator has little control over events, and when the focus is on a contemporary phenomenon within real-life context. (Yin, 2003)

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. As well, it allows an investigation to retain the holistic and meaningful characteristics of real-life events. (Yin, 2003) The researcher examines in depth many features of a few cases over a duration of time. Most case studies involve qualitative data and almost all qualitative research seeks to construct representations based on in depth, detailed knowledge of cases (Neuman, 2003). Since our approach is qualitative, the case study seems to be the most appropriate for this study.

Furthermore, a case study can involve a single and a multiple-case study. The single case study makes an in-depth investigation regarding only one entity but in multiple-case study two or more entities are being investigated which gives the opportunity of comparisons. (Yin, 2003) The multiple-case has been chosen for this study due to the fact that it was giving us the opportunity to compare the cases. Therefore, it enables us to see the differences and similarities among the cases and draw useful conclusions.
4.1.4 Data Collection

Data are the empirical evidence or information that one gathers carefully according to rules or procedures. Every researcher collects data using one or more techniques. In our research we collect qualitative data, which actually means collecting data in the form of words, pictures. Some techniques are more effective when addressing specific kinds of questions or topics. It takes skill, practice, and creativity to match a research question to an appropriate data collection technique. (Neuman, 2003)

Yin (2003) discusses six main sources of evidence to apply in a case study. These sources of evidence are documentation, archival records, interviews, direct observations, participant-observations, and physical artifacts. In this study, the two sources of evidence that are considered valuable are documentation and interviews and will be described. An overview of documentation and interviews sources and their comparative strengths and weaknesses may be found in Table 4.2.

According to Yin (2003) information found in documents is likely to be relevant for nearly every case study topic, especially for confirming and supplementing evidence from other sources. Documents are important in the data collection stage in a case study, due to their overall value. However, care must be taken in the interpretation of documents, since they are often prepared for another purpose and audience than that of the case study (Yin, 2003).

Table 4.2: The two sources of evidence and their comparative strengths and weaknesses.

<table>
<thead>
<tr>
<th>Source of evidence</th>
<th>Strengths</th>
<th>Weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documentation</td>
<td>• Stable – can be reviewed repeatedly</td>
<td>• Biased selectivity, if collection is incomplete</td>
</tr>
<tr>
<td></td>
<td>• Unobtrusive – not created as a result of the case study</td>
<td>• Reporting bias – reflects (unknown) bias of author</td>
</tr>
<tr>
<td></td>
<td>• Exact – contains exact names, references, and details of an event</td>
<td>• Access – may be deliberately blocked</td>
</tr>
<tr>
<td></td>
<td>• Broad coverage – long span of time, many events, and many settings</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• Retrievability – may be Low</td>
<td></td>
</tr>
<tr>
<td>Interviews</td>
<td>• Targeted – focus directly on case study topic</td>
<td>• Bias due to poorly constructed questions</td>
</tr>
<tr>
<td></td>
<td>• Insightful – provide perceived causal inference</td>
<td>• Response bias</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Inaccuracies due to poor recall</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Reflexivity – interviews give what interviewer wants to hear</td>
</tr>
</tbody>
</table>

Adapted from Yin, 2003, p. 86

On the other hand, Yin (2003) defines the interview as a two-way conversation that gives the interviewer the opportunity to participate actively in the interview and states that interviews are one of the most important sources of case study evidence. The interview is structured and based on predetermined questions. There are three types of interviews: open-ended, focused, and structured. The most commonly used interview method is open-ended, where the
researcher asks the respondent unstructured questions, thus allowing the interview to be more of a discussion. The respondents can be asked for facts as well as their own personal opinion.

When a focused interview takes place, the respondent is interviewed during a brief period of time—an hour, for example. The purpose with a focused interview could be to confirm certain facts that are already known to the researcher. The third form of interview, survey, is more of a combination of an interview and a survey and entails more structured questions along the lines of a formal survey.

A common question about doing interviews is whether to record them. Using recording devices is in part a matter of personal preference. Audiotapes certainly provide a more accurate rendition of any interview than any other method. Using a recording device in interviews helps the researcher to minimize the possibility of losing information and also gives him/her the capability to recheck the collected data. (Yin, 2003) Most qualitative interviews occur on a one-to-one, face-to-face basis. However, one-to-one interviews may also be conducted by telephone in particular circumstances. (Saunders et al., 2003)

For the purpose of our research we conducted interviews and selected data from the companies’ annual reports and official web sites. For both case studies the interviews were face-to-face and open-ended. We used a recording device in order to minimize the risk of losing data and for the ability to recheck and ensure the interpretation of the collected data.

4.1.5 Sample Selection

According to Saunders et al. (2003) sampling techniques provide a range of methods that enable you to reduce the amount of data you need to collect by considering only data from a subgroup rather than all possible cases or elements. Qualitative researchers rarely draw a representative sample from a huge number of cases to intensely study the sampled cases, which is the goal in quantitative research (Neuman, 2003). For qualitative researchers, it is their relevance to the research topic rather than their representative which determines the way in which the people to be studied are selected (Neuman, 2003). Most qualitative researchers tend to use nonprobability or nonrandom samples. This means that they rarely determine the sample size in advance and have limited knowledge about larger group or population from which the sample is taken (Neuman, 2003).

Non-probability and judgmental sampling is more frequently used for case study research. Judgmental sampling enables you to use your judgment to select cases that will best enable you to answer your research question(s) and to meet your objectives. This form of sample is often used when working with very small samples such as in case study research and when you wish to select cases that are particularly informative. (Saunders et al., 2003)

In this study we are using a non-probability and judgmental sampling to collect the relevant data. We selected two of the leading financial institutions of Sweden in order to observe the customer knowledge management models or methods they use and answer our research questions. We judged those companies as the benchmark organizations of the Swedish banking industry and the most probable to apply such concepts. Thus, we consider this sample as the most appropriate for our study.
4.1.6 Data Analysis

Qualitative researchers reflect on ideas before data collection, but they develop many, if not most of their concepts during data collection. The qualitative researcher reexamines and reflects on the data and concepts simultaneously and interactively. Researchers start gathering data and creating ways to measure based on what they encounter. As they gather data, they reflect on the process and develop new ideas. The ideas give them direction and suggest new ways to measure. In turn, new ways to measure determine how researcher will continue to collect data. They bridge ideas and data through this type of continuing, interactive process. (Neuman, 2003)

According to Miles & Huberman (1994), the analysis of qualitative data consists of three activities: data reduction, data display, and conclusion drawing.

- Data reduction refers to the process of selecting, focusing, simplifying, abstracting, and transforming the data that appear in written-up field notes or transcriptions. Data reduction is not something separate from analysis. It is part of analysis. Qualitative data can be reduced and transformed in many ways: through selection, through summary or paraphrase, through being subsumed in a larger pattern, and so on. (Miles & Huberman, 1994)

- Display, generically, is an organized and compressed assembly of information that permits conclusion drawing and action. Looking at displays helps us to understand what is happening and to do something—either analyze further or take action—based on that understanding. Better displays are a major avenue to valid qualitative analysis. As with data reduction, the creation and use of displays is not separate from analysis, it is a part of analysis. (Miles & Huberman, 1994)

- Conclusion drawing and verification is the third stream of analysis activity. From the start of data collection, the qualitative analyst is beginning to decide what things mean and the competent researcher holds these conclusions lightly, maintaining openness and skepticism. Final conclusions may not appear until data collection is over. Conclusions are also verified as the analyst proceeds. The meaning emerging from data have to be tested for their plausibility, their sturdiness, their conformability, that is their validity. (Miles & Huberman, 1994)

The above-mentioned three steps were followed for data analysis. First of all, we reduced the collected data according to the variables to be tested. Specifically, we simplified and focused on the relevant data that provided us with the appropriate answers. Thereafter, this selection of data were compared with the relevant theories provided in our frame of reference. Furthermore, the data from the cases were displayed in tables and compared with the literature and each other (cross-case analysis), in order to help the reader and our analysis. Finally, the holistic comparison of the CKM procedures from the two case studies and the literature, provided us with insights and the ability to draw conclusions in the last chapter of this study.
4.2 Reliability and Validity

Reliability means dependability or consistency. It suggests that same thing is repeated or recurs under the identical or very similar conditions. Qualitative researchers use a variety of techniques (e.g., interviews, participation, document studies, etc.) to record their observations consistently. They want to be consistent in how, over time, they make observations similar to the idea of stability reliability. (Neuman, 2003)

On the other hand, validity is concerned with whether or not the item actually elicits the intended information. Validity suggests fruitfulness and refers to the match between a construct, or the way a researcher conceptualizes the idea in a conceptual definition, and the data. It refers to how well an idea about reality “fits” in with actual reality. Actually, qualitative researchers are more interested in giving a fair, honest, and balanced account of social life from the viewpoint of someone who lives it everyday. (Neuman, 2003)

As Neuman (2003) states reliability is necessary for validity and is easier to achieve than validity. Although reliability is necessary in order to have a valid measure of a concept, it does not guarantee that a measure will be valid. It is not a sufficient condition for validity. A measure can produce the same result over and over (reliability), but what it measures may not match the definition of the construct. Figure 4.2 illustrates the relationship between the concepts by using the analogy of a target. The bull’s-eye represents a fit between a measure and the definition of the contract. (Neuman, 2003)

Yin (2003) discusses four different tests of judging the quality of research design: 1) Construct validity: establishing correct operational measures for the concepts being studied. 2) Internal validity: establishing a causal relationship, whereby certain conditions are shown to lead to other conditions, as distinguished from spurious relationships. 3) External Validity: establishing the domain to which a study’s findings can be generalized. 4) Reliability: demonstrating that the operations of a study-such as the data collection procedures can be repeated, with the same results. (Yin, 2003)

According to Yin (2003), every case study project should strive to develop a formal, presentable database, so that, in principle other investigators can review the evidence directly
and not be limited to the written reports. In this manner, a case study database markedly increases the reliability of the entire case study. For case studies, notes are likely to be the most common component of a database. The notes may be a result of an investigator’s interviews, observations, or document analysis. (Yin, 2003)

In terms of reliability, in this study the criteria for the sample selection, the data collection method and the data analysis process were consistent and similar for both cases. Moreover, the data is displayed in a presentable manner and as it was acquired from the sources, in order to provide the ability for other investigator to directly review the evidence. Accordingly, the steps we followed to conduct this research are provided in detail in this chapter.

In order to enhance the validity of our study, we utilized multiple sources of theories before we conceptualize the idea of our research and form the frame of reference. In addition the variables to be tested were, also, supported from many authors perspective in order to provide us with a more holistic and complete definition. Finally, aiming to give a fair, honest, and balanced account of the CKM concepts the organizations were applying, we attempted to interview managers that were directly involved in the CKM procedures. These interviewees provided us with valid and accurate data of the CKM concepts, from the viewpoint of someone who lives it everyday.

Finally, in general, the followings steps were taken to ensure the reliability and validity of this study:

- Supervisor read and checked the interview guide,
- The respondents were well informed and in a position to have access to company data,
- Interview guidelines were made based on frame of reference to ensure the validity of the study,
- Data were collected through in-depth interviews with open-ended questions and the interviews were recorded on tape,
- Interviews were conducted within two weeks and within this time period no major event has been changed with the relevant topic,
- The same interview guidelines were used for both cases to increase the reliability.
5. Empirical Data Presentation

This chapter will present empirical data from two Bank’s perspective. The data presentation chapter will be followed by individual interviews given by the relevant department personnel. In order to find out the acquiring methods of customer data and processing of customer data to generate customer knowledge, two different cases will be presented. The background information relating these two banks will be provided and thereafter the collected data will be presented as part of the research questions of this study.

5.1 Case: SEB

Background

SEB is a Swedish financial group for companies, institutions and private individual customers. Its activities comprise mainly banking services, but also SEB carries out significant insurance operations. The organization serves customers in the Nordic countries (Sweden, Norway, Denmark, Finland), Germany, the Baltic countries, Poland and Ukraine. SEB has approximately 20,000 employees and almost half of them are located outside Sweden. In 2006 the bank's customer base consisted of five million private and 400,000 corporate customers.

The organization business concept is to provide financial services and to handle financial risks and transactions in such a way that customers are satisfied, shareholders get a competitive return and that SEB is considered as an organization that contributes to the welfare of the society. The organization's vision is to be the leading North-European bank in terms of customer satisfaction and financial performance. According to the organization's leadership, motivated employees and strong co-operation within the SEB's group of companies (One SEB) are prerequisites for accomplishing the organization's vision. The strategy of the company is addressed in the same lines. In the company's annual report it is specifically mentioned that 'SEB's strategy is attempting to strengthen its position in the existing markets by building upon the group's traditional foundations as financial partner to companies, institutions and financially active, demanding private individuals'.

Data for this case was collected through a personal interview with Mr Tomas Lejon, SEB's Chief of Private Banking in Norbotten. The interview was conducted face to face on the 23rd of October 2006 and the duration was 65 minutes. We conducted the interview based on the interview guide, which we previously developed from the frame of reference of this thesis. Below we present the relevant data we acquired from the discussion with our respondent, as well as SEB’s annual report for the year 2005 and the company’s main website.

Customer data acquisition at SEB

SEB’s strategy is to collect as much useful information as possible about customers. As Mr Tomas Lejon, Chief of Private Banking in Norrbotten, explained 'We know a lot about our customers and we want to take advantage of our knowledge so that we can sell our products
Empirical Data Presentation

to them. In that way they become more satisfied with our bank and the bank’s products. We know that customer satisfaction and product penetration are linked together. So if we find out what individual customers are aiming for (and probably they don’t know about it) we can inform them about the relevant products from our own experience and sell them these products. In this way we keep them loyal and we get more appreciation from them. Generally, our strategy is to keep customers satisfied and if possible to delight them. And that because we believe that the delighted customers attract new customers. Our satisfied customers are the best ambassadors for our organization as they are thought to be more objective from our sales force. We consider word of mouth as the most cost effective way to enlarge our customer base. Furthermore, the brand has a decisive role on how it is related to the feelings of our actual customers, as well as, our potential ones.

The Marketing Division of SEB is responsible for collecting customer data but they always look for the data which is relevant to bank's products and services. According to Mr Lejon ‘Data collection is not the responsibility of the front shop (branch), but is a process that the Marketing department is working for. What we do is to take advantage of the information about the customers that is stored in our databases. We are trying to address the right products to different kinds of customers.’

The respondent added that surveys are the most frequently used methods of collecting customer data. Specifically Mr Lejon claimed that ‘We collect those data by conducting surveys and we always try to listen to the customers we have to draw general conclusions. Specifically, we conduct interviews, we send questionnaires (online or by mail) and we, also, know by heart. By heart we mean that if, for example, a customer has small children usually, then needs a car and sometimes needs to finance the car. We always try to provide customers with products specific to their needs and according to their situation. The strategy is to collect as much data about the customers and then from our experience sell more products to each individual and get as a feedback more customer satisfaction, loyalty and revenues for the bank.’

SEB’s customers can contact the bank via branch offices, the Internet and the telephone on a 24-hour basis. In total, there are around 200 million customer meetings in a year throughout the SEB group, of which one-third are conducted via Internet. Mr Lejon states that ‘In our website there is a possibility for visitors to write down their views regarding our bank and our products, 24 hours a day and 7 days a week. We have a board of trusted employees that are dealing with these matters and try to observe if there are any complaints from dissatisfied customers. Then as branch managers we give inputs to those employees, so that they can provide with a good answer our dissatisfied customers.’ Though the respondents admits that the company's website does not host any kind of online communities such as discussion forums or bulletin boards, but these contacts are conducted through emails.

Apart from the above, the respondent also mentioned that 'Sweden is a country where much information about the individual is available to everyone by law. That information apart from the demographic data refers also to the annual incomes, tax payments, properties etc. By selecting this piece of information about individuals and combine them with our data (previous transactions, online data such as visits to our web site, employees' knowledge from
face to face interactions, emails or call centre contacts) we are trying to understand our customers. For example when we have a customer that we know that he/she has not been in contact with the bank by any means (visit the branch, visit the website by logging in or not, had a transaction online or offline, call centre etc) for a long time then we try to understand his behaviour. If we observe in the available demographic data that he/she has moved to another city during this silent period, it seems that we have understood the client’s behaviour. If we see that this client had a very intensive transaction history with our bank before moving to another city (so was a good client) then we contact this person by phone or other means in order to maintain him/her. Otherwise it would become possible for some of our competitors will contact him and pick him/her up.

Another way by which SEB is trying to select information for new product development purposes, is to acquire that information directly from key customers. These are key customers from specific focus groups such as key customers from the group of small and medium enterprises. According to Mr Lejon ‘What the bank actually does is to invite those individuals (maybe 10 or 20 in number) for in depth interviews. The information from these interviews are analysed and experts are trying to draw conclusions regarding the possibility to develop a new product and improve the existing ones. Those individuals are getting paid for the time they spend for their interviews unless they do it willingly. We approach those customers like there are partners of our organization and we ask them if they want to contribute to this bank to become a better organization. But we definitely do not bribe them. This procedure is not on a local level but we gather people from all parts of the country. The process of selecting this sample of key customers is not according to our suggestions as branches, as we are not allowed to influence this process. A third party such as a research institute is responsible to contact these individuals and ask them to participate in the survey. And that because these institutes resemble high levels of trust and it also helps the bank to get a more objective picture of the market.’

SEB attempts to gather information about the market in many ways. These attempts aim to identify new demands. For example, recently SEB introduced a training program (SEB licence) in order to help all employees to act as professional ambassadors towards customers. This training aims to increase knowledge both about the organization’s products as well the whole company. The leadership's opinion is that 'SEB licence is a means to unite all our employees, but also to identify new needs for products'.

An extensive part of the discussion regards the transaction data issue. Specifically the respondent stresses that 'The use of transaction data is a sensitive issue. We are not allowed to use detailed information about the customers for promotion purposes. For example, we are not allowed to see how much alcohol a customer buys or where he/she buys the food. Apart from the fact that such details are not useful for us as an organization, it is also something personal and the client must be protected. These data are not making sense even in an aggregated level, as it is not efficient for us to generalize and speculate from single transactions. For instance, if a group of customers buy their food at that expensive supermarket which is located in a fashionable area, does not ensure us that this group of people can afford to take a big loan or ensure us that these people are good clients. We are not allowed to do that and it is not useful for us.'
Even on the corporate level we do not use this kind of details. For example, we can propose to a company some cost efficient ways to transact with its clients. But we cannot look how many individual clients we have that transact with this particular company and the efficiency of the way they used to transact in the past. We cannot use this information to persuade this company to accept our offer. It is a matter of privacy and we are very depended on our integrity as an organization. We must not give the feeling to our customers that we are spying their activities and 'playing games with their private life’. If such a thing happened it is almost sure that we will lose those customers.

What we do is to use this transaction and all the data in a more general base and not very specific. When a client is really interested in arts we are not suggesting any funds related to arts. He/she will feel that we came so close his/her personal life and will terminate our relationship. What we do to be clearer in our relationships with the customers is to give them access to their profiles. If a customer wishes to see the data we hold in our database regarding him/her as an individual, our company has to give access. Thus, we are not including confidential information in those databases that will dissatisfy our customers.

Above all, peoples’ lives are not so different. That means by observing the individual and trying to understand his/her specific needs is really difficult and also not effective. We already have a lot to consider and examine in general basis and this do not give us the possibility to work on individual basis. We can try to segment the customer base, observe the segment’s needs pattern and try to forecast their future needs. But, this is impossible to do in an individual basis. There are so many similarities among customer needs that is enough effective to try and address the general needs. There is no need to go into specific details about individuals.'

SEB's official website informs the visitors that most web browsers have a standard setting that accepts cookies. You can however set your web browser so that it notifies you when it receives a cookie and you can then yourself decide whether to accept it or not. You should however note that it is not possible to reject cookies relating to certain web pages where authorization is required. If you have chosen not to accept cookies, you can in most cases not open such pages.

**Customer data processing at SEB**

Regarding the processing of customer data Tomas Lejon explained that 'We process our data in a way that provide us with information which is helpful when we serve the customer. Moreover, we try to capture and understand a typical behaviour for a group of customers. For example, we are trying to understand a new entrepreneur that starts up a business, address a typical behaviour of that group, and decide which kind of products we can serve those customers. Let’s say that we observe that these companies usually face liquidity problems and the profits are gradually increasing during the first year. This is a gap which we can fill by offering those clients the appropriate products. What we might offer them is a pension plan that is really low in fees at the beginning and is gradually increasing within the following years. And when the customer’s enterprise becomes prosperous due to these
products, they will remember that we ‘listen to their music’. In general we try to have an understanding of what sort of businesses our clients are involved in. We try to understand their needs through observing their typical behaviour and of course fulfil these needs. This procedure also helps us to customize the products for the groups of customers and the individuals. But we need also to initiate ourselves and we are supposed to have the feeling in order to deploy that information. An employee should know that he/she cannot offer a pension plan to a man of 80 years old.’

According to the respondent the storage of information is a challenging issue, as he claims that ‘As all the other banks, we have access to huge amounts of data. It is really difficult to decide which data are relevant and which are not. What we try to do is to decide what we aiming for and then we try to distinguish and focus on the related data. In general, this is a really difficult process that we are trying to improve. It is not useful to register everything regarding the individual customers. What we do is to store the general information about the customer which combined with the experience of every individual employee can contribute to the better service and more satisfaction of the customer. On management level we divide what we know on an individual customer basis and on aggregated basis.’

SEB’s systems for storing and distributing information and knowledge were discussed as a part of the branch’s operation. Mr Lejon mentioned that ‘Every employee accesses our databases through a CRM tool where he/she can reach the profile regarding every individual customer. There is information about the customer, as well as some issues that an employee who interacts with the particular customer must address. Such issues could be the request for more information about the customer or the request for an offer to the customer. The customer’s profile mainly consists of demographic data, as well as, information about his/her previous transactions and preferences. Given these facts we know if the customer is more likely to buy our products. In general, our IT systems are the means to deliver information across the organization and exchange our know-how.’

In general SEB seems to be going through changes in order to improve the dissemination and utilization of knowledge. As the management claims in the annual report, one important step in this direction was the active work that was carried out in order to increase co-ordination of the different parts of the bank for the purpose of developing the bank into a more customer-oriented and value adding organization. The reason for taken such initiative was that institutional customers usually look for broad and comprehensive solutions, which involve numerous specialist services that are provided by different parts of the bank. Thus, the closer the co-operation is between these different units and the customer, the better are the opportunities for meeting these customer's expectations. This co-operation increased the cross-utilization of each respective area's specialist competence within the bank and was the reason for the successful relations with the bank's institutional clients.

Furthermore, the respondent provides information about the accessibility that employees have in these databases. He claims that ‘Employees have access to all the information that is actually needed to do his/her job and according to the position he/she has inside the organization. Above all, the bank’s employees are not allowed to use more information than
necessary and, also, misuse this information or use them for their own interest. They can get fired if something like this happened."

Feedback and improvement of the stored knowledge is considered from SEB. Specifically, as Mr Lejon responded 'Of course the bank considers every employee’s feedback regarding the quality and usefulness of the information stored in our databases. We also take into consideration their knowledge about our customer. Our CRM systems are not static but are continuously being developed through the information we get from our customers, our own knowledge and the other sources of information we use.'

**Deployment of customer knowledge at SEB**

Regarding the use of customer information and knowledge the respondent mentions that 'we try to understand our customers by observing their needs and wants and accordingly customize the products. And we do that through the consideration of demographic and other data that we have. For example customers between 25-40 years old are generally interested in financing and buying a house. What we do is that we offer mortgage loan to this specific customer group. Another example can be the offering of mutual funds to older people.

*Furthermore, we are taking advantage of customer patterns. We see the pattern of customers’ and then we try to learn from those patterns. For instance, customers who have mortgage loans they usually need to buy house appliances for their home. What we do in such a case is that we offer relevant loans, as well, we try to sell them small cheque account credits. These credits through the bank are a cheaper alternative for the customer, in case he/she had to take the credit for the company that is selling the products. Thus, from this knowledge we have about our customers, we sell more products to them and they take advantage of the cost savings.*

Mr Tomas Lejon specifically points out the use of customer knowledge for product promotion purposes on the corporate level and, also, describes the process. Particularly, he added that 'Furthermore, we use the data we have to promote our products in a more focused way. We are segmenting the customer base that we already have according to the demographic or other types of data and we are trying to promote the products to the relevant groups of customers. For example we have a product named as computer loan and we try to promote it to students, as we know that students are in the need to buy computers and usually they don’t have the cash to purchase it. So what we actually do is to look in our databases which of our clients are students. Their student identity can be acknowledged through their previous transactions with the bank, such as when they are having a student package. So this is how we are trying to target more focused groups of customers.

*Finally, one of the organization's main goals regarding customer knowledge deployment is the new product development. As the respondent mentioned ‘We always learn from our customers and their behaviour. If you sit down and listen to the customers you might get some ideas and you might understand what they want to have now or what they would like to have in the future. If we manage to capture that knowledge then we go to the other lever which is the creation of a new product. Our bank has a new product development rule and*
then we have a new product approval committee. We, as branches and individuals, are giving information and suggestions that according to our judgement might be of interest to this department. The job of this department is to select that information and try to translate it into a new product. This can be done by observing the reappearance and repetition of the same suggestions, behaviours or interests from the customers and try to develop a new product accordingly.

5.2 Case: Swedbank

Background

Swedbank is a leading Swedish banking group operating in Sweden, Estonia, Latvia and Lithuania. In those markets the year 2006 its customer base consisted of 8.7 million private customers and nearly 431 thousand business customers. In the country of Sweden the number of branches is up to 476 and in the other Baltic countries the 287 branches. The organization’s employees reach the number of 16 thousand people inside and outside the country of Sweden.

According to the Bank’s management, the mission of the company is to understand and react to its customers’ needs in order to offer them the best financial solutions and thereby help them improve their financial state. This way, the leadership believes that it can continuously increase the company’s value and serve as a positive force in the society. The vision of the organization is to become the leading financial institution in the Nordic and Baltic region. That can be achieved through the performance-oriented culture, the willingness to change and the the bank’s employees strong commitment. Generally, those are believed to be the foundations of the Group’s strong financial results and international recognition.

A face to face interview with Robert Landström, Information Resource Manager and Leif Johansson, CIO of Information Strategy and Architecture, was conducted in Luleå branch office of Swedbank for collecting the relevant data for our thesis. The interview was conducted on the 9th of November 2006 and was 60 minutes in length. We conducted the interview based on the interview guide, which we previously developed from the frame of reference of this thesis. Below we present the relevant data we acquired from the interview with our respondents, the company’s annual report (2005) and Swedbank’s website.

Customer data acquisition at Swedbank

Swedbank’s main focus lies on its customers' needs according to the management of the company. Specifically, providing great service and maintain a high level of activity that which focuses on customer needs, is believed to be the way for greater value creation and customer satisfaction. Towards this direction the extensive improvement program for the bank’s operations was addressed. Part of the program was the bank’s employees training which was aiming to adopt a more knowledge intensive and structured way of working with the customers.
Mr Johansson and Mr Landström are the employees responsible to deliver the knowledge intensive culture at the bank’s branches, by accordingly organizing the IT infrastructure. The starting point of this concept is the data acquisition process. As they respond ‘The bank’s strategy of collecting data on customers is to listen to our customers, understand their needs and fulfil those needs in order to satisfy them. Regarding the two of us, our job is to determine, distinguish, collect and process the relevant data from the bank’s warehouse in order to transform it into useful information for the branch employees. We aim to provide them with the right information for selling the right products, to the right customers and at the right time.

Swedbank is accessible for its customers through Sweden’s and the Baltic countries’ branches, as well as the Internet and telephone banking that offer services round the clock. Regarding the online meeting points with the customer, as potential sources of customer data, the respondents claimed that ‘The customer can communicate with the bank 24/7 through our website. The communication regarding the online service support and trouble solving can take place through the telephone or with one to one online conversations (emails or chat rooms). There is no forum for online discussions hosted in our website or any other online communities.’

Furthermore, in Swedbank’s website there is a statement regarding cookies and the terms of use. If the visitor rejects cookies from his/her web browser it is not possible to have full accessibility in the bank’s website. As Mr Johansson claims ‘Cookies’ and server log file’s data are more collected for security reasons and not yet for customer knowledge generation and improvement. We are now discussing the effective ways that we can use those online customer data for understanding our customers. For example, we decided to start working on a concept that will determine which online data can provide the bank with the right information in order to understand each customer’s behaviour on the Internet. The server log file will give us the clues regarding the links the visitor of our website is interested in and the time he/she spends visiting the particular links. Generally, the reason for the delay in utilising online data is that we have the ability to acquire enormous amount of data, which makes it difficult to distinguish the relevant ones. It is not an easy concept and it is difficult to measure also the return on investment in order to convince the stakeholders to invest on such a concept. Accordingly, the annual report states that special focus was placed from Swedbank during the period 2005-2006 on maintaining a high rate of change in the bank’s IT infrastructure. Part of that change was the launch of a new Internet banking facility with improved functions and a more efficient technical platform.

Regarding the transaction data, the management claims that the bank’s goal to handle and exploit higher transaction volumes over the Internet and various cards was a success. Despite the significantly increased transactions IT expenses maintained the same, thanks to the technical upgrades of the system. Mr Johansson and Mr Landström added that ‘Transaction data is the most common data we use to understand the past of our customers and their behaviours. Our customer base is around 8.7 million individuals and, consequently, we have a lot of work to do with the available transaction data. The online part of the transaction data collected is considerable, as a large proportion of our clients are using the online banking
services.’ The company’s annual report states that Swedbank’s Internet banking customers are up to 3,7 million or 45% of its customer base.

In addition, the respondents claimed that ‘Apart from the transaction data, we gather customer data from what we call ‘customer meetings’. In those meetings we interview our customers and we try to get some useful information about our customers and for us as an organization. Those interviews are free text fields and the information we attempt to acquire is about the status of the customer (e.g. household, family status, savings), his/her thoughts for the future etc. Moreover, from those interviews we try to get some clues about the collaboration of our customers with other banks. The interviews are taking place in the branch and are conducted from our employees. Every customer has personal interaction with a particular employee that is responsible to conduct those interviews. As part of the procedure, the employee can reach the digital document which includes all the predetermined questions he/she has to ask to the customer. However, the customer must allow first the employee to documentate and store the answers he/she will provide. We documentate these data in digital forms in order to store it in our databases and be able to process it. This procedure will determine what is the best way to support and satisfy each customer according to the knowledge we acquire from them and the data we already stored. It might also show us the future needs of the customer.’

Mr Landström and Mr Johansson admitted that Swedbank uses surveys as data acquisition channel. Specifically, they supported that ‘Once a year we are conducting surveys in order to observe and understand the markets we are operating in. There is a third party that is employed to conduct those surveys on behalf of our organization. We outsource those activities because we believe that we can have a more objective point of view for the marketplace. Those surveys also give us clues of what is our position in the market and how consumers place us compared to the other competitors. And that is how we try to understand our presence in the market. However, those surveys do not intent to understand our customers or the potential ones. This is a responsibility of the people inside the organization, that must have their ‘ears on the ground’ to understand our customers, their needs and their future behaviours.’

Apart from the above methods of customer data collection, the respondents added that ‘We also use the demographic data available by law in Sweden. There is an organization which provides us with all the legal data we request, such as demographic data for individuals. We store those information in our warehouses and we combine them with the already available customer data.’

**Customer data processing at Swedbank**

Customer data is being processed with respect to the Swedish law according to Mr Landström and Mr Johansson. As they stress ‘Regarding the processing of those data we follow the regulations of P.U.L., which is the law that resembles the restrictions we have when we process our customer data. Those restrictions refer to the quality of the collected data and the ways the company is allowed to combine and integrate the available customer data.’
Customer information and IT resources are protected in terms of accessibility, accuracy, privacy and traceability according to Swedbank’s management. Only certified programs and tools are used in the bank’s IT environment in order to prevent unauthorised access, unintentional use, disclose, false distribution, theft and destruction or alteration of customer information. In general, monitoring information security has increased from Swedbank the recent years due to the bank’s wide range of online products and services.

Regarding the information exchange and communication, both Swedish and Baltic parts of the Swedbank’s Group have independent intranets. Documentation in those intranets exists in the form of policies, instructions, guidelines and manuals which are continuously updated in accordance to the organization's objectives. This infrastructure provides various channels for all employees to communicate significant information to the relevant recipients. The communication with external parties is taking place under the organizations regulations and policies that provide the bank’s employees with guidelines. As the management claims in the company’s annual report, the purpose of those policies is to ensure that information obligations are met in a correct and thorough way.

Mr Landström and Mr Johansson added that ‘Every employee can reach information and knowledge regarding the customers that they are responsible for. They are not allowed to access information for other particular customers, but only for those that they are serving. In this way the employees are dedicated to some particular customers and can have better view of them, in order to serve them better. We attempt to take advantage of our employees’ knowledge about the individual customer. Whenever the customer visits the bank, the employee enters his/her profile and tries to understand any changes in their status by asking questions. Thus, that process aims to refresh or update the view we have for the particular client. It is a part of one of the oldest concepts our bank has, which we name customer lifetime value. In general we can say that the depth to which every employee has access to our databases is as much as his/her position in the organization requires and in order to be more productive at his/her work.’

While describing the actual processing of customer data on the branch level the respondents explained that ‘As branch employees we process the customer data that we acquire from our own operations. Those data are stored in every customer’s or customer segment’s interface that our system provides. Inside the interfaces are documents that we name digital scorecards, where the employee fills in the required information about individuals. Those scorecards provide us with probability, risk and profitability that the system calculates from the stored data regarding each individual customer. The interface also provides us with the products that the customer is actually using and the products he/she might be interested in. Basically, the interface is divided into two parts, the one that provides statistics and the one that provides other customer information (such as demographics). It is also a way to segment our customer base according to different factors, as for example their profitability and from different aspects.

Regarding the feedback providing procedure Mr Landström and Mr Johansson supported that ‘The organization’s employees are encouraged to provide us with their suggestions
regarding the usefulness of the information stored to the customer’s interface. It is really important for us to know what the employees think about the quality of those information as they are the ones who actually utilizing and taking advantage of this knowledge. Moreover, we request their participation to formulation of the questions to be asked in the customer meetings. It is a process that all the involved employees should participate in order for the concept to bear fruits.’

As part of knowledge recognition and generation, the respondents explained the bank’s process of distinguishing the useful customer data. Particularly, it was mentioned that ‘The bank has access to huge amounts of data if you consider that 40 to 50 thousand transactions per day take place only in our branch. Thus, distinguishing the relevant data needed and also providing the company with more frequent and updated information is a really difficult concept. As employees at in the Information Strategy and Architecture department of the organization, we have to translate the leadership’s requests for information in technical terms first in order to accomplish the task. For example, some times they ask us to provide information which is updated every 30 minutes in order to have more accurate results. In technical terms this is not an easy concept and is also very expensive. Our duty is to translate this request into IT solutions and make it possible and affordable for the organization. As well, we have to distinguish the relevant data that will help the every time concept to succeed. We always have to observe if the IT system’s performance is actually supporting the goals of the organization.’

Swedbank’s customer knowledge generation process is taking place in accordance to predetermined plans. The Marketing Analysis department addresses those plans in order to ensure the uniformity of the procedures across the organization and to serve the company’s mission. As Mr Landström and Mr Johansson described ‘We have strategical plans for the IT usage, operational plans and also technical plans to follow in order to meet the organization’s goals. In particular, the strategic plan lasts 3 to 5 years and gives us the guidelines for the predetermined goals. Those plans also determine the quality and quantity of the data needed to be collect and stored. The operational plans specifically determine what information will appear in the interfaces that the employees visit when they need to retrieve information. Finally, the technical plan translates the previously mentioned operations in technical and realistic terms. In general, the whole procedure is very business oriented.’

**Deployment of customer knowledge at Swedbank**

Swedbank’s customer knowledge is actually deployed for the creation of customer segments and customer portfolios. Specifically, it was mentioned that ‘We use the collected customer data to segment our customer base according to different factors (e.g. customer’s profitability) and from different aspects. For instance, a customer that is a student, it is very likely to be almost non-profitable for us at the moment. But if we think about that situation in the long run, there are strong possibilities for that client to become very profitable for us when he/she starts working. Thus, that particular customer might be in the non-profitable segment at present, but very likely to be in the most profitable one in the near future. Actually, we are trying to pay attention and be really careful with those potentially profitable segments, as we consider them the future survival of our organization. Of course a man 80
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years old cannot be in such a segment but in other segments of different levels of importance and capabilities. As you understand, there is a combination of factors that give us the right picture and knowledge about the customer. We always study our customers in relation to their lifetime value and we examine the created segments from different angles. In general, with the available information we can segment the customer base, understand the needs, serve better and, consequently, satisfy our customers.’

Furthermore, customer knowledge is being deployed for new product development. As Mr Landström and Mr Johansson claimed ‘There are people employed to concern about the customers’ future needs and, also, the generation of new products. There are several employees working for this concept and for the New Product Development departments throughout the organization. Those employees are integrating the data from the organization’s warehouses and they process them to acquire the right knowledge.’

Finally, regarding the deployment of the generated customer knowledge for promotion purposes the respondents mentioned that ‘On a corporate level, we as a branch are collaborating with the central Marketing Analysis department in Stockholm. We provide them with the customer information we gather from the branch customers and they provide us with guidelines. In particular, they are addressing our organization’s campaign policy and give us some clues regarding the banks promotion strategies that aim to promote the right products to the right customers. As branch, we are responsible for the individual customers and to customize the offerings according to the guidelines provided from the Marketing Analysis department.’
6. Data Analysis

This chapter will present an analysis of the empirical data from chapter five in accordance with each research question. A within-case analysis where data from each of the two case studies will be compared to theory will be followed by cross-case analysis with respect to each section of the research questions, where the two case studies will be compared to each other in order to pinpoint similarities and differences.

6.1 Within Case Analysis of SEB

Customer data acquisition

As part of customer knowledge generation, data acquisition seems to be an important process for SEB as the company has a special department which deals with those issues. There is a Central Marketing Department which is responsible for the collection of the relevant customer data and its transformation to useful knowledge. The goals of the organization seem to determine the relevance and usefulness of the available data and the kind of data needed to be selected for the accomplishment of such goals.

From the empirical data presented previously, we observe that SEB is actually using several methods for collecting customer data in online and offline environment. As the first research question of this thesis aims to investigate e-business channels that contribute to the data acquisition process, below we are focusing on the online paths. Specifically, Internet is an important media of communication for the bank and its customers. One third of the total 200 million meetings with its customers are being held online. Taking this into consideration and the fact that a large proportion of the customer data is actually collected through meetings with the customers, ‘online channels’ contribution to data acquisition process is considerable. Below we provide the exact online methods used from the bank and in Table 6.1 we summarize our analysis.

To begin with, a survey is a frequently used method for customer data acquisition. As it was previously discussed in the literature review chapter, web based surveys involve online interviews and questionnaires in electronic forms. According to Rolwey (2002), the customer provides information in response to a request and data regarding a specific topic can be collected. Since the data is electronic, the need for transcription is eliminated and the data is ready for analysis (Rowley, 2002). The company conducts interviews with its customers and, also, sends questionnaires via Internet or mail. A third party is employed to conduct these surveys for the company to achieve objectivity. Thus, SEB is actually utilising web based surveys in order to select the customer data needed for the creation of customer knowledge.

Furthermore, the ability for all customers to communicate with the bank and express their views regarding SEB and its products is available on a 24/7 basis. This is a characteristic of online communities. These communities exist as online discussion forums, online bulletin boards and other community spaces that are deemed to constitute the membership of the community. The customers provide information during the participation in an online
Data Analysis

community and, knowledge from the customer about products and services can be collected (Rowley, 2002). As it was confirmed, discussion forums and bulletin boards were not hosted in the company's website and we did not observe any kind of other online community spaces. In consequence, an online 24/7 contact through e-mails is applied by SEB, and a board of trusted employees deals with these online meetings.

Moreover, the organization is actually utilising transaction data for the generation of useful customer knowledge. SEB refers repeatedly to transaction data when it comes to explain the methods followed in order to understand its customers. Specifically, it was mentioned that through the frequency and location of transactions the organization observes the behaviour, the changes in status and, also, the importance or profitability of the customer. In addition, from the literature we know that customers provide useful information when they do transactions online or offline, such as behaviours and demographics (name, address, e-mail address, credit card details) (Rowley, 2006). However, Harris (1999) states that transaction data has the potential to help companies to understand their customers better and make better decisions to enhance customer relationships, but simply amassing customer transaction data doesn't assure results. Accordingly, SEB's dependability on transaction data seems to be the least possible, as the organization is trying to protect the privacy of its customers and seems to challenge the potential of such data. Thus, it seems that SEB's policy is to take advantage of specific transaction data with respect to its customers' personal life.

Furthermore, a visitor to SEB's website can be tracked both when he/she logs in or not. In the literature presented previously, it was mentioned that the server log file recognizes the customer's IP address even if that customer is not engaged in a transaction (Rowley, 2002). Specifically, Rowley (2002) claims that with the server log file method customer's identity can be tracked even when he/she visits the particular website without logging in. From the above, it is obvious that SEB refers to a server log file method for acquiring such customer data online. As it was confirmed, the company utilises these data combined with other sources in order to understand its customers' behaviour. This data can be also useful for assessing the effectiveness and attractiveness of a website, even though customers do not purchase from the merchant (Rowley, 2002). Moreover, server log file is partially motivated by the need to support the collection of data for demographic analysis and for log summaries (Éirikni & Vazirgiannis, 2003).

Finally, SEB seems to use cookies in its website in order to acquire customer data. According to Éirikni & Vazirgiannis (2003), using cookies is a way of uniquely identifying a visitor through a session. Cookies are the data send from a web server to a web client, stored locally by the client and sent back to the server on subsequent request. Each time the client connects to the Internet the server looks for the cookie on the hard drive, and through this cookie is able to identify the client (Rowley, 2002). The use of cookies was directly observed in the bank’s website as a means of acquiring customer data. However, customers can set their web browser so that it notifies them when it receives a cookie and they can then decide whether to accept it or not. It is not possible to reject cookies related to certain web pages where authorization is required. In SEB's website information is provided to the visitors regarding cookies and the possibility to choose if the visitor wishes to continue the visit or not. If the customer chooses not to accept cookies, such pages will not open in most cases. Thus, the
company can observe the quantity and quality of the websites visited from a particular IP address that previously visit its website.

In relation to the variables connected with data acquisition method summarized in Table 6.1 from the SEB case with existing theory.

Table 6.1: Summery of comparison of SEB and theory with regard to customer data acquisition method

<table>
<thead>
<tr>
<th><strong>Online acquisition methods</strong></th>
<th><strong>Theory</strong></th>
<th><strong>SEB</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Web based surveys</td>
<td>Customer provides via Internet information in response to a request for the information. (Rowley, 2002)</td>
<td>Web based surveys are conducted as the company sends questionnaires online to its customers for customer data acquisition purposes.</td>
</tr>
<tr>
<td>Online communities</td>
<td>Online communities are computer mediated spaces where there is an integration of content and communication with an emphasis on member generated content. (Rowley, 2002)</td>
<td>Customers communicate online and 24/7 with the company through e-mail. Online communities do not exist.</td>
</tr>
<tr>
<td>Transactions</td>
<td>Customers provide information when they are involved in transactions with online merchant. (Rowley, 2002)</td>
<td>Transactions provide the company with information regarding the frequency of contact with the bank and the location of a customer.</td>
</tr>
<tr>
<td>Server log file</td>
<td>These data can be analysed to provide a profile of searching habits and sequences from a specific IP addresses or to provide a profile of hits and traffic to specific web sites. (Rowley, 2002)</td>
<td>The company observes the customers’ visit paths and interactions with its website.</td>
</tr>
<tr>
<td>Cookies</td>
<td>Cookies are the data send by a web server to a web client, stored locally by the client and sent back to the server on subsequent request. (Eirinaki &amp; Vazirgiannis, 2003)</td>
<td>Cookies observed directly as in the bank’s website where the company admits their existence. The company can observe the quantity and quality of the websites visited from a particular IP address</td>
</tr>
</tbody>
</table>

As discussed previously, CKM theories suggest an active customer in the data acquisition process, which will lead to the active participation of the customer in the knowledge creation process. In general, SEB utilizes several paths for the acquisition of customer data that involve interaction with the customer. Most methods concerned with the offline environment such as face to face interviews, call center contacts and offline surveys. The web based survey is the obvious interactive method for collecting data online, where the customer is active in the knowledge generation process.
Customer data processing

According to Bose & Sugumaran (2003), the first step in a knowledge management process is knowledge identification and generation. It includes recognition and creation of new information and knowledge. It focuses on determining the relevant customer, process and domain knowledge needed to successfully carry out CRM activities. (Bose & Sugumaran, 2003) SEB repeatedly refers to the existence of a CRM tool which is actually supported from the customer knowledge generated from the combination of the collected data. As it was previously discussed, the Marketing Department of the organization is responsible to carry out those activities, in order to support the SEB's branches to serve the customers better. As SEB admits procedures are taking place to determine the importance of the customer data acquired. The identification of the customer data relevance and, consequently, knowledge generation depends on the pre-decided goals of the organization. For instance, SEB attempts to satisfy its customers through the understanding of the businesses that they are involved in, and, accordingly, fulfill their needs. This stage of the knowledge management process also involves the acquisition or generation of this knowledge by monitoring the activities of customers and other players in the industry (Bose & Sugumaran, 2003). Thus, the fact that SEB tries to understand its customers’ needs through the observation of their behaviour and activities, is actually part of this knowledge management process. Furthermore, the company is trying to improve that process due to the fact that the bank has access to a huge amount of data which makes it difficult to distinguish the important ones.

The next step is the knowledge codification and storage process where knowledge is converted to machine readable form and stored for future access and use. It deals with archiving the new knowledge by adding it to a persistent knowledge repository that all stakeholders can use. The process consists of mapping the knowledge to appropriate formalism, converting it to the internal presentation and storing it in the knowledge repository. (Bose & Sugumaran, 2003) Even though there is no direct statement regarding the codification of knowledge, it is obviously implied when SEB's representative refers to the storage of knowledge in the customer profiles and by means of the CRM tool or other databases. Inside those profiles the employees can reach helpful knowledge about the customers, which supports them to provide better services. Specifically, it was mentioned that in the company's database or the profile of each customer, an employee can find some issues that he/she has to address. Thus, it seems that the knowledge which is being created from the marketing analysis department combined with the managers' and other employees' contribution is being codified and stored in the company's databases.

As it was presented in the literature review chapter, knowledge distribution process is related to the dissemination of knowledge throughout the organization, and handling requests for specific knowledge elements (Bose & Sugumaran, 2003). According to our empirical data, every employee of SEB has access to the company's knowledge databases. The extent to which an individual employee has access to that knowledge is determined from the leadership and depends on the position that he/she has inside the organization. Particularly, every SEB’s employee has access to all the information needed to successfully carry out his/her position's activities. Generally, knowledge dissemination can employ either push or pull technologies...
depending on the organization’s culture and infrastructure (Bose & Sugumaran, 2003). SEB seems to have a knowledge culture and the infrastructure to effectively spread the existed knowledge. Those activities are supported from the IT infrastructure of the company. Furthermore, SEB initiatives to train its employees in order to increase the co-ordination of different departments, added to the knowledge culture of the organization.

Finally, knowledge utilization and feedback process comprises the usefulness of knowledge and the feedback provided. This process enables the stakeholders to identify and retrieve relevant knowledge needed for solving a particular problem (Bose & Sugumaran, 2003). As mentioned above, SEB recently has taken initiatives to increase the cross-utilization of the existed knowledge inside and outside the organization. Specifically, one important step in this direction was the active work that was carried out in order to increase co-ordination of the different parts of the bank for the purpose of developing the bank into a more customer-oriented and value adding organization. That cooperation increased the cross-utilization of each respective area's specialist competence within the bank and was the reason for the successful relations with the bank's institutional clients. Thus, the company is actually introducing cooperation with its internal and external stakeholders in terms of knowledge utilization. According to Bose & Sugumaran (2003), stakeholders can provide feedback regarding the quality of knowledge stored in the repositories as well as on how easy or difficult it is, to search for relevant knowledge. They also can identify new types of knowledge which need to be gathered, based on strategic objectives and the changes taking place within the environment. Indeed, SEB takes into consideration the employee's feedback regarding the usefulness and quality of the knowledge stored in the company's databases. Furthermore, those databases are continuously improved in accordance to the feedback and the other sources of information.

The relation between SEB’s methods and existing theory, concerning the variables connected to the customer data processing method is summarised in table 6.2.

Table 6.2 Summary of comparison of SEB and theory with regard to customer data processing

<table>
<thead>
<tr>
<th>Data processing to generate Customer Knowledge</th>
<th>Theory</th>
<th>SEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge identification and generation</td>
<td>Includes recognition and creation of new information and knowledge. (Bose &amp; Sugumaran, 2003)</td>
<td>The Marketing Department of the organization is responsible to carry out those activities, in order to support the SEB's branches to better serve the customers.</td>
</tr>
<tr>
<td>Knowledge codification and storage</td>
<td>Involves converting knowledge into machine readable form and storing it for future use. (Bose &amp; Sugumaran, 2003)</td>
<td>The company codifies and stores knowledge in the customer profiles by means of a CRM tool or in other databases.</td>
</tr>
</tbody>
</table>
**Data processing to generate Customer Knowledge**

<table>
<thead>
<tr>
<th>Knowledge distribution</th>
<th>Theory</th>
<th>SEB</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Relates to the dissemination of knowledge throughout the organization and handling requests for specific knowledge elements. (Bose &amp; Sugumaran, 2003)</td>
<td>SEB seems to have a knowledge culture and the infrastructure to effectively spread the existed knowledge. Dissemination of customer knowledge is supported from the IT infrastructure of the company. The company supports the cooperation with its internal and external stakeholders in terms of knowledge utilization. It, also, considers the employee's feedback regarding the usefulness and quality of the knowledge stored in the company's databases.</td>
</tr>
<tr>
<td>Knowledge utilization and feedback</td>
<td>Comprises the usefulness of knowledge from all stakeholders and the consideration of feedback providing. (Bose &amp; Sugumaran, 2003)</td>
<td></td>
</tr>
</tbody>
</table>

**Customer knowledge deployment**

In relation to the deployment of customer knowledge, SEB recognises the use of customer knowledge as a strategic one. The foremost usage we examine is the creation of a customer portfolio from the generated knowledge. The concept of a customer portfolio parallels that of the concept of the product portfolio. Customer value can be calculated by an examination of the last date of purchase, the frequency of purchases in store, and the monetary value of those purchases (Rowley, 2005). From the empirical data we observe that the company is creating a customer portfolio, which determines the customer's value and, consequently, SEB's attitude towards its client's. The distinction between individual and institutional customers resembles the main categorization in that portfolio generation. The next step is to address the importance of each customer from the available customer data. Rowley (2005) supports that one of the uses of transaction data is to assess, from the customers' level of engagement with the business, whether to continue to encourage their 'loyalty' or whether they fall into a category of 'non-preferred customers'. Accordingly, SEB assesses the importance of its customers for the organization from their transaction history and decides its reactions in order to maintain or strengthen the relationship with those particular customers. Characteristic example is that of the customer who has not contacted the bank by any means for a long period of time. Whether the bank will try to regain his/her loyalty or not, depends on the transaction history of that customer, which demonstrates how valuable he/she is for the organization.

Moreover, the second usage of customer knowledge we are examine is the segmentation of the customer base. According to Rowley (2005), segmentation may be conducted on the basis of whether there are children in the family, age, income, geographical location, and several other factors. These factors can be correlated with transaction data to generate typical transaction patterns for specific segments. Empirical data showed that SEB segments its customers based on demographic data and other factors. Specifically, the company repeatedly refers to the segments and groups of customers that contribute to the more productive and customized service supply. In addition, SEB directly admits the deployment of these
segments in order to understand the typical behaviours of customer groups, through the observation of their behavioural patterns. Once these segments are formed, the business can focus on tailoring marketing communication and product development to meet the perceived needs of these segments. (Rowley, 2005) Indeed, the bank segments its customer base and attempts to promote its products to the relevant groups of customers.

According to Su et al. (2006), the process of product features and benefit identification, customers needs categorization, and market segmentation, lead to customers’ needs pattern extraction and to clues for new product development. New product development pressures arise from the customer's specific needs and the company must pursue it as a continuous process in order to survive in the long run. Similarly, the new product development process is a strategic one for SEB, as the company has a relative department which deals with such issues. This department relies a lot on the knowledge acquired from the customers, which experts are analysing and integrating into the new product development process. It is believed that customers might have better ideas about specific products, as they are the user of the bank's products or services. In particular, key customers are interviewed with the purpose of customer needs extraction and understanding. The procedure attempts to translate this information into a new product or the improvement of the existed ones. As it was mentioned, this can be done by observing the reappearance and repetition of the same suggestions, behaviours or interests from the customers and try to develop a new product accordingly. Furthermore, part of the department responsibilities is to select customer knowledge and information from other sources and try to translate it into a new product.

Moreover, SEB is actually utilizing its customer knowledge to better serve its client's and achieve customer satisfaction. According to Rowley (2005), knowledge of customers and their engagement with a business in terms of its nature, length, and extent can be used to inform the design of the interaction, in, for example, customer service contexts. Understanding the customer's needs and behaviour through the observation of his/her past interactions with the organization, is the way for the bank to become pro-active to their future needs. Relative example is the fact that SEB is always trying to provide the customers with products and services according to their specific needs and status. Thus, the company attempts to customize its products for the customers, according to the knowledge it has regarding each individual. In this direction is addressed and the complain management for the organization's dissatisfied customers.

The obvious deployment of SEB's customer knowledge is for the purpose of effective marketing communication and promotion. According to Rowley (2005), personal contact details allow the organisation to locate and communicate with the customer, possibly through multiple channels extending to work addresses, mobile phones and the Internet. Transaction data provide indications on the kind of products customers normally buy, allowing a supermarket, for example, to target information on promotions and vouchers to encourage customers to try alternative products. (Rowley, 2005). SEB's strategy is to deploy the generated customer knowledge in order to promote its products in a more focused way. This is being achieved through focusing on individuals or groups of customers. In addition, the company seems to have established a sophisticated way of deploying its interpretation of the customer's situation and behaviour. In particular, through the observation and understanding
of customer's typical behaviour, the company manages to offer them more customized products and services, as well as, solutions to their economical difficulties.

The relation between SEB’s method and existing theory regarding the variables connected to customer knowledge deployment is summarised in table 6.3.

Table 6.3 Summary of comparison of SEB and theory with regard to customer knowledge deployment

<table>
<thead>
<tr>
<th>Deployment of Customer Knowledge</th>
<th>Literature</th>
<th>SEB</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer portfolios</strong></td>
<td>The concept of a customer portfolio parallels that of the concept of the product portfolio. Customer value can be calculated by an examination of the last date of purchase, the frequency of purchases in store, and the monetary value of those purchases. (Rowley, 2005)</td>
<td>The company is creating a customer portfolio, which determines the customer value and the attitude towards its client's. The distinction between individual and institutional customers resembles the main categorization in that portfolio generation. SEB assesses the importance of its customers for the organization from their transaction history and decides its reactions in order to maintain or strengthen the relationship with those particular customers.</td>
</tr>
<tr>
<td><strong>Building segments</strong></td>
<td>Personal data entered on registration forms and the like is valuable in segmenting customers. Once these segments exist, the business can focus on tailoring marketing communication and product development to meet the perceived needs of these segments. (Rowley, 2005)</td>
<td>The organization segments its customers based on demographic data and other factors. Specifically, the company repeatedly refers to the segments and groups of customers that contribute to the more productive and customized service supply. In addition, SEB directly admits the deployment of these segments in order to understand the typical behaviours of customer groups, through the observation of their patterns.</td>
</tr>
<tr>
<td><strong>New product development</strong></td>
<td>Transaction data profiles for specific groups can indicate the product lines that are preferred by specific segments and suggest new product opportunities (Rowley, 2005) Product features and benefit identification, customers needs categorization, market segmentation leads to customers' needs pattern extraction and to the clues for new product development.(Su et al., 2006)</td>
<td>The new product development process is a strategic one for SEB, as the company has a relative department to concern with such issues. This department relies a lot on the knowledge acquired from the customers, which experts are analysing and integrating into the new product development process.. The procedure attempts to translate this information into a new product or the improvement of the existed ones.</td>
</tr>
<tr>
<td><strong>Business processes and customer service</strong></td>
<td>Knowledge of customers and their engagement with a business, in terms of its nature, length, and extent can be used to inform the design of the interaction, in for example customer service contexts.(Rowley, 2005)</td>
<td>The company is actually utilizing its customer knowledge to better serve its client's and achieve customer satisfaction. Understanding the customer's needs and behaviour through the observation of his/her past interactions with the organization, is the way for the bank to become pro-active to their future needs. Thus, the</td>
</tr>
</tbody>
</table>
### Data Analysis

### Deployment of Customer Knowledge

<table>
<thead>
<tr>
<th>Literature</th>
<th>SEB</th>
</tr>
</thead>
<tbody>
<tr>
<td>Personal contact details allow the organization to locate and communicate with the customer, possibly through multiple channels, extending to work addresses, mobile phones and the Internet. Transaction data provide indications of the kinds of products that customers normally buy. (Rowley, 2005)</td>
<td>The bank's strategy is to deploy the generated customer knowledge in order to promote its products in a more focused way. This is being achieved through the focus on individuals or groups of customers. In addition, the company seems to have established a sophisticated way of deploying its interpretation of the customer's situation and behaviour.</td>
</tr>
</tbody>
</table>

### Marketing communication and promotions

6.2 Within case analysis of Swedbank

#### Customer Data Acquisition

With the aim of satisfying customer’s needs and providing the best financial solutions, Swedbank recognizes the need of collecting customer data to better understand its customers’ needs. The central Marketing Analysis department is responsible for setting the guidelines and the strategy of collecting customer data. These data is gathered by using various methods and the large proportion of these paths are related to the offline environment. As it was clearly admitted from Swedbank, several factors are causing a delay in utilizing online customer data for the purpose of generating customer knowledge. Specifically, the enormous amount of online data that can be collected from the approximately 8.7 million individual customers, retards the implementation of such concepts. This occurs, because the return on investment and the effectiveness is difficult to be measured according to the bank. Nevertheless, below we provide the online methods the organization uses to acquire customer data, as the first research question of this thesis requires.

The first method we will examine is the web-based survey. In web based surveys the customer provides information via Internet in response to a request for the information through online interviews and questionnaires (Rowley, 2002). As it was confirmed, a third party is responsible for conducting these surveys and Swedbank does not obviously participate in these concepts. Once a year the third party conducts the survey in order to observe and understand the markets in which Swedbank operates. The bank outsources those activities because it is believed that they can obtain a more objective point of view for the marketplace and, also, it gives them clues on what is the bank's position in the market compared to the rivals. However, these surveys are not intended to provide understanding of the customers, current or potential ones. It is not a way of acquiring customer data in order to generate customer knowledge. This is believed to be the responsibility of the people inside the organization and the means of collecting customer data by surveys seems to be what the company names 'customer meetings'. It is in these meetings where the customer
interviewed from the bank's employees in order to understand their needs and their future behaviours.

Creating online communities and gathering the opinion of those communities is another way of collecting customer data in the e-business environment. According to Rowley (2002), online communities are computer mediated spaces where there is an integration of content and communication, with an emphasis on member generated content. Yet now there is no existence of such communities in Swedbank's website where members of those communities send their comments regarding the bank and its products or services. But the customer can communicate with the bank 24/7 through the bank's website. The communication regarding service support and other troubles solution can take place through the telephone or with 'one to one' online conversations. These online conversations are carried out through emails or chat rooms and the company seems to take advantage of this interaction with the customer to acquire useful customer data and information.

The transaction data is Swedbank's most common method used to understand the past buying behaviour of its customers. According to Rowley (2002), customers provide information when they are involved in transactions with online merchants, such as behaviours and demographics (Rowley, 2002). This is the most common method of collecting customer data and it is used for identifying the future needs of the customers. It is being observed that Swedbank utilizes these data as the main source of generating knowledge about the customer. Specifically, it was confirmed that transaction data have a decisive role in determining the profitability of the individual customer, as well as, the risks that he/she resembles for the organization. The degree of Swedbank's dependability on transaction data is also revealed from the company’s attempts to improve its IT infrastructure in order to be able to handle and exploit the higher transaction volumes of the recent period. A large proportion of these data are being acquired from the e-business environment, as 45% of its 8.7 million customer base uses Internet banking.

Furthermore, Internet gives an opportunity to collect customer data from the website's server log file system. According to Rowley (2002), these data can be analysed to provide a profile of searching habits and sequences from a specific IP addresses or to provide a profile of hits and traffic to specific web sites. Swedbank is now discussing the effective ways for utilising these online paths as a means of collecting customer data. As it was confirmed, the bank plans to use this source of data in order to understand its client’s Internet behaviours. Generally, the reason for the delay in utilising server log file is that they have the ability to acquire enormous amount of data, which makes it difficult to distinguish the relevant ones. At the moment these data are being used for security reasons and not for customer data gathering.

Finally, cookies are also used from the bank for security reasons and not for customer data acquisition purposes. Cookies are data send by a web server to a web client, stored locally by the client and sent back to the server on subsequent request (Eirinaki & Vazirgiannis, 2003). There is a statement regarding cookies in bank website and the terms of use. If the visitor rejects cookies from his/her web browser it is not possible to have full accessibility in the bank’s website.
The relation between Swedbank’s methods and existing theory regarding the variables connected to data acquisition method is summarized in table 6.4

Table 6.4 Summary of comparison of Swedbank and theory with regard to customer data acquisition

<table>
<thead>
<tr>
<th>Online acquisition methods</th>
<th>Theory</th>
<th>Swedbank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web based surveys</td>
<td>Customer provides via Internet information in response to a request for the information. (Rowley, 2002)</td>
<td>The company is not conducting web based surveys directly as means of collecting customer data.</td>
</tr>
<tr>
<td>Online communities</td>
<td>Online communities are computer mediated spaces where there is an integration of content and communication with an emphasis on member generated content. (Rowley, 2002)</td>
<td>Online communities do not exist. The communication regarding service support and other troubles solution can take place through the telephone or with one to one online conversation.</td>
</tr>
<tr>
<td>Transactions</td>
<td>Customers provide information when they are involved in transactions with online merchant. (Rowley, 2002)</td>
<td>The company's most common way of collecting customer data is through transactions. It is these data that determine the profitability and the risks involved with a particular customer.</td>
</tr>
<tr>
<td>Server log file</td>
<td>These data can be analysed to provide a profile of searching habits and sequences from a specific IP addresses or to provide a profile of hits and traffic to specific web sites. (Rowley, 2002)</td>
<td>The bank utilises server log file data for security reasons and not yet for customer data acquisition.</td>
</tr>
<tr>
<td>Cookies</td>
<td>Cookies are the data send by a web server to a web client, stored locally by the client and sent back to the server on subsequent request. (Eirinaki &amp; Vazirgiannis, 2003)</td>
<td>Cookies observed directly in the bank’s website. The data collected from cookies is used for security reasons and not for customer data acquisition.</td>
</tr>
</tbody>
</table>

Taking the above into consideration, we can observe that Swedbank is using more offline than online customer data acquisition methods. The large amount of data that can be gathered seems to be a brake in the utilisation of online paths for customer knowledge generation purposes. Moreover, we observe little interaction with the customer in the data collection process regarding the online channels. The customer is active only when an online conversation takes place through emails or chat rooms, which does not seem to be an important source of knowledge for the company. The interaction appears more in the offline methods that Swedbank uses, such as the personal interviews where the customer willingly provides the information requested.
Data Analysis

Processing of Customer Data

In order to generate customer knowledge it is initially required to process the collected data. The first step of customer data processing is knowledge identification and generation. According to Bose & Sugumaran (2003), knowledge identification and generation includes recognition and creation of new information and knowledge. It focuses on determining the relevant customer, process and domain knowledge needed to successfully carry out CRM activities. As part of knowledge recognition and generation, Swedbank's Marketing Analysis department is concerned with the configuration of the organization's main strategy of collecting data on customers. On the branch level, the employee's of the Information Resource Management department, as well as those of the Marketing Analysis and Architecture division, are addressing in detail the specific customer data needed to be collected. The procedure takes place with respect to the pre-determined goals of the organization and the restrictions of the Swedish law for the citizen's privacy. These data determine the quality of the customer knowledge that the company generates. This step of the knowledge management process also involves the acquisition or generation of this knowledge by monitoring the activities of customers and other players in the industry. (Bose & Sugumaran, 2003) Swedbank attempts to accomplish this through the integration of different sources of customer data, aiming at the understanding of the present and future behaviours of its customers.

After identifying and generating the relevant knowledge, it is necessary to codify and store this knowledge. Knowledge codification and storage involves converting knowledge into machine readable form and storing it for future use (Bose & Sugumaran, 2003). The empirical data indicates that Swedbank translates this useful customer knowledge into machine readable format. Particularly, the information acquired from the interviewed customers is documented into digital forms, which are stored in the client's interface. Furthermore, the transaction and other sources of data are stored in those interfaces, and their combination provides the company's employee's with useful knowledge for successfully carrying out their activities. These data appear in the form of statistics, or other customer information such as demographics.

The third step in the customer data processing is knowledge distribution which is related to the dissemination of knowledge throughout the organization, and handling requests for specific knowledge elements (Bose & Sugumaran, 2003). Swedbank's customer information and IT resources are protected in terms of accessibility, accuracy, privacy and traceability. Only certified programs and tools are used in the bank’s IT environment in order to prevent unauthorised access, unintentional use, disclose, false distribution, theft and destruction or alteration of customer information. For the knowledge exchange and dissemination, both Swedish and Baltic parts of Swedbank have independent intranets. This infrastructure provides various channels for all employees to communicate significant information to the relevant recipients. The employees have access to the company's databases to the degree that his/her position requires. Moreover, the communication and knowledge exchange with external parties is taking place under the organizations regulations in order to ensure that information obligations are met in a correct and thorough way. According to Bose & Sugumaran (2003), knowledge dissemination can employ either push or pull technologies.
depending upon the organization’s culture and infrastructure. Swedbank recently initiated a program aiming to adopt a more knowledge intensive and structured way of working with its customers and other stakeholders. It is believed that this initiative will strengthen the knowledge culture of the organization.

The last step of customer data processing in order to generate customer knowledge is knowledge utilization and feedback. Bose & Sugumaran (2003) suggest that knowledge utilization and feedback comprises the usefulness of knowledge from all stakeholders and the consideration of feedback providing. Accordingly, Swedbank's employees are encouraged to provide their suggestions regarding the usefulness of the information stored to the customer’s interface. As it was confirmed, it is really important for the bank to know what the employees think about the quality of the information as they are the ones who are actually utilizing and taking advantage of this knowledge. In addition, the company requests from its employees to participate in the process of formulating the questions to be asked in the customer meetings. This participation resembles the feedback providing of the internal stakeholders in the quality of information needed to be acquired and utilized.

The relation between Swedbank’s methods and existing theory regarding the variables connected with data processing methods is summarized in table 6.5.

Table 6.5: Summary of comparison of Swedbank and theory with regard to customer data processing

<table>
<thead>
<tr>
<th>Data processing to generate Customer Knowledge</th>
<th>Theory</th>
<th>Swedbank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge identification and generation</td>
<td>Includes recognition and creation of new information and knowledge. (Bose &amp; Sugumaran, 2003)</td>
<td>The Marketing Analysis department is concerned with the settlement of the organization's main strategy of collecting data on customers. On the branch level, the employee's of the Information Resource Management department, as well as, those of the Marketing Analysis and Architecture division, are addressing in detail the specific customer data needed to be collected.</td>
</tr>
<tr>
<td>Knowledge codification and storage</td>
<td>Involves converting knowledge into machine readable form and storing it for future use. (Bose &amp; Sugumaran, 2003)</td>
<td>The information acquired from the interviewed customers and other sources are documented into digital forms, which are stored in the client's interface. These data appear in the form of statistics or other customer information such as demographics.</td>
</tr>
<tr>
<td>Knowledge distribution</td>
<td>Relates to the dissemination of knowledge throughout the organization and handling requests for specific knowledge elements. (Bose &amp; Sugumaran, 2003)</td>
<td>The bank has independent intranets. This infrastructure provides various channels for all employees to communicate significant information to the relevant recipients.</td>
</tr>
</tbody>
</table>
Deployment of Customer Knowledge

To begin with, Swedbank's customer knowledge is deployed for the customer portfolio creation. In order to measure the value of its customers the bank is utilizing the knowledge that the combination of the acquired customer data provide. As described previously, the concept of a customer portfolio parallels the concept of the product portfolio. Customer’s value can be calculated by an examination of the last date of purchase, the frequency of purchases in store, and the monetary value of those purchases. Apart from the client's transaction history, Swedbank's IT infrastructure calculates the profitability and risk that a customer resembles for the organization. This information combined with the life time value of the customer, provides the company with a sophisticated method of customer portfolio generation. Enlightening example is the one with the consideration of a student as a potential profitable and, consequently, valuable client for the bank. In particular it was supported that Swedbank pays special attention to these potentially profitable groups of customers, as they are considered to be the future survival of the organization.

Part of the customer portfolio creation is the customer base segmentation for Swedbank. Segmentation is taking place based on the bank's knowledge about the customers. According to Rowley (2005), segmentation may be conducted on the basis of whether there are children in the family, age, income, geographical location, and a variety of other factors. Personal data entered on registration forms and the likes is valuable in segmenting customers. After segmenting the customer, the business can focus on tailoring marketing communication and product development to meet the perceived needs of these segments. Accordingly, the bank segments its customer based on age, income and profession, as well as from different factors and aspects. The purpose of the process is to provide the bank with a more effective and focused way of serving the customer. In addition, it supports the company for the focused promotion of its products.

Though the needs and wants vary from each customer segment it is important to continuously improve the features and benefits of existing product, as well as developing new products. Transaction data profiles for specific groups can indicate the product guidelines that are preferred by specific segments and suggest new product opportunities (Rowley, 2005). According to Su et al (2006) product features and benefit identification, customers needs categorization, market segmentation lead to customers’ needs pattern extraction, and to clues for new product development. The incorporation of customer knowledge in new product
Data Analysis

development processes was directly admitted from Swedbank. In particular, the company has New Product Development departments throughout the organization which concern themselves with the understanding of the market's future needs. Customer data from the organization's warehouses, as well as from other sources, are integrated in order to be analysed and provide the company with the appropriate knowledge. Finally, this knowledge provides clues for new product development or/and improvement of existing ones, in order to meet the customer's future needs.

Knowledge from customers and their engagement with a business, in terms of its nature, length, and extent, can be used to update the design of the interaction process in, for example, customer service contexts (Rowley, 2005). Even though little was mentioned specifically for the ways that customer knowledge contributes to the customer service design, it is directly admitted that the company deploys this knowledge to provide better services. Part of this procedure is the information acquired in the customer meetings, where the employee attempts to capture and store the client's complaints, suggestions and perception of the bank's services. This data is processed in order to provide the insight and the clues for the improvement of the customer service. The aim is to understand the client's needs, serve more effectively and consequently, achieve customer satisfaction.

Finally, Swedbank is actually deploying its customer knowledge for product communication and promotion purposes. According to Rolwey (2005), personal contact details allow the organisation to locate and communicate with the customer, possibly through multiple channels, extending to work addresses, mobile phones and the Internet. Transaction data provide indications on the kind of products that customers normally buy (Rowley, 2005). Regarding the corporate level, the main campaign policy of Swedbank is decided by the central Marketing Analysis department. These policies are formulated by taking into consideration the present customer knowledge which exists in the company's warehouses. The foremost purpose is to offer and promote the right products to the right customers.

The relation between Swedbank’s methods and existing theory regarding the variables connected with data customer knowledge deployment is summarised in table 6.6

Table 6.6: Summary of comparison of Swedbank and theory with regard to customer knowledge deployment

<table>
<thead>
<tr>
<th>Deployment of Customer Knowledge</th>
<th>Literature</th>
<th>Swedbank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Customer portfolios</td>
<td>The concept of a customer portfolio parallels that of the concept of the product portfolio. Customer value can be calculated by an examination of the last date of purchase, the frequency of purchases in store, and the monetary value of those purchases. (Rowley, 2005)</td>
<td>Apart from the transaction history of the client's, Swedbank's IT infrastructure calculates the profitability and risk that a customer resembles for the organization. This information combined with the lifetime value of the customer, provides the company with a sophisticated method of customer portfolio generation.</td>
</tr>
<tr>
<td>Building segments</td>
<td>Personal data entered on registration</td>
<td>Part of the customer portfolio creation is</td>
</tr>
<tr>
<td><strong>Deployment of Customer Knowledge</strong></td>
<td><strong>Literature</strong></td>
<td><strong>Swedbank</strong></td>
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<tr>
<td>forms and the like is valuable in segmenting customers. Once these segments exist, the business can focus on tailoring marketing communication and product development to meet the perceived needs of these segments. (Rowley, 2005)</td>
<td>Transaction data profiles for specific groups can indicate the product lines that are preferred by specific segments and suggest new product opportunities (Rowley, 2005) Product features and benefit identification, customers needs categorization, market segmentation leads to customers’ needs pattern extraction and to the clues for new product development.(Su et al., 2006)</td>
<td>The company has New Product Development departments throughout the organization that concern with the understanding of the market's future needs. Customer data from the organization's warehouses, as well as, from other sources are integrated in order to be analysed and provide the company with the appropriate knowledge. Then this knowledge provides the clues for the new product development or the improvement of the existed ones, in order to meet the customer's future needs.</td>
</tr>
<tr>
<td><strong>New product development</strong></td>
<td>Knowledge of customers and their engagement with a business, in terms of its nature, length, and extent can be used to inform the design of the interaction, in for example customer service contexts.(Rowley, 2005)</td>
<td>it is directly admitted that the company deploys this knowledge to provide better services. Part of this procedure is the information acquired in the customer meetings, where the employee attempts to capture and store the client's complaints, suggestions and perception of the bank's services. This data are processed in order to provide the insight and the clues for the improvement of the customer service. The aim is to understand the client's needs, serve more effectively and, consequently, achieve customer satisfaction.</td>
</tr>
<tr>
<td><strong>Business processes and customer service</strong></td>
<td>Personal contact details allow the organisation to locate and communicate with the customer, possibly through multiple channels, extending to work addresses, mobile phones and the Internet. Transaction data provide indications of the kinds of products that customers normally buy. (Rowley, 2005)</td>
<td>The central Marketing Analysis department is addressing bank’s campaign policy and gives some clues to branch level regarding the banks promotion strategies. The aim is to promote the right products to the right customers.</td>
</tr>
<tr>
<td><strong>Marketing communication and promotions</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
6.3 Cross-Case Analysis

As part of the data analysis, in this section we shall compare the collected data for both cases with each other. Through this comparison we are going to observe the similarities and differences appearing in the CKM procedures that the examined cases of SEB and Swedbank are applying.

Customer Data Acquisition

To begin with, we are going to parallel the findings regarding the online data acquisition methods that the examined companies are utilizing for customer knowledge purposes. The first online path to be tested is the web-based survey which was found to be used from both SEB and Swedbank. The two organizations are outsourcing these procedures in order to achieve more objective results. The differences between them lie in the objectives that each company seeks from these surveys. SEB employs a third party to conduct the research, which aims to collect useful customer data that will contribute to the company's objectives. On the other hand, Swedbank's intention for conducting these surveys is to understand the marketplaces in which it operates and the position of the bank in these markets against its competitors. Thus, it is not using web-based or offline surveys for the purpose of generating customer knowledge, as the CKM theory suggests.

Furthermore, online communities are not used as a customer data collection path for both organizations. None of them hosts any kind of online forums, online bulletin boards or other community spaces in their main websites. Actually, the two organizations are exerting alternative means of online communication with their customers. In particular, Swedbank provides the opportunity for 'one to one' online conversation to its customers by hosting chat rooms in the main web page. The customer can request instructions for trouble solution, for online navigation and any other kind of information he/she desires. Through these conversations the bank acquires useful customer data that contributes to the generation of customer knowledge. Moreover, both companies are utilizing emails as means of online communication with the customers. This communication channel provides useful information regarding their clients.

Transaction data are the most comfortable way of collecting customer data for the organizations and especially for banks. Both SEB and Swedbank are making use of transactions in order to gather customer data to generate knowledge about the customer. In particular, SEB uses these data combined with the other sources, to create an integrated profile of the customer. Transactions provide the company with information regarding the frequency of contact with the bank and the location of a customer. However, it seems that SEB is not depending a lot on transactions for understanding its customers. On the other hand, Swedbank seems to be more transaction depended when it comes to customer knowledge generation. This is because the company uses this kind of data to understand the customer's behavior, as well as to determine the profitability and the risks engaged in the relationship with its customers. In this direction, they are focusing also the upgrades of the company's IT infrastructure with the aim to handle and exploit more effectively the increased number of transactions.
Moreover, server log file is one of the methods used to collected data on customers from SEB but not for Swedbank. The former utilizes the server log file data combined with the other kinds of information to generate customer knowledge. Specifically, the company observes the customers’ visit paths and interactions with its website and it integrates this information in the customers’ profile, in order to have a more holistic view. Nevertheless, Swedbank is not exerting this source of data yet for knowledge creation, but for security reasons. The reason seems to be the difficulty to convince the banks leadership for the return on investment of such a concept. And this is because distinguishing the relevant data that will provide insight regarding the bank's customers, requires research and planning which is translated into considerable financial resources. Thus, the whole concept was retarded due to these factors and the organization recently initiated a plan for the assessment and utilization of online customer data.

Similarly, cookies are utilized from SEB as customer data acquisition paths, but not from Swedbank. Both companies admit the existence of cookies in their websites and provide the visitor with the opportunity to reject them. Denying cookies will affect the degree of accessibility in both organizations website. Thus, in order to use all the functions in these web pages the visitor must accept the cookies from his/her web browser. SEB is actually using these data for customer knowledge generation and Swedbank is again utilizing it for security purposes.

Cross-case analysis of the relation between SEB’s and Swedbank’s methods regarding the variables connected to customer data acquisition is summarized in Table 6.7.

Table 6.7: Summary of cross case analysis with regard to customer data acquisition

<table>
<thead>
<tr>
<th>Online acquisition methods</th>
<th>SEB</th>
<th>Swedbank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web based surveys</td>
<td>Web based surveys are conducted as the company sends questionnaires online to its customers for customer data acquisition purposes.</td>
<td>The company is not conducting web based surveys directly as means of collecting customer data.</td>
</tr>
<tr>
<td>Online communities</td>
<td>Online communities do not exist. Customers communicate online and 24/7 with the company through e-mail.</td>
<td>Online communities do not exist. The communication regarding service support and other troubles solution can take place through the telephone or with one to one online conversation.</td>
</tr>
<tr>
<td>Transactions</td>
<td>Transactions provide the company with information regarding the frequency of contact with the bank and the location of a customer.</td>
<td>The company's most common way of collecting customer data is through transactions. It is these data that determine the profitability and the risks involved with a particular customer.</td>
</tr>
<tr>
<td>Server log file</td>
<td>The company observes the customers’ visit paths and interactions with its website.</td>
<td>The bank utilises server log file data for security reasons and not yet for customer data acquisition.</td>
</tr>
</tbody>
</table>
Finally, the degree of interaction with the customer in the online data acquisition methods seems to be greater for SEB. The organization attempts to involve the customer in the knowledge creation process through his/her participation in web-based surveys, as well as, through several offline methods. On the other hand, Swedbank seems to start realizing the potential of online customer data and recently took initiatives to address these issues. The only online path that the customer is active in the data acquisition process (and consequently the knowledge generation) is the “one to one” online conversation opportunity. However, again the method is not intended to directly request the customer for information. The interactive methods that Swedbank uses are concerned with the offline environment, such as the interviews of customers from the branch employees. Moreover, both organisations collect information from e-mails received from customers as part of help requests or complaints.

**Processing of Customer Data**

Many similarities occur in the knowledge management processes of the two organizations. Initially, resemblance exists in the procedures both companies follow to identify and generate customer knowledge. For SEB and Swedbank the central Marketing Analysis Departments are concerned with the formulation of the organizations' main strategies of collecting data on customers. The identification of the customer data relevance and consequently, knowledge generation, depends on the pre-decided goals. However, differences were observed in the branch level procedures, where Swedbank places employees from the Marketing Analysis and Architecture department of the organisation while SEB does not confirm the existence of such department. These individuals are responsible to address in detail the specific customer data which need to be collected, with respect to the guidelines from the central Marketing Analysis department. Both companies admit that they are going through changes in order to improve the knowledge identification procedure, as they have access to enormous amount of data that need to be carefully filtered.

In addition, the knowledge codification and storage procedures of both organizations have many similarities. In particular, both SEB and Swedbank codify the information acquired from the different sources and store them into the customer profiles or interfaces, as well as other databases. Regarding SEB, the knowledge which is being created from the Marketing Analysis department, combined with the managers' and other employees' contribution, is being codified and stored in the company's databases and the customer's profile. Accordingly, Swedbank's customer information, acquired from the interviewed customers, is documented into digital forms, which are stored in the client's interface. Furthermore, the transaction and...
other sources of data are stored in those interfaces, and their combination provides the company's employees with useful knowledge for successfully carrying out their activities.

Regarding the knowledge distribution across the organization, similarities occur in the procedures and infrastructures. Both SEB and Swedbank use their intranets and IT systems to spread the customer and employees' knowledge within the organization. Moreover, the extent to which an employee has access to these databases, is determined from his/her position in the company for both SEB and Swedbank. This means that the accessibility to the knowledge depends on the strategies addressed from the management, and the relative tactics that the central Marketing Analysis department defines to support these strategies. On the other hand, there are some differences in the knowledge culture of the two banks. Rowley (2005) stresses the importance of knowledge culture, so that the culture and the other aspects of the organizational environment are conducive to more effective knowledge creation, transfer, and use. This may involve tackling organizational norms and values as they relate to knowledge (Rowley, 2005). As our empirical data indicates, SEB seems to be a more knowledge intensive organization in terms of restrictions and regulations in the dissemination of knowledge. Swedbank obviously gives more emphasis on how to prevent and protect the knowledge which already exists in its databases. This could be translated into a sacrifice of the potential full exploitation of such knowledge. Nevertheless, both companies attempt to strengthen their knowledge culture by initiating training programs for their employees.

Finally, the last step in the knowledge management process that we examine, is the utilization and feedback knowledge provides. Both organizations take into consideration their employees feedback regarding the quality and usefulness of the existed knowledge. Specifically, Swedbank's employees are encouraged to provide their suggestions regarding the usefulness of the information stored to the customer’s interface. In addition, the company requires from them to participate in the processes which determines the quality of information to be acquired. Apart from the consideration of the employees' feedback, SEB introduced cooperation with its internal and external stakeholders in terms of knowledge utilization. In particular, the cooperation between the bank and its institutional clients attempts to increase the cross-utilization of each respective area's specialist competence, and the knowledge of the organization. SEB's databases are continuously improved in accordance to these feedbacks and collaborations.

Cross-case analysis of the relation between SEB’s and Swedbank’s methods regarding the variables connected to customer data processing is summarized in table 6.8

Table 6.8: Summary of cross case analysis with regard to customer data processing

<table>
<thead>
<tr>
<th>Data processing to generate Customer Knowledge</th>
<th>SEB</th>
<th>Swedbank</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge identification and generation</td>
<td>The Marketing Department of the organization is responsible to carry out those activities, in order to</td>
<td>The Marketing Analysis department is concerned with the settlement of the organization's main strategy of collecting data</td>
</tr>
</tbody>
</table>
Data Analysis

<table>
<thead>
<tr>
<th><strong>Data processing to generate Customer Knowledge</strong></th>
<th><strong>SEB</strong></th>
<th><strong>Swedbank</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>support the SEB's branches to better serve the customers.</td>
<td>on customers. On the branch level, the Information Resource Management department and the Marketing Analysis and Architecture division are addressing in detail the specific customer data needed to be collected.</td>
<td>The information acquired from the interviewed customers and other sources are documented into digital forms, which are stored in the client's interface.</td>
</tr>
<tr>
<td>The company codifies and stores knowledge in the customer profiles by means of a CRM tool or in other databases.</td>
<td>SEB seems to have a knowledge culture and the infrastructure to effectively spread the existing knowledge. Dissemination of customer knowledge is supported from the IT infrastructure of the company.</td>
<td>The bank has independent intranets. This infrastructure provides various channels for all employees to communicate significant information to the relevant recipients. The dissemination inside and outside the organization is restricted from Swedbank's norms.</td>
</tr>
<tr>
<td><strong>Knowledge distribution</strong></td>
<td>The company supports the cooperation with its internal and external stakeholders in terms of knowledge utilization. It, also, considers the employee's feedback regarding the usefulness and quality of the knowledge stored in the company's databases.</td>
<td>The bank’s employees are encouraged to provide their suggestions regarding the usefulness of the information stored to the customer's interface.</td>
</tr>
<tr>
<td><strong>Knowledge utilization and feedback</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Deployment of Customer Knowledge**

Initially, we will examine the utilisation of customer knowledge in order to create customer portfolios. Both SEB and Swedbank were found to build up customer portfolios that determine their attitude towards particular clients. Similarly, the two organizations exploit the transaction history of their customers, to evaluate their importance for the company. The difference lies to the extent of data processing, in order to provide the banks with their customers' value. While SEB seems to interpret this value as the frequency and profitability of the past or present transactions, Swedbank is following a more sophisticated procedure. Specifically, the available customer data is analysed and processed to provide the company with the profitability, risks, and probabilities the clients resemble for Swedbank. This information combined with the life time value of the customer, provides the company with an efficient method of customer portfolio creation. Moreover, the bank manages to get insight regarding the future value of its customers, which contributes to the future prosperity of the organization.

Furthermore, both organisations deploy customer knowledge for the segmentation of their customer base. Similarities occur in the purpose this segmentation serves, as the two organizations admit the utilization of customer groups in order to achieve more effective and
focused customer service. Differences were observed in the explanation of the methods the companies use to exploit the knowledge that customer segments provide. Though SEB stresses the importance of the procedure for the customization of its products and services, Swedbank is not clearly admitting it. In addition, it is not obvious if Swedbank is attempting to understand the segments behavioural patterns, as SEB is actually doing. However, both banks are deploying the customer base segmentation for a more focused product promotion.

Regarding the new product development, both organizations admit the importance of their customer knowledge. SEB and Swedbank have relative New Product Development departments which are working on the detection of opportunities for new product creation. These departments are deploying the existing customer knowledge of the organizations, in order to capture the customers' needs and to translate these needs into new products. In particular, both organisations exert information and knowledge from multiple external and internal sources. Differences occur in the participation of the customer in the product generation process, where SEB's clients seem to be more active. The personal interviews intent to directly involve the customers in the process and they considered as partners of the organization. Thus, the company attempts to co-create and improve its products with the customers. On the other hand, Swedbank's clients do not seem to have the same degree of involvement in the new product development process. The bank deploys the already existed knowledge about the customers, and the information acquired from the customer meetings. Taking into consideration that those meetings are not directly intended to extract information regarding the product generation procedure, the degree of active participation of Swedbank's customers in the new product development concept is low.

In addition, similarities occur in the deployment of customer knowledge for the design of the business processes and the improvement of customer service. Both organizations support that they are utilizing their customer knowledge, aiming to the understanding of the client's needs, the more effective service and, consequently, the achievement of customer satisfaction. SEB's and Swedbank's business processes seem to adjust to the customer's preferences, which are revealed from the combination of customer data processing and customer suggestions or complaints.

Finally, both organizations are deploying customer knowledge for product communication and promotion purposes. Specifically, SEB's strategy is to deploy the generated customer knowledge in order to promote its products in a more focused way. In accordance, Swedbank's foremost purpose of utilising its customer knowledge is to offer and promote the right products to the right customers. The difference exists in the customization of the offerings, where SEB is trying to personalize the products in relation to its knowledge about the individual. On the other hand, Swedbank describes the use of its customer knowledge in order to determine which of its products should be tailored to each customer.

Cross-case analysis of the relation between SEB’s and Swedbank’s methods regarding the variables connected to customer knowledge deployment is summarized in Table 6.9.
### Table 6.9: Summary of cross case analysis with regard to deployment of customer knowledge

<table>
<thead>
<tr>
<th>Deployment of Customer Knowledge</th>
<th>SEB</th>
<th>Swedbank</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Customer portfolios</strong></td>
<td>The company is creating a customer portfolio, which determines the customer value and the attitude towards its client's. The distinction between individual and institutional customers resembles the main categorization in that portfolio generation. SEB assesses the importance of its customers for the organization from their transaction history and decides its reactions in order to maintain or strengthen the relationship with those particular customers.</td>
<td>Apart from the transaction history of the client's, Swedbank's IT infrastructure calculates the profitability and risk that a customer resembles for the organization. This information combined with the life time value of the customer, provides the company with a sophisticated method of customer portfolio generation.</td>
</tr>
<tr>
<td><strong>Building segments</strong></td>
<td>The organization segments its customers based on demographic data and other factors. Specifically, the company repeatedly refers to the segments and groups of customers that contribute to the more productive and customized service supply. In addition, SEB directly admits the deployment of these segments in order to understand the typical behaviours of customer groups, through the observation of their patterns.</td>
<td>Part of the customer portfolio creation is the customer base segmentation for Swedbank. The bank segments its customer based on age, income and profession, as well as, from different factors and aspects. The purpose of the process is to provide the bank with a more sophisticated and focused way of serving the customer.</td>
</tr>
<tr>
<td><strong>New product development</strong></td>
<td>The new product development process is a strategic one for SEB, as the company has a relative department to concern with such issues. This department relies a lot on the knowledge acquired from the customers, which experts are analysing and integrating into the new product development process. The procedure attempts to translate this information into a new product or the improvement of the existed ones.</td>
<td>The company has New Product Development departments throughout the organization that concern with the understanding of the market's future needs. Customer data from the organization's warehouses, as well as, from other sources are integrated in order to be analysed and provide the company with the appropriate knowledge. Then this knowledge provides the clues for the new product development or the improvement of the existed ones, in order to meet the customer's future needs.</td>
</tr>
<tr>
<td><strong>Business processes and customer service</strong></td>
<td>The company is actually utilizing its customer knowledge to better serve its client's and achieve customer satisfaction. Understanding the customer's needs and behaviour through the observation of his/her past interactions with the organization, is the way for the bank to become proactive to their future needs. Thus, the</td>
<td>it is directly admitted that the company deploys this knowledge to provide better services. Part of this procedure is the information acquired in the customer meetings, where the employee attempts to capture and store the client's complaints, suggestions and perception of the bank's services. This data are processed in order to provide the insight and the clues for the</td>
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### Deployment of Customer Knowledge

<table>
<thead>
<tr>
<th></th>
<th><strong>SEB</strong></th>
<th><strong>Swedbank</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Marketing communication and promotions</td>
<td>company attempts to customize its products for the customers, according to the knowledge it has regarding each individual. The bank's strategy is to deploy the generated customer knowledge in order to promote its products in a more focused way. This is being achieved through the focus on individuals or groups of customers. In addition, the company seems to have established a sophisticated way of deploying its interpretation of the customer's situation and behaviour.</td>
<td>improvement of the customer service. The aim is to understand the client's needs, serve more effectively and consequently, achieve customer satisfaction. The central Marketing Analysis department is addressing bank’s campaign policy and give some clues to branch level regarding the banks promotion strategies. The aim is to promote the right products to the right customers.</td>
</tr>
</tbody>
</table>
7. Findings and Conclusions

In this chapter answers to the research questions posed in the first chapter will be provided based on the analysis of the data in the previous chapter. First of all findings will be provided on each research question and are followed with specific conclusion. Finally, managerial implications and further research will be suggested.

Synopsis

This study attempted to shed light on application of CKM concepts by modern customer-oriented organizations, in relation to the e-business environment. In particular, the purpose of our research was 'to provide a better understanding of how companies manage customer knowledge in the e-business environment'. Based on this purpose we formulated the three research questions, which we thought would provide us with the insight regarding the CKM procedures. These research questions aimed to explore how companies acquire the right customer data in the e-business environment and how those data can be processed in order to generate and deploy customer knowledge. Indeed, the examination of the two leading Swedish bank's models of managing customer knowledge, through the analysis of the empirical data, served the general purpose of this thesis.

Since CKM theory refers to the application of the concept as part of the company’s main strategies, the empirical data should be collected from the organization's management perspective. Thus, the analysis of the acquired empirical data can provide the researcher with a more holistic and general picture of the CKM models that the examined companies apply. However, the data for the second case study of this thesis were collected from both the Information Resource Management and the Information Strategy and Architecture departments, due to response factors. In order to enhance the quality of the data, we conducted the interview from two respondents’ perspective that were directly involved with the CKM processes. In general, we believe that the respondents provided us with the relevant information, which balanced the quality of the two case studies' contents. Taking the above into consideration, below we are discussing the findings and conclusions regarding each research question with respect to the potential of our empirical data.

7.1 How is customer data, aimed at creating customer knowledge, acquired in the e-business environment?

Nowadays, the Internet gives a unique way of interaction between organizations and customers through computer mediation. This avenue of communication provides the opportunity to modern companies to record every bit of online dialogue, as well as customer behaviour. As our research indicates, the banks' seems to have realized the importance of the Internet capabilities in the concept of understanding the customers and learning from them. Their challenge remains the identification of the different contexts, in which the online customer data could be utilized in order to determine the effective acquisition methods to be used in such a data-rich environment.
In particular, the analysis reveals the dominant trend the banks follow in terms of online data acquisition methods. Apart from the traditional online communication via emails, the banks under investigation are starting to initiate the current trends of online interaction (such as the one to one live conversations via chat rooms) in their data collection processes. Moreover, the viability of the customer data provided from the webpage infrastructures, such as server log file and cookies, is recognized, since one of these banks is already making use of them and the other has recently started to discuss their future exploitation.

Transactions are the dominant online customer data acquisition method of organizations, and especially banks. Accordingly, one of the examined banks was found to be to a large extent dependant on transaction data. More specific, the company has developed its customer knowledge generation procedures mainly based on such customer data. This degree of dependability on transactions contradicts the CKM theories and indicates the application of a concept closer to CRM studies. On the other hand, the other examined bank seems to utilize transaction data in a manner that contributes to the more integrated and holistic interpretation of the customer. This could be translated into a strategic attempt of the organization, to gain a competitive advantage towards its nearly double in size, in terms of financial enormity and market share, rival.

Nevertheless, the above reveals a general low degree of interaction with the customer in the online data acquisition process at present. Online data collection avenues which keep the customer active, such as web based surveys and online community spaces, are not commonly utilized from both organizations. More accurately, Internet community spaces were not used from both banks and web based surveys were used from one of them for customer knowledge generation purposes. Thus, the dynamic incorporation of the customer in the data acquisition process that the CKM theories support, was not confirmed to be assimilated from the examined organizations, in terms of the online channels. On the contrary, higher level of interaction occurs through offline collection methods for both banks.

Finally, we can conclude that the contribution of the e-business environment to customer data acquisition is considerable. Even though the examined organizations were not found to fully exploit the opportunities for customer data acquisition that the Internet provides, it was confirmed that they work towards this direction. The fact that an important proportion of their meeting points with the customer is being held online, motivates their attempt to increase the deployment of these online avenues. Furthermore, our research revealed the complementary role that the online data have in the organizations' effort for knowledge generation. In fact, one of the companies was found to put a lot of effort and research on the identification of the relevant online customer data that will contribute to its knowledge about, for and from the customer. The other bank was found to have already decided that online customer data, adds to its current integrated view of the customer.

Summarizing the above discussion, the main points of our study regarding research question one are the following:
• banks' seem to have realized the importance of Internet capabilities in the concept of understanding the customers and learning from them,

• apart from the traditional online communication channels, the banks are now starting to initiate the current trends of online interaction in their data collection processes,

• one of the examined banks was found to be, to a large extent, dependant on transaction data and the other seems to utilize transaction data in a manner that contributes to a more integrated and holistic interpretation of the customer,

• the dynamic incorporation of the customer in the data acquisition process that the CKM theories support, was not confirmed to be assimilated from the examined organizations, in terms of the online channels,

• the examined organizations were not found to fully exploit the opportunities for customer data acquisition that the Internet provides, but it was confirmed that they work towards this direction,

• our research revealed the complementary role that online data have in the organizations' effort for customer knowledge generation.

7.2 How is customer data processed in order to generate customer knowledge in the e-business environment?

For the successful implementation of CKM concepts, a well established KM infrastructure is a prerequisite. These systems should be efficient enough to translate data into knowledge and adequately effective in order to make this knowledge reachable from all the necessary parts of an organization (Rowley, 2005). As our study indicates, the two banks were found to be equipped with sophisticated KM infrastructures, capable to support their CKM procedures. In fact, the examination of the four steps in the KM process has shown the potential of the applied systems.

To begin with, the two organizations seem to have realised the importance of customer knowledge identification and generation. It has been revealed from the fact that both banks have independent departments dedicated to this purpose. The employees of these departments are responsible to monitor and determine the relevance of the customer data needed for the generation of customer knowledge, which will contribute to the success of the corporation's strategies. This observation implies the banks' attempts to incorporate customer knowledge to their strategical marketing planning.

In addition, the next step the banks follow is the codification and storage of this multiple sourced knowledge in their databases. Here, the contribution of the e-business environment is the highest, since the entire process relies on the companies' IT infrastructures. Equally dependable on the organizations' e-business environment, was proved to be the dissemination of customer knowledge. Both banks are utilizing their intranets or IT systems to spread the
generated knowledge across the organizational boundaries. Generally, the analysis of our empirical data regarding the above steps of the KM process, revealed strong resemblance to the banks' IT infrastructures.

Furthermore, in order to enhance the quality and usefulness of the existing customer knowledge, both organizations were found to consider the feedback providing. Specifically, it was confirmed that the two banks have developed mechanisms and procedures aiming to encourage employees' feedback regarding the usefulness of the existing customer knowledge, as well as the determination of the knowledge which needs to be generated. Moreover, one of the banks was found to attempt a corporation with its external stakeholders for the full exploitation and improvement of its own knowledge. Thus, the examined companies were proved to have incorporated the feedback providing in their customer data processing systems.

Even though the banks' methods of customer data processing have many similarities, differences occur in terms of their knowledge culture. The degree of knowledge culture is not only determined from the parity of infrastructures and procedures, but also from the norms and regulations that rule these systems. In fact, one of the banks was found to have developed norms which were significantly restricting the flow of knowledge within the organization. Collaboration with external stakeholders, in terms of knowledge cross-utilization, was not also observed for the same bank. This degree of knowledge precaution might add to the protection of the company's competitive advantage, but it might also be translated into retard of the full exploitation of customer knowledge. An explanation to this phenomenon could be the organization's large size that provokes lack of trust, increased conservatism and/or inflexibility for changes.

Summarizing the above discussion, the main points of our study regarding research question two are the followings:

- the two banks were found to be equipped with sophisticated KM infrastructures, capable to support their CKM procedures,

- the two organizations seem to have realised the strategic importance of customer knowledge identification and generation,

- the contribution of the e-business environment is the highest to the codification and storage of knowledge in the banks' databases and the dissemination of customer knowledge across the organizational boundaries,

- the examined companies were proved to have incorporated the feedback providing in their customer data processing systems,

- Even though the banks' methods of customer data processing have many similarities, differences occur in terms of their knowledge culture.
7.3 How is customer knowledge deployed in the e-business environment?

CKM's primary goal is to exploit the generated customer knowledge. Through this deployment, companies should attempt to create value for both them and their clients. It is the way for organizations to motivate their customers to share the knowledge residing within them. This will lead to the co-creation of the product with the customers, aiming to create better products, customer satisfaction and, consequently, customer retention. In general terms, the examined banks were found to work towards this direction, for the purpose of achieving a competitive advantage towards their rivals. In particular, the five investigated ways of customer knowledge deployment, provided us with useful insight regarding the applied CKM concepts.

The foremost use of customer knowledge we observed to be applied, was the customer portfolio creation. Here, the two organizations are utilizing their knowledge about their clients to determine their importance and value for the banks. Accordingly, knowledge about the customer is deployed for customer base segmentation, for the purpose of a more focused and effective customer service supply. These two uses of customer knowledge render great value generation for the banks, since they provide them with the opportunity to focus and satisfy the most profitable customer segments.

On the other hand, the deployment of customer knowledge for new product development, seems to equally generate value for both parties. More specific, one of the banks was found to directly acquire knowledge from its customers for such purposes. The other bank was observed to depend more on the knowledge about its customers, in order to generate knowledge from them and utilize it, for new product generation. Thus, the main difference between the two banks lies in the degree of directness of the customer participation in the procedure, which is greater for the former bank. Nevertheless, apart from the different methods for extracting the useful clues from the product or service users, both banks seem to co-create the product with their customers and, consequently, generate value for both parties.

In addition, the two organizations deploy customer knowledge for the improvement of their services, in order to achieve customer satisfaction. Here, the companies are exerting knowledge about and from the customer. The incorporation of such knowledge in the design of business processes is an indication of the co-creation of the products and services according to the customers’ preferences. Thus, it shows the mutual flow of value between the two parties. Furthermore, one of the main goals of customer knowledge exploitation was proved to be the product promotion. The organizations were found to deploy their knowledge about the customers, in order to efficiently communicate their products to the customers. However, difference occurred in the degree of customized offerings, where one bank was confirmed to emphasize more on the personalization of the product features for effective promotion, in accordance to its knowledge about the individual. The other bank, was observed to utilize its customer knowledge in order to determine which of the existing products should be tailored to the right customers. This indicates the former bank’s higher degree of value creation for both parties, in terms of knowledge for the customer.
Summarizing the above discussion, the main points of our study regarding research question three are the following:

- The deployment of customer knowledge for customer portfolio and segments generation, render great value generation for the banks, since it provides them with the opportunity to focus and satisfy the most profitable customer segments,

- the deployment of customer knowledge for the new product development, seems to equally generate value for organizations and their customers. Both banks seems to co-create the product with their customers and, consequently, generate value for both parties,

- the two organizations are deploying customer knowledge for the improvement of their services, in order to achieve customer satisfaction. The incorporation of such knowledge in the design of business processes is an indication of the co-creation of the products and services according to customers preferences,

- one of the main goals of customer knowledge exploitation was proved to be the product promotion. One bank was confirmed to emphasize more on the personalization of the product features for effective promotion, in accordance to its knowledge about the individual. This shows a higher degree of value creation for both parties,

- in general terms, the examined banks were found to work towards the co-creation of the product with the customer in order to generate value for both parties and for the purpose of achieving competitive advantage towards their rivals.

7.4 Implications

The final section of this chapter will provide the study’s implications based on the findings and conclusions.

7.4.1 Managerial Implications

CKM comprises the procedures that concern with the identification and acquisition of customer data, as well as, the generation and deployment of customer knowledge. Accordingly, CKM is the combination of the CRM procedures and the KM infrastructure. Thus, the successful implementation of such a concept from the organizations is to a large extent depended on the parity of these procedures and infrastructures. However, the innovating contribution of CKM to the organizations’ effort to generate value, lies on the philosophy that covers these procedures and infrastructures.

First of all, companies should realize the importance of the dynamic incorporation of the customer in the knowledge generation process. This means that customers should be active in
Findings and conclusions

the data acquisition process in order to provide the organizations with accurate and useful data and information. Thereafter, the main challenge for the modern organizations is to motivate their customers to willingly participate in the process and provide their knowledge. As CKM theory implies and our study shown, this can be achieved through the co-creation of the product with the customer. And that because the personalized products and services equally add value for both parties (companies and their clients) and, consequently, provoke the customers’ participation.

Finally, apart from the incorporation of the customers as a partners of the company and involve them in the generation and deployment of customer knowledge, the knowledge culture of the organization has a decisive role in the success of the CKM concept. Specifically, the company should have developed a knowledge culture that will contribute to the consistent dissemination and utilization of knowledge across the organizational boundaries. This will probably imply the tackling of organizational norms and regulations in order to provide access to the knowledge databases to all the relevant employees. Thus, the organizations should first develop and strengthen their knowledge culture for the full exploitation of the opportunities that customer knowledge provides.

7.4.2 Implications for future research

The dynamic incorporation of the customer in the data acquisition process, the creation of knowledge culture within the organization and the co-creation of the product with the customer for the establishment of a two-way flow of value, were found to be the main factors affecting the successful implementation of a CKM concept. Though the topic is relatively new, research is required to investigate in depth the above factors which influence the CKM success. Furthermore, the fact that little empirical research has been conducted on CKM and that this study concentrates on the Swedish banking industry, provokes and suggests the repetition of this study in other industries. In conclusion, CKM is a new concept and idea that seems to have future as a research topic and modern organizations show interest in its implementation.
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Neuman, W. L. (2003), Social research methods: qualitative and quantitative approaches (5th Ed.), Allyn and Bacon, Boston, MA.


**Websites**

[www.seb.se](http://www.seb.se) (Official website of SEB)

[www.swedbank.com](http://www.swedbank.com) (Official website of Swedbank)

**Annual Reports**

Swedbank’s Annual Report 2005 (in English)

SEB’s Annual Report 2006 (in English)
Appendix I: Interview Guide

Name of the respondent:

Designation:

Division/ Department:

Name of the organization:

Telephone:

E-mail:

**Acquisition of Customer Data:**

1. What is the bank’s strategy of collecting data on customers?

2. What types of data do you collect from your customers?

3. Which of the bank’s division or department is concerned with collecting the customer data?

4. What are the bank’s methods of collecting customer data online?

**Processing of Customer data:**

5. Could you explain the bank’s method of customer data processing in order to develop customer knowledge?

6. Do you share this knowledge inside the organization? In what extent an employee has accessibility in that knowledge?

7. Do you consider an employee’s feedback regarding the usefulness and probably the improvement of existing knowledge?

**Deployment of Customer knowledge:**

8. How do you incorporate the customer knowledge into future strategies for the bank?

9. Do you consider your customers’ knowledge as an important asset of your organization?
Appendix II: Interviewers Guidelines

Acquisition of Customer Data:

As the purpose of our study is to focus only on e-business environment and in literature review it is being found that most common methods of collecting data in e-business environment includes:

*Web based survey:*
  - Send questionnaires online
  - Online interviews

*Online community:*
  - Online forums that customers join as members and provide information.
  - Online bulletin boards
  - Other online community spaces that the company interacts with the customer.

*Transaction:*
  - Customer provides information when they do transactions online

*Server log file:*
  - Provide a profile of searching habits and sequence from specific IP addresses within a website.

*Cookies:*
  - Cookies are used by server side to store and retrieve information on the client side.
  - Each time the client connects through the server cookies may able to identify the clients.

Processing of customer data:

From the literature regarding processing of customer data for generating customer knowledge we found the following guidelines:

*Knowledge Identification and generation:*
  - Determining the relevant customer, process and domain knowledge needed to successfully carry out CRM activities.
  - Generate knowledge by monitoring the activities of customers.

*Knowledge codification and storage:*
  - Converting knowledge into machine-readable form.
• Storing it for future use.
• Archiving new knowledge by adding it to a persistent knowledge repository that all stakeholders can use.
• Mapping the knowledge to appropriate formalism, converting it to internal formalism.
• Storing it in knowledge repository.

Knowledge Distribution:
• Disseminating knowledge throughout the organization.
• Handling request for specific knowledge element
• Knowledge dissemination depends upon the organizational culture and structure.

Knowledge utilization and feedback:
• Enables stakeholders to identify and retrieve relevant knowledge needed for solving a particular problem.
• Utilization of this knowledge may result in additional knowledge that can be abstracted out and stored in the knowledge repository for future use.
• Stakeholders can provide feedback regarding the quality of knowledge stored in the repositories as well as how easy or difficult to search of relevant knowledge.
• Identify new types of knowledge that need to be gathered based on strategic

Deployment of customer knowledge:

From the literature regarding the deployment of customer knowledge to create value, we found the following guidelines:

Customer portfolios:
• Customer portfolio parallels that of the concept of the product portfolio.
• Last date of purchase, the frequency of purchases in store, and the monetary value of those purchases determine the customer value.
• The costs of customer retention may outweigh their long-term profitability to the business.
• One of the uses is to assess from customers level of engagement with the business.

Building segments:
• Personal data, entered on registration forms, is valuable in segmenting customers.
• Segmentation may be conducted on the basis of whether there are children in the family, age, income, geographical location, and a host of other factors.
• These factors can be correlated with transaction data to generate typical transaction patterns for specific segments.
• The business focus on tailoring marketing communication and product development to meet the perceived needs of these segments.
Appendix

**Segment need pattern extraction:**
- Understand the future needs of a customer through the observation of their needs pattern.

**New product development:**
- Transaction data profiles for specific groups can indicate the product lines that are preferred by specific segments.
- Purchase profiles also offer insights into brand, design, quality and pricing choices and preferences, which may impact on decision making in new product design.

**Business process and customer service:**
- Knowledge of customers and their engagement with a business, in terms of its nature, length, and extent can be used to inform the design of the interaction.
- Knowledge of address may offer insights into whether the customer is likely to be able to return goods easily.
- Any record of previous complaints can be use to prioritize complaint resolution for this customer.
- Advice on the product can be tailored on the basis of any records on previous experience of the customer with the product.

**Marketing communication and process:**
- Personal contact details allow the organization to locate and communicate with the customer, possibly through multiple channels, extending to work addresses, mobile phones and the Internet.
- Provide indications of the kinds of products that customers normally buy.
- Allowing a company to target information on promotions, and vouchers to encourage customers to try alternative products.

**Engender customer loyalty.**
- Enforce customer loyalty through what the company knows for the customer

**Innovate existing products.**
- Improve the products or services according to the customers’ requirements and future needs.