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E-banking and Service Quality Online

Master Thesis

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Preface

E-commerce has increased its significance during the last decades and its importance is still continuing to increase. Branches, which have had traditional means of conducting business and interaction between parties have also been influenced by the Internet and gone through many changes. One of these traditional branches is the banking industry, which during the middle of the 1990's started offering banking services over the Internet. The changes lead to that the physical interaction in the bank office environment between the banks and their customers has diminished and been replaced by customers conducting their errands from their homes and businesses. The loss of interaction between the banks and their customers has evoked our interest in the subject of delivering service quality online.

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Abstract

This thesis will present and discuss e-banking of four major banks in Sweden and the provided service quality required maintaining a good relationship to their customers. The thesis is based on interviews with representatives from the four banks and theories from researches within the field. The result from the studies indicate several aspects showing that the interviewed banks have implemented the main part of the theories but may further improve their Internet banks. If banks wish to maintain high service quality online they must put more effort into their e-banks. These statements should be investigated further to assess the most suitable and applicable measurements for each banks specific situation and need. Furthermore should customer surveys be conducted to supplement this thesis to provide a better over view of e-banking and service quality online.

1. Introduction

1.1. Background

Information technology has been one of the driving forces in the changes that have occurred in trade and economy. Global trade is fifty times bigger today than 1950 and it continues to grow.¹ Information Technology, IT, is the use of computer hardware and computer software to store, convert, process, retrieve, transmit and protect information.² Technology has become more accessible, cheaper and easier to use, which has had a significant impact on the world's trade and commerce. With the introduction of the Internet and the World Wide Web companies acknowledged IT as a tool to do business while consumers acknowledged it as not only an opportunity to purchase goods and services but also to obtain information. This has led to the development of the new phenomenon of the 21st century, which is known as the electronic commerce. *“Electronic commerce, e-commerce, is simply any business transaction that takes place via digital processes over a network.”*³ E-commerce is a rapidly growing industry, which has and still changes economy, markets and industry structures. It has also altered products and services and their supply chains, but also consumer behaviour and the labour market.⁴ Many service industries have changed their ways of doing business because of the e-commerce; one of these service industries is the banking industry. Banks have made most parts of their services and business accessible online; this is called e-banking. E-banking provides bank customers with the possibility to pay their bills, take out loans, check their account balances, transfer money et cetera online. E-banking has had great impact on the banking industry and the online competition between the banks has increased. Banks need to develop creative solutions of how to make full use of the new technology and how to provide their customers with high online service quality.⁵ When lacking face to face interaction banks must increase the experienced online service quality among customers in order to attain and sustain competitive advantages and customer relationships.

¹ Andersson, E., 2001:107

² Bergström, E., Jutelius, G., Karlsson, T., Parmenvik, D., 2003:6

³ Trepper, C., 2000:Introduction

⁴ Turban, E., 2004:3

⁵ Credo, 2001:41

1.2. Presentation of a problem

E-banking has changed the traditional patterns of bank operations. These changes in technology, competition and lifestyles all have an impact on how banks operate today.⁶ Originally the customer had to physically visit the bank office in order to carry out banking errands. With the introduction of e-banking customers are saving money and time since they do not have to physically visit the bank office. Every bank realises that they must provide some kind of e-banking to their customers in order to survive.⁷ The benefits that are generated for the banks are, among others, that local offices do not need to focus their resources on transaction based activities.⁸ Instead banks may focus more on guidance based activities since the customers perform the transaction based tasks themselves. Advantages are also that through e-banking banks can better maintain the relationship with customers because with e-banking customers tend to interact more with provided services. Other advantages are that e-banking increases revenues and banks can easily gain competitive advantages through differentiation of banking services and thereby an image improvement.⁹

E-banking has changed the interaction between banks and their customers. Because there is no face to face interaction online banks must provide their customers with a virtual service that is, not only as good as the non virtual, but also counter balance the loss of physical interaction. Good service is referred to as service which creates satisfied customers, thus remaining loyal and talking favourably about the bank and its online services.¹⁰ It is a difficult task and banks have the main responsibility to maintain a good service level online. If banks can not manage to achieve this, they risk losing their customers. According to the Swedish author S. Ekberg online companies in Sweden are focusing on selling their products or services without actually the concern about their customers need. Ekberg also points out that if the company provides desired services a long lasting loyalty is gained.

⁶ Credo, 2001:41

⁷ op. cit.,2001:45

⁸ Turban, E., 2004:99

⁹ ISPO European Commission, 2001:53

¹⁰ Kotler, P., Bowen, J., Makens, J., 2003:16

1.3. Purpose and research question

The purpose of our thesis is to analyse the basic service guidelines between e-banking and their customers. The study will be conducted through interviews with the banks and mapping the provided e-banking services, and be focused on B2B interaction. The analysis is supposed to contribute to the understanding of providing online service in the banking industry.

The intention is to investigate:

- Do the banks work according to theories and studies of service quality or are there some aspects that are forgotten?
- What must banks do in order to give their customers good online service?

The intention is also to contribute to research about banking services online. Furthermore the intention is to contribute with possible improvements or enlightenments about service in the e-banking industry.

1.4. Outline

A study of literature, secondary data, will act as an introduction to each part in order to create a basis for this articles approach, theory, analysis and discussion. In the second chapter is E-banking presented with the intention to create a basis for further reasoning as well as serving as an initial platform of understanding for the reader. We will begin by introducing the Internet history and growth, followed by an introduction of e-commerce, which will give a basic understanding of the technological impact on commerce. Thereafter the development in the banking industry is discussed, giving an overall view of the historical development in the Swedish banking industry. A brief presentation of electronic banking and its development continues the discussion, where the reader will be introduced to E-banking and its development in the Swedish banking industry. The third chapter deals with service quality, both traditional and online, in order to give an additional angle of approach during the analysis. Furthermore, the reader will be able to differ between traditional service quality and service quality in e-banking.

The forth chapter presents the Human Computer Interaction theory with the intention to widen the analysis and provide a better and more clarified result. In chapter five the research design

will be presented with the approach, data sampling and data analysis. The research design has been placed in this order since it will describe the way of how our study has been conducted. During chapter six an analysis, as well as the presentation of the results from the interviews and a following discussion about the analysis and results; will be conducted with the support from the Human Computer Interaction theory but also with the support of guidelines that have been conducted in the studies on service quality in e-banking. In chapter seven will the results, analysis and discussion be presented in a conclusion.

2. E-banking

This chapter will create the basis for the discussion which the thesis is based on. The chapter contains: Internet history and growth, e-commerce, development in the banking industry, Electronic banking developments and E-banking in Sweden. Initially a presentation of the Internet will provide a basic knowledge of the development and its present importance and impact. This is one important force which has contributed to the development of e-banking. Furthermore, E-commerce is introduced with the intention to provide the reader with an understanding of the conception 'E-commerce', which is another force behind e-banking. Following part discusses the development in the banking industry, giving an overall view of the industry. The two remaining parts discuss developments in electronic banking and E-banking in Sweden.

2.1. Internet history and growth

Internet is a structured electronic network by a collection of computers which all are linked together by modem, broadband or telephone line. These computers communicate by using common addressing systems and transmission protocols. Through this mean of communication people from all around the world can get access to Internet.¹¹ Various information and services can be found on Internet and people are using Internet both for work and pleasure. The history of Internet began by the end of 1960's when networks to share files were used within the US military.¹² The US Government's Department of Defense did an experiment where research in networking was conducted.¹³ In the year 1972 the first e-mail was sent and programs for file transferring were introduced within the scientific world. During year 1980 the first international network was established between USA and Europe.¹⁴ Until this year networking was only available for specific professions but now it had also got available for smaller companies and other professions than scientists and the military. Other and easier solutions were added to the network. Companies could now log on the computer and with help of a modem log on to their suppliers systems. It was a one-way communication

¹¹ Dix, A., Finlay, J., Abowd, DG., Beale, R., 2004:178

¹² Fredholm, P., 2002:17

¹³ Dix, A., Finlay, J., Abowd, DG., Beale, R., 2004:118

¹⁴ Dykert, L., Ivarsson, P., Widman EG., 2002:17

but it didn't took long time until this was changed. During the 1990's Internet began to be commercialized and with the introduction of World Wide Web users began utilizing this modern version of networking.¹⁵ World Wide Web is a collection of homepages which are accessible when using the Internet. It is also really easy to use which has increased its popularity among users.

Today Internet is a global phenomenon. Regardless gender, race, disability, Internet is used all over the world.¹⁶ Internet is a huge success and it is constantly growing. Since 1990 the number of users has increased rapidly and different services have been developed on the Internet. Today almost every medium- and large sized organization in the world has its own webpage. Even small companies have realized the importance of having their own webpage. In the beginning popular activities on the Internet were online chatting and writing e-mails. Today the World Wide Web also offers a wide range of information and services online. One popular trend that was developed on the Internet in the end of 1990's and still continues to grow for every year is e-commerce.

2.2. E-commerce

E-commerce is the major worldwide distribution channel for goods and services.¹⁷

It has many definitions, but in conclusion, it is any business transaction conducted via digital processes over the network.¹⁸ This means that e-commerce not only consists of selling and purchasing of goods and services over the Internet, it also consists of marketing, distributing and servicing products and services over the Internet. E-commerce affects a great part of the world and has a huge impact on people and business but also various professions.¹⁹ It is a growing industry; however, it took almost 40 years until it was adopted by the market. By the end of 1990's e-commerce was something that every company wanted to be a part of. E-commerce was a success for every business that joined the online family, but with the success came also failure. Many companies that were dedicated to the online business began to fail in the end of 1999 and this period was called the dotcom crash. Today there is a discussion about

¹⁵ Fredholm, P., 2002:18

¹⁶ Dix, A., Finlay, J., Abowd, DG., Beale, R., 2004:179

¹⁷ Turban, E., 2004:3

¹⁸ Trepper, C., 2000:Introduction

¹⁹ Turban, E., 2004:Preface

why some companies failed in the end of 1999 and most scientists agree that the reason for the dotcom crash was because many companies were not ready for online business. Many businesses went online because of the great tales of fame and fortune that circulated about e-commerce. Furthermore the technology was not ready yet for handling the rapid expansion of e-commerce. Organizations that joined e-commerce with specific, realistic and measurable goals and objectives avoided this failure online.²⁰ The future of e-commerce looks promising and profitable; almost every company around the world, weather small, medium or big, either has its own webpage or does business online. Not only companies are frequent users of e-commerce but private customers are also starting to use the Internet more and more to make their purchases online. During year 2005 Swedes have made totally 5, 7 million purchases online.²¹

The American author Charles Trepper suggests that e-commerce can be analyzed with the help of Michael Porter's Competitive Forces Model. He points out that the model gives a good description of the requirements from many sides (customers, suppliers, competitors etc) which all have positive or negative effects on an organization.²² The Competitive Forces Model shows that there are many factors within industries that decide the intension of the competition and the level of profitability that companies can obtain. The model is used successfully within businesses analyses and contains five key competitive industry forces: *entry barriers, consumer bargaining power, supplier bargaining power, substitutes and industry competitors*.²³ Figure 1 will summarize the Competitive Forces Model within the online business.

²⁰ Trepper, C., 2000:Introduction

²¹ Statistiska Centralbyrån, date of access 2006-03-30

²² Trepper, C., 2000:84

²³ Porter, M.E., 1996:19

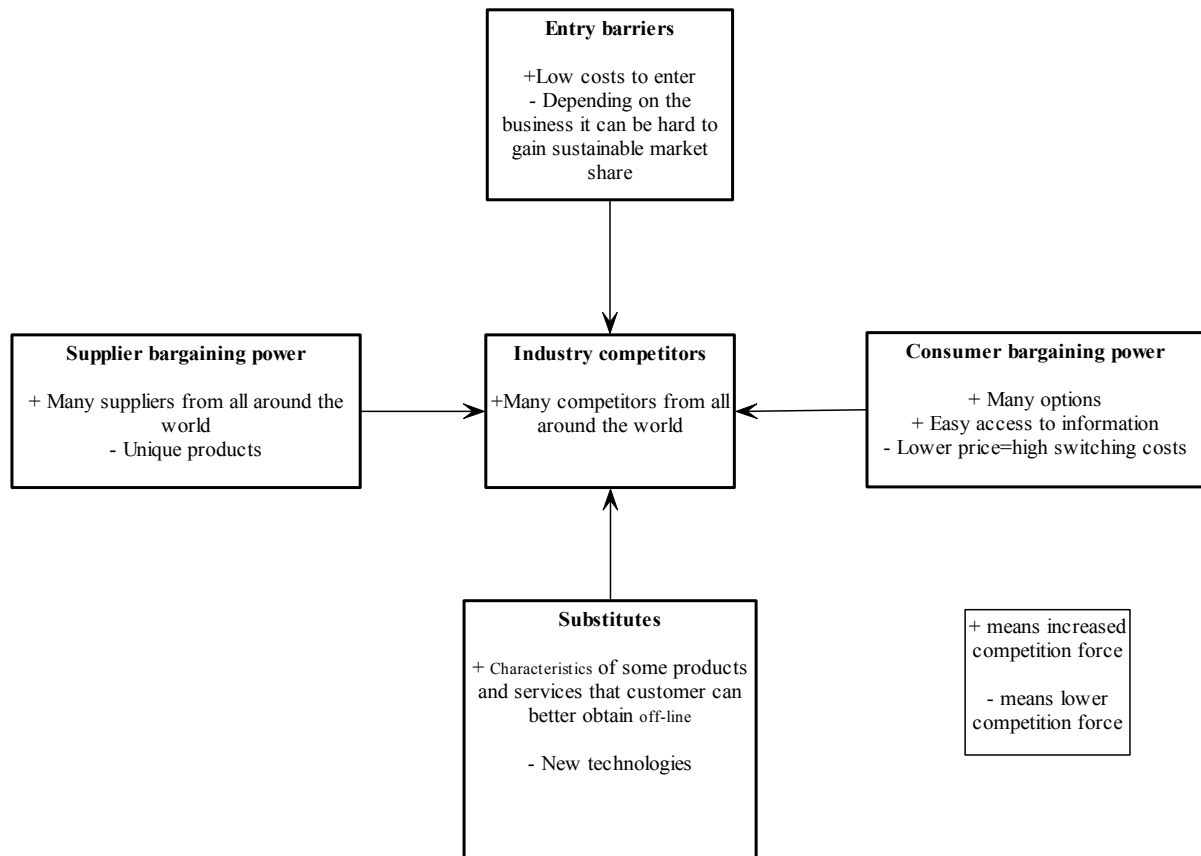


Figure 1. The Competitive Forces Model

Entry barriers discuss what companies, which are about to enter the market, are facing and their impact on already existing companies. It also discusses the already existing companies and their situation when they are developing new services or products to sell online. Because these potential entrants are attracted by the possibility to earn money, their establishment will lead to capacity increases which will force prices to fall and the level of profitability to decrease.²⁴ It is neither difficult nor expensive for companies to have their own websites or even to do business online. Many costs are reduced when companies make their business online; costs for printing, storing, distributing, creating, processing et cetera. But just like offline business, the online companies may face bankruptcy. Entry barriers can be high but at the same time low online, depending on the market situation and of a company's internal situation. Every company may conduct business online but it is not everyone who can survive. For example with e-commerce companies can increase its market share quickly and if they do that the entry barriers would be high for other companies within the same industry.²⁵

Consumer bargaining power online can be relatively high since there are more alternatives

²⁴ Porter, M.E., 1996:28

²⁵ Trepper, C., 2000:85

online. During one hour consumers can visit many companies and find a wider variety of products and services, it is also easier to access information. Consumers can easily find information about products and even compare different products before they make their purchases and transactions online. To reduce consumers bargaining power companies online can easily, compared to companies' offline, lower prices which can increase customer's switching costs (it will cost them more elsewhere) and will thereby have less bargaining power.²⁶ Therefore it is important to add value to the products like price, quality, extra service, improved experience et cetera. *Supplier bargaining power* can be considered as neither high nor low. Suppliers who are dealing with e-commerce can easily, just like customers, come in contact with other companies. Because Internet is available 24 hours per day and 7 days per week as well as worldwide suppliers can easily reach their collaboration partners. However, this also means that companies can easily find other suppliers all around the world and this lowers suppliers bargaining power. Due to the great development in the technology goods can be shipped all over the world efficiently and rapidly. To have business in USA and suppliers in China is cheaper and cost-effective for example companies with stores in the US and production in China. Therefore local suppliers' can't compete with these lower prices and their bargaining power is relatively low. Suppliers can gain high bargaining power if they deliver unique products or services.²⁷ This also applies for businesses in general and not only for e-commerce. *Substitutes* are similar services that can be offered offline instead via the e-commerce. For example books and films can easily be bought online because they are cheaper and also because consumers do not need to feel, taste or even try these products. Other goes for clothes, consumers usually wish to try them before buying. Shopping online is growing but still if the same sweater can be found in the shop nearby people will visit the store so they can try it on and then buy it. But e-commerce is constantly renewed and many companies who are selling goods online are trying to customize and personalize their products so that customers can virtually try them on. In summary there are many substitutes for the e-commerce but the question is for how long? With the constant development in technology, companies online will always find alternative ways to compete. The last force in the Michael Porter's model is the *Industry competitors*. Companies online are competing with marketing and the technical innovations.²⁸ Because of the global reach e-commerce is available to people from all over the world. This means that all the companies on the Internet

²⁶ Trepper, C., 2000:85-86

²⁷ Porter, M.E., 1996:46

²⁸ Grant, R.M., 2005:78

are competing with each other regardless of location. The competition online is high and there is constant ambition about customers loyalty.

Before companies decide to be a part of e-commerce they must have well developed strategies. The growth of services in the e-commerce has been huge since the beginning of the 21st century. One of the most successful investments, in the field business-to-consumer, on the Internet is e-banking.²⁹

2.3. Development in the banking industry

The development of the financial markets is changing fast and the technology is playing an important role in this development. In the beginning of the 21st century almost everyone went to the bank offices to carry out their banking errands, however today this has changed.³⁰ Therefore let's return to the 1960's where the changes begun and discuss the development in the Swedish banking industry. The first wave of investments made in the banking industry included terminal systems and online connections, which were done during the 1960's. The reason for these investments was increased volumes of transactions, due to salaries which now were transferred directly from the employers account to the employees' bank accounts. This changed the customers' relationship to their bank and intensified it as well. Since the customers no longer needed to physically visit the bank to loan money or pay bills, the customers spent less time conducting banking errands. Earlier customers had savings accounts but now these have transformed into transaction accounts. Furthermore transaction accounts saves time and money for both customers and for banks.

During the 1970's several new terminal systems were installed in Swedish banks; which also were more modern since they were connected to central computers, in other words online-systems. There were several advantages with these new online-systems, such as each transaction was entered in the central computer while the clerk executed the service at the bank office and the clerk had access to the current status of the account. Routines that now were managed through the new terminal systems were the huge volumes of transactions, which were deposits and withdrawals. Later on during the 1970's were securities and depot

²⁹ Fredholm, P., 2002:74

³⁰ Bank Technologies Group, 2001:37

services computerized but were not yet managed by the new systems. Regarding foreign payments several banks also connected to the international network called SWIFT (Society for World Wide Interbank Financial Telecommunication). The reason for these systems was to ease the workload by automatizing, and lowering the used time for carrying out existing tasks. These investments gave result, SE-banken (later known as SEB) conducting a survey of the productivity effects and concluded that the workload increased with 20 % during the period 1976-1980, though the number of employees decreased with approximately 8 %. The increased transaction volumes and that both training and adaptation to the new system among the employees took time are reasons why the decrease of employees was not greater.³¹

Already during the 1980's the banks were realizing the Internet's potential and its future significance. Morgan Abrahamsson and Lars O Grönstedt at Svenska Handelsbanken gave in 1985 this statement: *"The electronic revolution comes to banks in two areas – the way we communicate with customers and colleagues, and the way we internally enter, transmit process, store and combine the information flows that are the core of all banking business."*³²

The second wave of investment in information technology was due to the fact that the systems from the 1970's were beginning to get out of date. Computer technology underwent significant developments; new technological achievements such as the microprocessor and personal computers contributed greatly. Furthermore, other reasons were that the transaction volumes continued its increase and the changed demand of financial services among customers. Among the private customers especially the interest of new forms of savings, funds and stocks, increased. The businesses became more internationalized and required services that reflected this strategic development, such as effective mediates of payments to foreign countries and competitive loans in foreign currency.³³ The two main purposes for the investments in information technology were first of all functional integration. By the introduction of new terminal systems during the 1980's several of the special systems developed since the 1970's were integrated. The result for the employees was better overview and increased access to information and means for analysis. Secondly, the banks were able to lower the amount of routine transactions by develop and spread cash dispensers and telephone banks.

³¹ Appelquist, J., 2005:104-108

³² op. cit.,2005:101

³³ op. cit.,2005:109

The third wave of investments occurred during the 1990's and was characterized by the transition from the system with large main computers and terminals to personal computers functioning with local networks and, most important of all, the introduction of banking services through the Internet. The reason for these changes was the development of more advanced hard ware. During this period several banks changed from terminal systems to systems based on personal computers, which were gradually replaced when new more powerful models came.

Both private customers and employees now begun using the services and perform tasks with help of networks, internal and external. The employees were able to attain internal information material, instructions, access to various databases and analysis tools for handling information and so on. The Internet banks private customers were able to perform tasks such as attaining information of their own account and loans, pay bills, transfer money between accounts, buy and sell funds and stocks and attain information of the banks different products.³⁴ Very soon Internet based banking services were also available to businesses; the reason for the delay was that the business situations were more complex. Authorizations were required in order to control who was acting as the representative for the business while performing various banking tasks, e.g. such as transactions. When the problem was solved there was a rapid development, as many as 43 % of Handelsbanken's business customers utilized the Internet bank services after only two years in operation.³⁵

2.4. Electronic banking developments

*"E-banking, also known as Internet banking, cyber banking, virtual banking, online banking and home banking, includes various banking activities conducted from home, business, or on the road instead of at a physical bank location."*³⁶ According to a study done by IBM e-banking represented approximately 5 percent of transactions total volume in the USA and Europe. Furthermore the study shows that Internet will become the primary delivery channel

³⁴ Appelquist, J., 2005:118-120

³⁵ op. cit.,2005:122

³⁶ Turban, E., 2004:99

for financial services within 10 years.³⁷ This means that e-banking is something that all banks need to adapt to in order to remain competitive on the market. Banks must clarify how to make the best use of the technology and how to ensure that the other banks do not surpass them. Tony Nicholls, manager at Barclays, states that banks must have more of everything to be able to compete on the market. They must have more information, faster communications, instant query resolution and an accessibility that is 24 hours per day – 7 days per week, for all relevant services.³⁸

In order for customers to use their banks online services they need to have a personal computer and Internet connection. Their personal computer becomes their virtual banker who will assist them in their banking errands. Examples of e-banking services that customers can get online are:

- Attaining information about accounts and loans,
- Conducting transfers amongst different accounts, even between external banks,
- Paying bills,
- Buying and selling stocks and bonds by depot,
- Buying and selling fund shares³⁹

These services that are offered by e-banking are changing and being improved because of the intense competition between the banks online. Banking industry must adapt to the electronics age, which in its turn is changing all the time. *“Customers demand it. Economics drives it. Banks must exploit it.”*⁴⁰

The increased usage of e-banking services has obvious advantages; the e-banking customers receive a better general view of their banking errands. The customers may also in an easier and more efficient way manage their everyday economy without visiting the bank office. Banks online are open 24 hours per day – 7 days per week, which means that customers can easily gain access to their banks online. Because e-banking is more cost effective for banks customers are offered lower fees or no fees at all when using e-banking. Furthermore, studies also show that e-banking customers become more active and perform more banking errands. Customers have better control over everything that is occurring on their accounts. They can

³⁷ ISPO European Commission, 2001:53

³⁸ Credobank, 2001:41

³⁹ Womensfinance, 2001:21

⁴⁰ Bank Technologies Group, 2001:37

see conducted or upcoming payments or transactions that are made and they may also see history statements about performed payments and transactions. The drawbacks with e-banking are mainly depending on the technology; to get access to their e-banking customers must have a personal computer and Internet access. The technology must also work because if it does not do that customers can not use their banks online services.

The bank also receives advantages, the distribution and production of banking services may become more efficient. In the long run the increased Internet usage results in lesser dependence of traditional bank offices and may be replaced by offices that primary focuses on guidance and sales.⁴¹ Surveys and financial reports have proven that e-banking is the future in the financial sector. One of the benefits that banks experience when using e-banking is increased customer satisfaction. This due to that customers may access their accounts whenever, from anywhere, and they get involved more, thus creating relationships with banks. Banks should provide their customers with convenience, meaning offering service through several distribution channels (ATM, Internet, physical branches) and have more functions available online. Other benefits are expanded product offerings and extended geographic reach. This means that banks can offer a wider range and newer services online to even more customers than possible before. With e-banking customers who live far away can, just like to those who live close to the bank, get access to e-banks. The benefit which is driving most of the banks toward e-banking is the reduction of overall costs. With e-banking banks can reduce their overall costs in two ways: cost of processing transactions is minimized and the numbers of branches that are required to service an equivalent number of customers are reduced. With all these benefits banks can obtain success on the financial market. But e-banking is a difficult business and banks face a lot of challenges.

Challenges that are pointed out in Batos et al article, is that e-commerce is a part of e-business and its goal is to produce profit by numerous activities based on principles of buying and selling.⁴² They also reason that e-commerce is strongly related to information technologies, as well as telecommunication technologies. However, even though the banking industry is a fast growing industry, it is facing the challenges of electronic commerce business.⁴³ There are also security challenges which means that banks always must be ahead of the technology to protect

⁴¹ Nilsson, C., Bankföreningen, Banker i Sverige - Faktablåd om svensk bankmarknad, 2005:10

⁴² Batoš, V., Fertalj, K., Kalpić, D., 2003:107

⁴³ op. cit.,2003:107

their customers accounts and be prepared if any eventual failures will happen. Other challenges that banks face when dealing with e-banking is the usability of their web pages. This will be further explained in chapter four. Service quality is the toughest challenge for e-banking. Due to the intense competition on the market and the basic similarity of the services banks must differentiate their services. Online services are customized but many banks are starting to personalize the services.

2.5. E-banking in Sweden

According to the Swedish Bank association customers are using e-banking to higher extent than most customers in other countries.⁴⁴ In August 2004 the total amount of Internet bank users was estimated to be 2, 7 million, about 30 percent of Sweden's population, which means that Swedes were the most frequent users of bank services in the world.⁴⁵

The reason for this could be that the Swedish banks are the best in the world regarding banking services by Internet. All major banks in Sweden are offering the possibility to use the Internet based services, e-banking, to attain information about accounts and assets, perform various payments and buy or sell stocks, funds and securities. Businesses have been able to conduct banking errands by Internet for quite some time. The Swedish banks have, in comparison with banks in many other countries, a large number of consumers using e-banking. Sweden belongs to the group of countries in Europe which has the highest number of Internet users. The number of Swedes who pay their bills online has risen from 9 percent during year 1999 to 53 percent during year 2005. An important reason for this position is that the Swedish banks have since the middle of the 1990's made huge investments in developing both consumer friendly and efficient e-banking services. Another explanation is that a fairly large amount of the Swedish homes, just above 70 percent has access to computers and Internet.⁴⁶

During year 1996 the first e-banking services were launched in Sweden and the initial ranges of services were limited. However, combined with several developments, such as increase breadth of services and increased number of Internet users, the amount of customers have

⁴⁴ Bankföreningen, date of access 2006-03-27

⁴⁵ Danielsson, L., Computer Sweden, date of access 2006-03-27

⁴⁶ Nilsson, C., Bankföreningen, Banker i Sverige - Faktablad om svensk bankmarknad, 2005:10

increased greatly. By the end of year 2004 the banks had more than 5,3 million e-banking customers. Considering that Sweden's total population is approximately 9 million that indicates a high number of e-banking usage and potential. However it must be pointed out that some of these users are customers at more than one bank. Accordingly to the Swedish Bank association 40-45 percent of the Swedes are using Internet as the primary communication channel to their bank.⁴⁷

The number of customers utilizing Internet based services in the Swedish bank industry continues to increase steadily. Since the first launch of Internet bank services in year 1996 the number of private consumers and business customers has increased every year. During year 1999 the total number of Internet bank customers exceeded 1 million users. Six years later, during year 2005, annual increase of private consumers was 10, 3 percent and business customers 12 percent. Total number of Internet bank customers reached 5, 8 million respectively 624 000, giving the number of totally 6, 4 million Internet bank customers.⁴⁸ The bank which has the most Internet bank users, in Sweden, is FöreningsSparbanken with more than 1, 8 million private customers. The second biggest is Nordea with nearly 1, 6 million private customers in Sweden. Nordea has the most business customers with Internet bank agreements, 228 500 by the end of year 2005.⁴⁹ Competition online is intense and banks need to obtain good service quality to keep their customers using their services online and not choosing another bank.

⁴⁷ Nilsson, C., Bankföreningen, Banker i Sverige - Faktablad om svensk bankmarknad, 2005:10

⁴⁸ Bankföreningen, date of access 2006-03-27

⁴⁹ Ibid

3. Service quality

This chapter emphasizes on the service quality from measurement and e-banking perspectives. The reader will be introduced to the conception 'service' and its characteristics. Furthermore, SERVQUAL and its importance for studies within service quality are discussed. The last part in this chapter deals with studies that have been conducted on service quality in e-banking. The studies contribute with dimensions supporting the upcoming theory.

3.1. Service and its characteristics

Banks are investing a lot of money on web technologies and are therefore expecting numerous benefits on their investments. The intensifying competition on today's market has forced banks to seek profitable ways to differentiate themselves. Companies have moved their focus from products and services toward a customer-centered focus as a tool to gain competitive advantages and a great return on already made investments.⁵⁰ The success in these customer-centered businesses is to deliver high service quality.⁵¹ Already in the end of the 1980's researchers were determined that if the companies wanted to succeed they needed to give the development of service quality the highest priority.⁵² The delivery of high service is a challenging task and to provide their customers with high service quality companies must know what their customers want and need. Because of factors that are unique to services, companies face difficulties while delivering service quality: intangibility, heterogeneity, inseparability and perishability.⁵³ Because services are intangible they can not be felt, smelled or tasted which makes it hard for customers to evaluate the service quality. Furthermore, services are not possible to store for later use, they are consumed immediately. Therefore companies need to offer other visible indicators where customers could evaluate the delivered service quality. Services heterogeneity means that services are not produced by single unit and then distributed to customers. This means that the quality of services varies depending on who provides them as well as when, where and how services are provided. With their inseparability services are produced and consumed at the same time. When the customer and

⁵⁰ Lin, CC., 2003:202

⁵¹ Parasuraman, A., Zeithaml, VA., Berry, L., 1988:12

⁵² Gummesson, E., 1993:7

⁵³ op. cit., 1993:29-30

the company's employee interact with each other both are included in the providing of the service. Here the focus is on the employee and the way in which the service is delivered and perceived by the customer will depend on the employee. Services are perishable which means that they are consumed when they are provided and can not be stored. Service has many definitions, one definition has been chosen that describe it in summary: *"A service is something that can be bought and sold, but which you cannot drop on your foot."*⁵⁴ Both managers and academic researchers have in recent years given a great deal of interest in measurement of customer satisfaction and perceived service quality.⁵⁵ Spreng et al (1996) discuss the difference between customer satisfaction and perceived service quality and suggest that these are not the same and that companies need to take both into consideration. This because companies need to know whether they should focus on having satisfied customers or to deliver the maximum service quality.⁵⁶ Perceived service quality is according to Parasuraman et al *"a global judgment of, or, attitude relating to the superiority of the service"*⁵⁷ and this definition can be found in other service literature. The definition of the customer satisfaction has not the same clear definition but Spreng et al use the definition *"an evaluative, affective or emotional response."*⁵⁸

3.2. Gaps analysis

The knowledge of how to measure service quality is of great importance for the companies if they want to succeed on the today's competitive market. The measurement of perceived service quality derives from the Gap analysis, which was originally conducted during the end of the 1980's. The Gap analysis was developed to help managers analyze the sources for quality problems but also to help them in understanding how to improve the service quality. The first gap in the analyses is due to the lack of managers understandings about the perceived service quality. It states that managers have incorrect understanding of what their customers want and need, e.g. because of wrong information from customers surveys. The second gap is about service characteristics not complying with management understanding

⁵⁴ Gummesson, E, 1993:22

⁵⁵ Spreng, R., Mackoy, RD., 1996:201

⁵⁶ op. cit., 1996:201-202

⁵⁷ Parasuraman, A., Zeithaml, VA., Berry, L., 1988:16

⁵⁸ Spreng, R., Mackoy, RD., 1996:202

and customers' expectations. This may arise due to lacking communication inside the organization and lack of clear organizational goals. It is due to the fact that the specific quality is not fulfilled during the production and deliverance of the service. This gap usually occurs when the employee and customer interact. It occurs because employees are not ready to deliver the good service quality or that the quality characteristics are not agreed upon within the organizational culture. The fourth gap deals with problems within the marketing communication. Therefore it is important to always give customers appropriate and correct information.⁵⁹ The analysis simply describes how the gap between expected and perceived service quality arise from these four gaps while the difference between the delivered and perceived service by customers is the fifth gap.⁶⁰ The goal for companies should be to minimize all the gaps as much as possible. The bigger the first four gaps are, the bigger the fifth gap will be. This means that the perceived service quality will be low and companies could fail in delivering high service quality. Because of the Gap analyses Parasuraman et al designed SERVQUAL, a multiple-item scale for measuring service quality.⁶¹ The instrument has been used a lot within the service literature and as a basic tool for companies in measuring the perceived service quality.

3.2.1. SERVQUAL- service quality measurement

As mentioned earlier the main difficulty with service quality is that it is hard to measure. According to the Finnish author Christian Grönroos, many of these studies derive from the same point that service quality is experienced from a comparison between anticipation and experience with consideration to a couple of quality attributes.⁶² SERVQUAL is conducted from Gaps analysis and a study of five different business and four dimensions form this instrument: *Tangibles, Reliability, Responsibility, Assurance* and *Empathy*.⁶³ Tangibles are about the physical facilities that companies have, including the appearance of the employees. The customer must feel that the company and the employees want to help and solve their

⁵⁹ Grönroos, C., 2002:116-120

⁶⁰ Parasuraman, A., Zeithaml, VA., Berry, L., 1991:337-338

⁶¹ op. cit.,1991:420

⁶² Grönroos, C., 2002:86

⁶³ Parasuraman, A., Zeithaml, VA., Berry, L., 1988:23

problems.⁶⁴ Reliability shows that the employees show that they can dependably perform their service and customer attain and sustain their trusts in the company. Responsibility is when the company is willing to help customers and provide them with the best service. Assurance is when company's employees are containing knowledge and with their ability inspire trust and confidence to customers.⁶⁵ The last dimension is Empathy and this shows that the company is giving the customer attention and caring.⁶⁶ The SERVQUAL measurement can be accepted as a traditional way of measuring the perceived service quality and is a basic skeleton of underlying service quality; therefore it needs to be used in its entirety as much as possible.⁶⁷ Parasuraman et al concur that SERVQUAL is universal and can be used across all services. This has received a lot of critics and many researches within the service quality field have concluded that the instrument can not directly be applied to studies of the online service quality. When considering the last dimension Empathy and then studying the interaction between the customer and the computer there is no Empathy and therefore companies' can't really take this dimension into account when measuring the perceived service quality online. SERVQUAL is a good service quality instrument when measuring and studying an organization which is not providing services online. In this study e-banking is merely about online services and therefore this instrument is not an appropriate instrument of measurement. It is important to note that much of the research that has been performed about service quality is deriving from SERVQUAL. Many of the dimensions that construct the instrument are adapted to the other instruments of measurements. Technology, which is the major force in shaping the buyer-seller interaction, is having an impact on the service quality. Within the e-banking, banks need to focus their attention on customers and to understand customer's attributes which they are using to judge service quality.

3.3. Service quality in E-banking

Because Internet is still a new transaction channel banks do not exactly understand what service is desired from customers.⁶⁸ Banks are investing considerable amounts of money to

⁶⁴ Grönroos, C., 2002:87

⁶⁵ Parasuraman, A., Zeithaml, VA., Berry, LL., 1988:23

⁶⁶ Kuo, T., Lu, I-Y., Huang C-H., Wu, GC., 2005:310

⁶⁷ Parasuraman, A., Zeithaml, VA., Berry, LL., 1991:445

⁶⁸ Yang, Z., Jun, M., Peterson, T R., 2004:1150

develop efficient communication channels to their customers.⁶⁹ But without understanding how to give their customers satisfying, high quality online experience they are not going to realize the benefits of made investments.⁷⁰ Because of the lack of face to face communication they need to focus on creating good web based service quality. In the beginning of the 21st century customers perceived the web based quality as inferior.⁷¹ Since then banks have made enormous investments to improve their web pages and provide their consumers with good service quality online. Technology is having huge impacts on the service quality and consumer satisfaction levels. Many researchers believe that customers have better service perception of technologies at use than the employees. They mean that when customers are in the direct contact with the technology they have greater control, tasks are performed efficiently and therefore the service quality will be perceived as good.⁷² These are two important qualities that customers require when using online services. If the online task can not be conducted efficiently and the customers feel that they do not have control over the technology, then the perceived service quality will not be good.

Unfortunately, few studies have been done on service quality within e-banking. A study done by Joseph et al (1999) investigated the service quality within banking industry when costumers are using Internet, telephone or ATM machines. The study has shown that there are six factors when identifying service quality of electronic banking. The first factor is *convenience/accuracy*, where customers want banks to guarantee that all transactions were made safely, they use a program which can be used easily, the customers can come in contact with bank 24 hours per day – 7 days per week et cetera. Second factor is *feedback/complaint management*, where customers want bank to within 24 hours satisfy complaints, bank will have professional appearance online and well educated telephone operator et cetera. *Efficiency* is a third factor and where customers want no waiting time when using banks electronic services, they want also banks to provide them with all necessary training in how to use for example e-banking efficiently. Forth factor is *queue management* where customers, if they need help, when using telephone banking there will be good atmosphere while waiting in line, such as nice music. *Accessibility* is the fifth factor and where customers want bank to be adjusted to people who are elderly, disabled or have other handicap. The last factor *customization* is that customer wants to feel special even when using electronic services. For

⁶⁹ Senger, E., Gronover, S., Riempp, G., 2002:1966

⁷⁰ Kuo, T., Lu, I-Y., Huang C-H., Wu, GC., 2005:310

⁷¹ Yang, Z., Jun, M., Peterson, T R., 2004:1150

⁷² Joseph, M., McClure, C., Joseph, B., 1999:183

example it could be nice to have a special message that appears to customers or even greets them by their name when they enter to use the e-bank.⁷³

Further studies have been done on how to measure service quality within banking industry. Bahia and Nantel proposed an alternative measure in how service is perceived in the banking industry. Their results were inspired by those done by Parasuraman et al (1988) and contained six dimensions: *effectiveness and assurance, access, price, tangibles, service portfolio and reliability*. *Effectiveness and assurance* means that customers should feel safe in using the bank. *Access* is when customers expect the bank to have the latest technology so that they can perform their banking errands efficiently and safely. *Price* is an important measuring instrument and Bahia and Nantel suggest that the price should be reasonable because it is attracting the customer. *Tangibles* refer to the atmosphere of the bank where the effective service environment exists. *Service portfolio* focuses on those services that are offered while *reliability* deals with trustworthiness of the banks from the customer's point of view.⁷⁴

In 2001 one research was conducted on e-banking and service quality by Jun and Cai. They identified seventeen dimensions which all could be divided into three categories: *customer service quality, online systems quality* and *banking service product quality*. Even their studies have been inspired by the SERVQUAL instrument but because of the e-banking special characteristics this instrument has been extended. *Customer service quality* contains dimensions like reliability and credibility, but also communication and understanding the customer. *Online systems quality* is about the security online and a demand of an easy to use e-banking program. *Banking service product quality* is where customers want a variety of products and services that are offered through e-banking.⁷⁵ All studies that have recently been made in the service quality field irrespective the industry have all been influenced by SERVQUAL. What researches have been done is that the model has been a basis for their study but they have extended the model according to the result from their studies.

⁷³ Joseph, M., McClure, C., Joseph, B., 1999:185

⁷⁴ Bahia, K., Nantel, J., 2000:87

⁷⁵ Jun, M., Cai, S., 2001:287-288

3.4 Chapter summary

Banks have become more aware of customers needs and demands, due to the intensifying competition. Therefore are the banks seeking profitable ways of differentiate themselves and their services towards their competitors. Because of unique service characteristics, banks are facing difficulties while delivering service quality. One frequently used instrument in measuring perceived service quality is the SERVQUAL. Though frequently used it has been criticized and due to the fact that it, among others, actually can not be applied to online service quality measurement. Therefore other studies have been conducted to support companies in their measurements and evaluations of service quality online. With the basic understanding of service quality and the measurements that can be obtained, both traditionally and online within the banking industry, it is also important to consider how well designed computer programs and web pages can obtain competitive advantages for the banks.

4. Human-Computer Interaction

The chapter focuses on the theory of Human Computer Interaction (HCI), which is the basis for the analysis later in this thesis. The chapter begins with an introduction of the theory, and is divided into three parts: computers and programs, consumer behavior online and interaction. The theory HCI is successfully used within industries which are providing online services. The HCI theory is followed by a part, customer-web interaction, which becomes engrossed in how to create a good web site that will make customers' online experiences satisfying.

People in the today's modern society are more depended on computers. Soon we will not be able to take out money, pay our bills or even book an appointment at doctors if we don't have a computer.⁷⁶ Computers began to be used in the 1950's and were the province of the specialists. There were two main difficulties with computers. First they were very expensive and large. Second difficulty was that the designers of computers knew very little about how they could develop computers that would be easy to use by everyone. Today computers are a mass consumer product. It is not only high skilled technical people who have access to computers, instead there is a computer in almost every household.⁷⁷ Advances in technology have given new opportunities when using computers. It has also modernized the way that people now interact with computers. Prices of computers are declining for every year and development of faster and easy to use computers is increasing for every year. Designers of computers have a lot work to do before developing a perfect system. They need to create computers and programs that can be used by people from all around the world. For banks to create the perfect program for e-banking is a very demanding and challenging assignment. While using e-banking customer's primer contact is the program that they are using for performing their banking errands. If the user will experience the program complicated then the service quality will also be low. As mentioned earlier, in the studies by Jun and Cai, online systems quality is essential when customers are measuring the service quality when they are using their e-banking.

⁷⁶ Allwood, CM., 1998:7

⁷⁷ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:4

To develop a well designed program for e-banking it is important to think about what happens when customers interact with computers. This theory is called Human-Computer Interaction and is significant when developing different computer systems and programs.

*“Human Computer Interaction is a discipline concerned with the design, evaluation and implementation of interactive computing systems for human use and with the study of major phenomena surrounding them.”*⁷⁸ The theory is about understanding both humans and computers and then analyzing the interaction between these two. Designers of computer systems and programs need to have a lot of information about people who will use those and about the computer and program that will carry out the task that the user wants. Then it is important to understand how these two relate to each other. The designer must understand the user because it is the user who is going to evaluate the service quality. If the perceived service quality will be bad then the customer may switch to the other bank where they can get better online service. Unfortunately there are still very poorly designed computer systems and companies face difficulties when presenting these programs to their customers. When considering e-banking then it is extremely important to have well designed programs. When using e-banking customers should have easy access to their online banks and programs should not be complicated. This is what Human Computer Interaction theory contributes with, to give support to people when they are using computers so that they can carry out their activities effectively and safely.⁷⁹

It is important to establish a fact that Human Computer Interaction is neither a study of technology nor the study of humans but about connection between these two. Therefore must a programmer first ask himself what possibilities the technology possesses when designing a program to the company? But also what the user is doing, what they will do with the program and how will the program fit in their everyday life?⁸⁰ If these questions will not be taken into consideration then program risks to become a big failure. If the bank just designs a program from what technology can offer without considering their customers than there will be problems when the interaction between humans and computers happens. It is the customer who is going to use bank’s Internet services and therefore it is important to know what customer wants and need to experience good service online. Human Computer Interaction should be integrated in every computer science or engineering course to make designers and

⁷⁸ Allwood, CM., 1998:4

⁷⁹ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:1

⁸⁰ Allwood, CM., 1998:42-43

companies realize how to develop well designed systems that their customers will appreciate.⁸¹ Before giving a description of what happens when customers and computers interact it is important to discuss each one of these two and how they function on their own.

4.1. Computers and programs

With the introduction of the silicon chip computers are developed in a way that more and more people can come in contact with them. Computers are faster and larger (in terms of processing power) and their development just continues to grow. These new hardware and software possibilities have also given new opportunities for the Human Computer Interaction.⁸² Computers and programs must be designed in a way that everyone can use them. Many computing systems have been designed with poor interfaces. Today there should be no excuse for poor design.⁸³ At the end the loss will be companies because they have not designed a program that can easily be carried out by their customers. This can have great impacts on company's profits. Poorly designed programs can be very annoying for users. If the users find the program difficult to use then they will probably stop using company's services because of this. But if customers are satisfied then they will use the company's services multiple times. They will also talk favorably to others about their satisfaction.⁸⁴

There are five rules that need to be taken into consideration when designing programs. First is that the program must be *suitable for the task*. If the customers want to make a transaction through e-banking then the program should be well designed for that. Second rule is that the program should be *easy to use* and if possible adaptable for user's knowledge and experience. Especially when dealing with money it is important to have easy to use programs because people of all ages and backgrounds are using e-banking today. Many of the studies on service quality (like those of Parasuraman et al, Bahia and Nantel, Jun and Cai) have showed the importance of easy to use programs. Their studies have confirmed that easy to use banking programs are essential if banks want to offer high service quality to their customers. Rule number three is that the program provides *feedback on performance*. Customer must know if the transaction was made successfully. It is also important that *the program displays*

⁸¹ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:7

⁸² Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:8

⁸³ op. cit., 1994:13

⁸⁴ Kotler, P., Bowen, J., Makens, J., 2003:6

information in a format and at a rapidity that is adapted by the user, which is the rule number four. The last rule is that the program should conform to the '*principles of software ergonomics*'. This is about the layout and physical qualities of the screen. Customer must have a good experience from the interaction depending on the ergonomics of the software too. The program should be designed so that for example the customer can without effort read the text.⁸⁵ This factor has also been confirmed in studies where researchers have found that the attractiveness of the website has an impact on the perceived service quality.

Human Computer Interaction has as a primary goal to produce usable, functional and safe systems and programs. "*Develop or improve the safety, utility, effectiveness, efficiency and usability of systems that include humans.*" Programs should be easy to learn and easy to use for the people.⁸⁶ There will always be times when we will experience problems while using computers. If the design of the system is good then it will reduce the number of problems that users experience. That is what brings us to an important part of the design of many systems: provide information so that users can learn to use the program effectively, correct errors that arise and find other kinds of functionality.⁸⁷ These tasks are difficult to attain and the first step is to get to know the customers and how they function so that we can create a program that will suite them. So before designing computers and programs designers and companies should consider following: "**Ask:** *What is the user doing?* **Think:** *What information is required? What comparisons may the user need to make? In what order are things likely to be needed?* **Design:** *Form follows functions: let the required interactions drive the layout.*"⁸⁸

4.1.1. Usability

As mentioned above before designing computer programs researchers need to understand what kind of activities people want to do with help of computers but also how computers should fit and support users.⁸⁹ If we consider e-banking then customer's activities are going to be similar of those that customers are doing in the banks. That is making transactions, checking accounts, paying bills et cetera. Then the programs should be designed after these criteria so that it will be usable for customers. Researches should also consider how the

⁸⁵ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:3

⁸⁶Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:14

⁸⁷ Allwood, CM., 1998:308

⁸⁸ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:211

⁸⁹ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:20

program can support and offer the user an effective system where they can perform these activities. Human Computer Interaction also faces challenges in designing computer systems in terms of heterogeneity among individuals. People are not all the same. They are different in shape, size, cognitive abilities and motivation. All this must be considered before designing computer systems. It is important to develop programs who are flexible and can be used by all individuals regardless their heterogeneity.⁹⁰ For programs to be accepted by customers they need to offer good usability.

The main goal with using computers is that they should be helpful and ease the task user was supposed to do. Except for this computers are also used to increase the quality of users work. We want the computer to increase our productivity. Usability of a computer program is decided by different characteristics in the usability situations and the collaboration of these characteristics. There are four factors who together decide the usability of a program: adjustment, user friendliness, user acceptance and user competence.⁹¹ *Adjustment* means that the functions of the program are designed in a way which follows the structures of the task the user is trying to solve. Banks should have specially designed programs for e-banking that are developed after the organization's culture and after what customers require. *User friendliness* consists of several aspects which all have impact on the human-computer interaction. One basic aspect is reach ability. It is important that the program is reachable to users. If customers want to check the status on their bank before making a purchase then they must be able to reach their e-bank. Another important aspect of user friendliness is that program makes demand on the user which is well-matched and gives support in how the user functions mentally. This means that program should for example not have so much information that the users brain can't handle. That is why it is important to have basic knowledge about how humans use their mind and thoughts. Individualization is another aspect that contributes to user friendliness. Because humans are different it is also important to have flexible systems and programs where users can for example customize how big letters or brightness of colors should be when using the program. The last aspect of user friendliness is the quality of the help systems which users can get. When problems happen user should be able to get help 24 hours every day. *User acceptance* is about how users feel about using the program, how well motivated they are. If the users' doesn't have the motivation for using the program then they will probably never be enough interested to use the program. The last factor of usability is

⁹⁰ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:35

⁹¹ Allwood, C.M., 1998:10

user competence. This means that the users have enough knowledge and skills to have a basic interaction with the computer. The better knowledge the users have, the better they will perceive the program.⁹²

To provide the best online usability for customers, there are three principles that companies should take into consideration. *Learnability*: can new customers without difficulties use our program? Programs should be easy to use even for people who are in first contact with the computer. *Flexibility*: the multiplicity of ways in which the users and system exchange information. Programs should be flexible and this makes them more usable. *Robustness*: support that is given to the users so that they can achieve their goals without difficulties.⁹³ This indicates that accessibility is also an important aspect when providing online service quality.

4.1.2. Accessibility

Accessibility is important in the interaction process because users must be able to access help whenever using the program. If there is no accessibility then there will be no usability and the program will fail when interacting with the users. All parts of the program must be supported because the designer can't know where and when users will need help. If customers want to use their e-bank in the middle of the night then they should be able to do so without any complications. User support can be provided in many ways to the customers. Help system should be flexible so it can help different customers to solve their problems. Help system should also not prevent users from doing their normal work.⁹⁴

Alan Dix et al have purposed simple guidelines for online communication that banks can adapt to provide great online accessibility to customers in need. It is good to use clear structure with headings to provide signposting. Users should know which line to click on for their specific task. Information should also be organized according to user's tasks. There is nothing worse than complicated help menus. Users should easy follow how to do to solve their problem. Sentences should be kept short and language should be simple. This because it will be used by people of different ages and also nationalities, language should be clear. If the

⁹² Allwood, CM., 1998:10-13

⁹³ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:260

⁹⁴ op. cit.,2004:397-399

language is hard to understand then users will have a minimum chance to solve their problems. The procedure should be in order and the important steps should be highlighted. Help menus like that are easy to follow. There should also be examples where possible. This is an extra service which user will appreciate because it will be not just much easier but also more clear. Help menus should also have support searching via an index, free search, glossary and contents, this way users can solve their problem faster. Help menu should also include a list of error messages and Frequently Asked Questions with clear answers.⁹⁵ This is having an impact on the perceived service quality and therefore if the banks want to provide their customers with the high service quality then they need to take those aspects into the consideration.

4.2. Consumer behavior online

To develop computing systems with good usability and accessibility specialists should understand different factors about people, which will help them to understand how people operate and use computers effectively. These factors can be psychological, ergonomic, organizational and social. They should also develop techniques and tools that can guarantee that computers are going to be suitable for the activities for which people will use them. They should even achieve efficient, safe and effective interaction between individual human-computer interaction and group interaction.⁹⁶ All these mentioned factors have great impact on how humans function and this is a good help when construing a well designed computer program. If the designer has expertise in different topics then they will be able to develop great programs which will provide customers with good service quality online.⁹⁷

Study areas that will help designers in designing good programs which will be adapted by individuals must be given a careful consideration. To understand psychology helps designers in understanding how people behave and the mental process that underlie it. This tells them about people's perception, attention, memory, learning, thinking and problem solving.⁹⁸ Cognitive psychology helps understand how people perceive the world around them, how

⁹⁵ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:402

⁹⁶ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:15

⁹⁷ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:4

⁹⁸ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:39

they solve problems, process and store information, and how they physically control objects.⁹⁹ People are constantly bombarded with different sounds, images, tastes, smells and touches. How can people handle all of this information in a way that makes sense? And how can they cope with all the available information and not get overwhelmed by it? This helps designers in developing well designed computer programs. They need to understand how to get users attention and not to overwhelm them with information. First step to do this is to design an interface which can help users find information and which is easy to navigate through. Second information should be structured in a way that is easy to perceive and able to guide users attention. If recalling e-banking, then if the users perceive at the same time a lot of information and messages when entering the homepage of the bank then there will be very little of the information that they will store in their memory. That is why it is important to leave the basic information that the users need to make necessary activity and leave all the other information in the background. Important information should be well visible so that it attracts users' immediate attention. Less important information should be less visible but users should still know where to find this information. At least information which users' does not need often should not be displayed but they could get in on request.¹⁰⁰

Another study areas that need to be taken into consideration is linguistics and ergonomics. Linguistics helps creating a language that is easy and can be used by individuals all around the world. Examples are words like enter and delete, everyone who has ever used a computer knows what these two words mean. These words are well known all around the world and have become internationally widespread. Ergonomics helps designers to maximize an operator's safety, efficiency and reliability of performance which will make the task easier and increase feeling of satisfaction and comfort when they are using computers.¹⁰¹ Designers must think outside Human Computer Interaction if they want to create perfect computer programs. This because there is other factors beyond this interaction that have a great impact on the interaction. For example the environment where users are can have impact on how they will perceive the interaction. If customers feel comfortable while performing a task then their interaction with the computer will also be perceived without any complications. Another example is interruption, because people get interrupted during the time they are using computers these programs need to be designed accordingly. Computer programs should, when

⁹⁹ Dix, A., Finlay, J., Abowd, G.J., Beale, R., 2004:12

¹⁰⁰ Preece, J., Rogers, Y., Sharp, H., Benyon, D., Holland, S., Tom, C., 1994:99-104

¹⁰¹ op. cit.,1994:40

users are interrupted, provide systematical information about where users were before they got interrupted. This makes it easier for users and they can also do other things during the time they are using the computer.¹⁰² When designers and researchers have considered all the aspects, both about humans and computers, and how these can have an impact on the development of computer programs then they must analyze what happens when these two interact.

4.3. Interaction

Now when we have discussed both computer programs and humans we can analyze what happens when these two interact. During an ordinary interaction between the customers and employees none of the involved parties knows how the interaction will precede; they mainly improvise and adjust to the changing situation. However, when customers interact with a computer instead of an employee, there are predetermined steps, a script, that the customers follow, thus already aware of the upcoming events. The main difference between the human and computer is that it is user (human) who form a goal and not the computer.¹⁰³ The English writer Alan Dix describes the Human Computer Interaction with help of two different models. The first one is called Norman's model, which is given after the English writer Donald A. Norman, and is a seven step interaction process. This model is from the book *The Psychology of Everyday Things* and provides a good overview of what happens when humans interact with computers. This model will be explained from e-banking point of view.

The first step in the Human Computer Interaction is establishing the goal. It is the user that forms the goal e.g. customer decides to make a transaction. The second step is when customers then form the intention. This means that customers logs on to a specific homepage where they know that they can carry out the goal. The third step in the interaction process is specifying the action sequence. Customers are going through the different stages before actually making a transaction. When the customers enter the homepage then they must provide the computer with some information before, for example entering identity or password. Afterwards customers can make the transaction. This is the fourth step and is called executing the action. This is a step where users have given the computer all the needed

¹⁰² op. cit.,1994:105

¹⁰³ Allwood, CM., 1998:8

information and from here computer takes over. Next step, the fifth, perceives the system state where computer is taking all the information and afterwards the sixth step is interpreting the system state and computer is here executing the transaction. The last step in the interaction model is evaluating the system state with respect to the goals and intentions. Here the computer has performed the transaction and customers evaluate it. If the transaction has been carried out the way users wanted then they will be satisfied otherwise users must go back to step number one and make the transaction all over again.¹⁰⁴ If the customers are satisfied they have experienced good service quality online. Otherwise banks must put an effort in designing a program that will make their customers satisfied.

Norman describes this model as an interaction which can be problematic if the language between users and computers does not match. He means that humans and computers do not speak the same language and therefore there might occur misunderstandings. If the computers can not carry out the goal and intentions of users than big problems can arise. Norman describes this in terms of *gulfs of execution* and *gulfs of evaluation*. The gulf of execution is the difference between user's goals and intentions and allowance of these actions by the system. If the system allows the actions that users want to perform then the interaction will be effective. The gulf of evaluation is the difference between the physical presentation of the system and users expectations. If users must put more effort to interpret the presentation then interaction will be less effective. Alan Dix et al (2004) means that Norman's model has been criticized a lot because it is mainly focused on the users and their intentions and doesn't deal with the system's communication. That is way Alan Dix et al (2004) gives an example of another model of interaction framework which gives a more realistic picture of the interaction.¹⁰⁵

The model consists of four major components in an interactive system. These are: the *System*, the *User*, the *Input* and the *Output*. *Input* and *Output* forms together *Interface*. All of these components have their own languages which need to communicate with and understand each other. Interface is between the user and the system and between these two are four steps in communication process. User has a goal and intention which he through the input communicates to the computer. This task must be articulated within the input language. From input the goal is sent to the system and translated into the language of the system. The goal is

¹⁰⁴ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:126

¹⁰⁵ op. cit.,2004:126-127

transformed in the system as described by the operations and must be sent back to the user. From system it is sent to the output and here the user can evaluate if his goal is relative to the original goal.¹⁰⁶

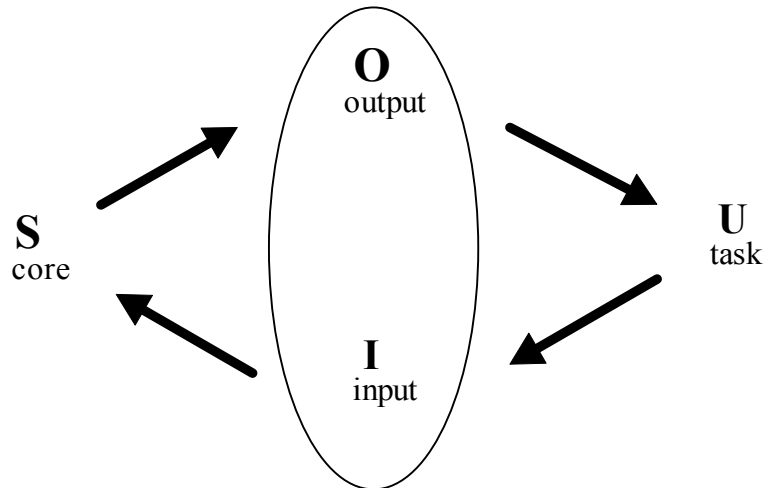


Figure 2. Model of interaction

Human Computer Interaction is a complicated process. It is not that easy to just create computers and programs that all users would and could like. To banks it is very complicated to create perfect e-banking programs. The first step that they need to do is to get to know their users. Alan Dix et al (2004) mean that banks should consider five very important statements before designing a program. First they must ask themselves who their users are? Today people of all ages are using e-banking and it is hard to control your users. They must know who their users are in order to know what kind of program they should design. Second statement is: Your users are probably not like you! Often those who design a program are thinking of what they want and need so they forgot that maybe this is not what the customer wants and needs. Third statement: Talk to your customers. It is important to get to know your customers and their needs. The best way is to talk to them and ask them what kind of system they want. The best is to involve them in the process of designing. Forth statement: Watch them. It is not only important to hear what your customers have to say but also to watch them. Invite your customers and ask them to use e-banking when you are watching then designers can see how customers are using the program. Where do they have most difficulties then designers can solve it and make it more efficient. Fifth statement: Use your imagination. It is not possible to get everything you want to know from you customers. That is way it is important also to use

¹⁰⁶ op. cit.,2004:128

imagination and create programs that need to be adapted for users needs.¹⁰⁷ All the steps that have been discussed in the Human-Computer Interaction Theory have also been confirmed by the studies that are made on within the field service quality. In summary if the banks fail in designing good e-banking programs then they will also fail in providing their customers with good service quality online.

When banks and other companies have analyzed the interaction between humans and computer then they need to analyze how to create a good website.

4.4. Customer-Web Interaction

The challenge that companies experience when they are constructing a web site is how they should do to create a web site that will meet consumer's needs and offer them good service so that the consumers will return. What companies must remember is that customers will not use their web sites if they can not find their way around it. Why should they waste their time sitting on the computer and searching for something very difficult to find? *“Usability rules the Web. Simply stated, if the customer can't find a product, then he or she will not buy it. The Web is the ultimate customer empowering environment. He or she who clicks the mouse gets to decide everything. It is so easy to go elsewhere; all the competitors in the world are but a mouseclick away.”*¹⁰⁸ Companies have to make their web site easy to use and easy to adapt for different customers. Companies have to think from customer's point of view and how they will use the web site. Just like when they are designing computer programs they also need to think from user's point of view when they are construction websites. Often when people are searching for something, they do not put a lot of time reading all text, for most time they actually glance at each new page, and click on the link that grab their attention.¹⁰⁹

To allow customers to understand and see more of web sites, at glance without scrolling, companies must eliminate all words that no one is going to read. Furthermore they have to follow five important points a web site should have to catch customer's attention:

1. It has to be a *clear visual hierarchy on each page*,

¹⁰⁷ Dix, A., Finaly, J., Abowd, GJ., Beale, R., 2004:198-201

¹⁰⁸ Nielsen, J., 2000:9

¹⁰⁹ Krug, S., 2000:21

2. *Take advantage of conventions,*
3. *Break pages up into clearly defined areas,*
4. *Make it obvious what's clickable and*
5. *Minimize noise.*

Following points are described below:

Clear visual hierarchy: The appearances on web sites have to clearly and correctly describe the relationships among the things on the web site. This to make it easy to users to grasp the web site. To do this companies have to use prominence, categorizing and nesting to give users useful information about the contents. *Advantage of conventions:* conventions only become conventions if they work. To make it easier for users to go from site to site without spending a lot of effort figuring out how things work companies have to have well applied conventions. Conventions enable users to figure out a lot about a web page, even if they can not understand a word of it. *Break pages up into clearly defined areas:* to allow users to decide quickly which areas of the page to focus on is it important to break the pages into clearly defined areas. *Make it obvious what's clickable:* users must know where they can click and were not, this because what lots of people are doing on the web is looking for the next thing to click. *Minimize noise:* Different users attend to have varying tolerance for complication and interruptions; some people do not have any troubles with busy pages and background noise, but many do. That's why meaningless information (visual noise) is one of the biggest enemies of easy-to-grasp pages.¹¹⁰

These five important points apply for all companies on the Internet whatever the business is. Because on the web, companies do not just have competitors from the same industry they compete with all other millions of sites and industries out there. Users have a very high expectation often higher than buying a five dollar book from a store nearby. Customers think that if they can get good service when buying a book for five dollar, why should not they get good service when buying for thousands of dollars from your site.¹¹¹

If people are visiting a web site, then they visit it for its content and not mainly to enjoy the design. That's why simplicity should be the aim of all web site design. Design should be there

¹¹⁰ Krug, S., 2000:31-39

¹¹¹ Nielsen, J., 2000:11

to help users access to the content.¹¹² Since consumers are so goal-driven and so impatient contents needs to be much more oriented toward providing fast answers and being useful to the consumers. Therefore, the guidelines for web design must be to get out of the way and make customer successful as fast as possible. There are four criteria which are the base of good web design and which are the things users want the most. These four criteria's are summaries of the acronym HOME.¹¹³

- **H**igh-quality content
- **O**ften updated
- **M**inimal download time
- **E**ase of use

These guidelines are a good base to have a successful web site. Within e-banking a good web site is of great importance because people are not purchasing goods, they are making money transactions. In this case it is important that banks have well designed web sites where customers can navigate easily and do their transactions without complications. Because there is no face to face interaction between the user and the employee banks must put effort on well designed e-banking programs. Otherwise they can't do much more if they want to gain competitive advantages and keep their customers. If the customers are not going to get good service online then they will look for this service somewhere else.

4.5. Chapter summary

HCI is focusing on the interaction between humans and computers and by providing different guidelines, thus helping businesses to design programs which are supporting the perceived service quality. There are two main reasoning which are pointed out in the theory; accessibility and usability. If these are taken into consideration and implemented when designing a program, banks would gain advantages, thus providing better service online. An advantage would be e.g. improved perception of the Internet banks usability, thereby leading to an improved relationship. After the introduction of the HCI theory it is interesting to determine how the results from the conducted interviews are compared to the theory and studies that are conducted within the service quality field. From the HCI theory and the

¹¹² op. cit.,2000:97

¹¹³ Nielsen, J., 2000:380

Service Quality studies six categories were identified: service supply, service accessibility, service security, service usability, HCI theory guidelines and customer-web interaction. The analysis and discussion will be performed according to these six categories. These categories were identified due to the fact that these areas are mentioned as important and suitable for this study. However before the analysis and discussion a presentation of this thesis research design will be discussed.

5. Research Design

5.1. Approach

Four banks were chosen for the thesis, specifically FöreningsSparbanken, Handelsbanken, Nordea and SEB. The banks were chosen mainly because they offer e-banking to their customers, but also dominate the Swedish bank industry. Furthermore were the four banks chosen since they operate at a national level and may also be applied at a national basis. This is pointed out due to that there are several smaller and locally based banks active in limited geographic regions. Due to these factors the four banks were deemed to be enough to attain satisfying information from the bank industry's perspective.¹¹⁴ Interviews were conducted with each bank, where the banks were given open questions about their Internet banks and the services online. The interviews were chosen with the basis of qualitative interviews in order to study e-banking from the banks perspective. The qualitative method enabled the interviewees to express themselves and their opinions with their own words.¹¹⁵ Furthermore were the interviews conducted with starting point from the seven steps of interviewing.¹¹⁶ The banks were approached by telephone where our thesis was introduced and later on were times for meetings agreed upon. The banks received the questions in advance in order to gain a better understanding of our thesis and disposition of the interview. Two of the banks were easier to establish meetings with, while the remaining two banks were more difficult to determine suitable appointments. We contacted local bank offices since our main focus was the provided online services with no face-to-face interaction between the e-banks and their customers. Two of the banks forwarded our questionnaire to their department for Internet supervising due to fact that some of the questions were too technical for them to answer or they did not possess to latest information. One of the banks has experienced great demands from students, who are writing thesis about their corporation, to provide information about their different departments. Therefore has the bank on their web page established specific information about e.g. their Internet banking services. The interviews were carried out by meetings with three of the banks and the interviews were documented by taking notes. Regarding the fourth bank were both parties unable to adapt a suitable time for a meeting. This was solved by carrying

¹¹⁴ Kvale, S., 1997:97

¹¹⁵ Jacobsen, I., D., 2002:39

¹¹⁶ Kvale, S., 1997:85

out the interview per email. One aspect worth mentioning about the option of conducting interviews per email is that the result is not as good as the face-to-face interviews. Even more is the uncertainty of the extent of the effort behind their answers or their reaction to the questions. However the banks kindly cooperated by supporting us in case of any further questions.

5.2. Data sampling

The first step when sampling data were qualitative interviews that were conducted with the banks. To complement the interviews were mappings of the Internet banks conducted. In order to gain a better understanding of the Internet banks services, guidelines given from literature were used to map each Internet bank. By thoroughly investigate each Internet banks services a better understanding was gained. Besides the qualitative bank interviews other studies have been performed where theoretical information has been collected and later evaluated. The intention was also to perform customer surveys to gain an understanding of their opinions regarding e-banking. Originally was the survey planned to be conducted with both private and business customers. However, it was deemed that focusing on the banks perspective in this study was to prefer as an initial stage. It would thereafter be suitable to perform a study with the focus of the customers' perspectives. It would also be possible to conduct a larger study from the customers' perspective with more interviews and relevant theories. Instead the focus was solely on the provided information from the banks. It's important to point out that in the region where this thesis was written is the market dominated by the four large banks, but there are also several, smaller, local banks operating on the regional market. This means that given results from an eventually performed customer service survey would only be applicable to the southern part of Sweden rather than representing the opinions of the national market in Sweden. However, the banks were asked if they were willing to share any information from relevant surveys conducted earlier, unfortunately was this not possible since they considered the information to be confidential.

5.3. Data analysis

This thesis is performed accordingly to a deductive characterisation, meaning that theoretical assumptions are being made and thereafter tested in an analysis of data.¹¹⁷ The most suitable theory was Human Computer Interaction, with supporting service quality measurements.

What the theories states may not always be applicable in every situation. Therefore are supporting service quality measurements, which are based on performed studies of customers' service quality perceptions, imperative for this study as well. Data is examined according to chosen theories in an analytical pattern in order to achieve a solution of the formulated problem. The collected data represents all of the banks that were interviewed in this thesis.

The given answers are deemed as valid since the interviews did not require any further corrections during the writing process. The chosen banks were suitable for this thesis, however if there would have been any possibilities to integrate any information from customer surveys it would be likely that our arguments could be strengthened. Furthermore our arguments could be expanded even further with the knowledge of the customers' opinions of e-banking services. The interviews were conducted with employees whom are high ranking at a branch in Helsingborg. The reliability of the interviews is considered to be adequate and given answers has also been verified by their online information and our own experience of the services. Since it wasn't possible to access any information from the banks about the customers' opinions, the choice was made to research and evaluate the Internet banks by using their online services. Regarding earlier given arguments in this chapter is the conclusion that the conducted means of research are considered reliable since much effort was put into ensuring that the collected data overlaps one another.

¹¹⁷ Rienecker, L, Jörgensen, PS, 2002:160

6. Analysis & Discussion

In this chapter the collected information will be analyzed and discussed by using earlier presented HCI theory with the support of service quality online measurements. Six categories were possible to identify: service supply, service accessibility, service security, service usability, HCI theory guidelines and customer-web interaction. Within each of the categories are the results from the interviews integrated, analyzed and discussed.

6.1.1. Service supply

Every bank stated that they consider everyone using a computer and anyone with an account and conduct payments in any form (including transferring money) or other banking errands as potential Internet bank customers. This point of view is based on the banks way of thinking that the e-banking is a part of a solution to the customers. However, there are no marketing related to the Internet banks, only verbal comments when becoming customers in any of the banks. The interviewees stated that one reason for this is that it is common basic knowledge about Internet banks and that the banks provide Internet banking services. The banks do have leaflets and inform when any interest has been shown by customers. Despite the lack of marketing, stated half of the interviewed banks that they are directly trying to influence their customers switching to e-banking. The other half of the interviewed banks stated that they do not work actively to persuade customers to use the e-bank services; instead they mainly inform the customers of the possibility of performing the desired services by utilizing the Internet banks. The interviewees' mean that since more customers have access to a computer, the customers gain advantages by conducting their banking errands over the Internet. The interviewees also pointed out that since the workload regarding transactions et cetera has increased, the banks would need more employees if they continued to rely solely on bank offices. All the interviewed banks stated that if customers utilize e-banking the management of banking services will become easier for both banks and customers. The banks stated that errands conducted in the bank offices have decreased which have lead to that the banks themselves have developed and now focuses at guidance. The workload in the banks have changed and adjusted accordingly to ensure best possible service to the customers, regardless if they are business or private customers.

It is important to point out though that the banks are taking things for granted when expecting that customers are well aware of the offered services and are not fully in agreement with the actual aspects of e-banking services. If the banks would consider well structured marketing strategies when approaching customers, they may gain important advantages. E-banking itself offers advantages for both banks and their customers, the interviewed banks gives the impression of taking this aspect seriously, however some gaps have been discovered during our study. The banks seem aware of the gaps and are determined to improve their marketing strategies and develop better service quality online. They also seem to consider that e-banking is dynamic, especially the technological development, and they must ensure that their services are up-to-date if they want to maintain eventual advantages with the e-banking system. Furthermore the banks state that because of the increased popularity of the e-banking the competitive advantages could be obtained with the newest technology because that is what the customers' demands today. However, since the majority of the banks customers are using e-banking, they do not consider that marketing towards the rest of the customers will be profitable. The marketing process will be quite expensive since the remaining number of customers not using e-banking is rather low. Another factor affecting their opinion is due to the unawareness of future technological innovations that might affect e-banking. This unawareness leads to an awaiting attitude might lead to that the banks might miss out on competitive advantages, especially if any of their competitors implement any new innovation. One main argument strengthening this opinion is the rapid development within IT during these last decades.

While the historical development has been the same each bank has different opinions about the future development within e-banking. One of the interviewed banks will during year 2006 install a new interface intending to improve the practicability of the Internet web page. Further improvement will be an extended book-keeping function over the Internet, which automatically notifies any occurrences concerning the business's accounts and online files. These measurements are taken by the bank in order to further increase the accessibility and services concentrated activities abroad, e.g. subsidiary companies and WAP related services. Another bank will focus on continuing the development of their Internet bank services, but with a different approach; businesses will soon be able to carry out new errands such as credit information of a potential customer. While these banks focus on developing the Internet banks services' the third bank choose to focus on using the e-bank as a sales channel and as a mean to provide guidance to their customers. The e-bank will also be more customized and

personalized to suit the customers' specific need and demand. However, while these three banks focus on customers' needs the fourth bank is focusing on the technical development rather than expanding their online services. The interviewee also believed that there will be a continuation of the globalisation and an increasing significance of international and free of charge transactions; as well as a global society which is independent of payments with physical resources. The majority of the interviewed banks stated that their focus was mainly to extend their range of services, thus giving them more competitive advantages; e.g. services like account information sent from customer's bank to their cell phone or WAP related services. Banks believe that the demand for new services is necessary in order to provide their customers with good service quality online. This is an opinion that is supported by theories in this thesis.

According to Jun and Cai customers want a variety of products and services from their Internet banking services.¹¹⁸ This is the third category of their study and the measurements are within the banking service product quality. The study showed that the interviewed banks offered the same basic services to their customers through e-banking. Banks acknowledged that they are expanding their range of services and the main reason is to satisfy their business customers. Due to the fact that businesses customers are the most frequent users of e-banking services they are also the ones demanding more services. Another essential factor within the banking service product quality is the price. The interviewed banks offered basic e-banking services free of charge to their customers. Customers appreciate that the services for making their banking errands online are for free. This is one of the major reasons for people choosing to use e-banking. However, some services are considered to be extras that the private customers have to pay for, such as paying bills over the Internet. The cost of the extra services may differ slightly between the different banks and is estimated to 100-120 SEK per year. This cost can be compared to other alternatives such as paying the bills by envelope or physically visiting the bank. The pay service by envelope costs approximately 180 SEK per year while the cost of physically visiting and paying the bills at the bank, is approximately 50 SEK for each visit.

According to the banks are the basic range of available services wider for businesses, which e.g. may conduct banking errands like transfer money between accounts, salary payments

¹¹⁸ Jun, M., Cai, S., 2001:287-288

directly to the employees accounts, pay bills and so on. But unlike the basic Internet bank services for private customers must businesses pay an annual fee in order to gain access to the Internet services, usually costing at least 1 000 SEK per year. The cost depends on the Internet bank service packages chosen by the businesses. The different packages are customized to meet the business resource demands, e.g. a business which is only operating locally needs a less services than a business operating internationally with subsidiaries abroad. The businesses may, just like the private customers, sign up to extras which among others enables services like to e-accounting, a service which gathers all the administrative parts of the businesses' financial position. It's important though to bear in mind that the businesses' expectations of the services are greater than of the private customers. For example businesses have more services available to them through the Internet bank, such as payment to foreign countries (subsidiaries), Cash Management, E- book-keeping, file management, salary lists and so on. The businesses are more complex and require more advanced and diversified services, due to this complexity banks must personalize the services to meet the demands of their customers. Banks must therefore focus their resources on businesses in order to satisfy them. However, it's still important not to neglect private customers.

The banks stated during the interviews that what both business and private customers expects from e-banking is to feel safe, that it's easy to use and access as well as support round the clock. According to the studies performed by researchers, customers expect much more than this from e-banking. Jun and Cai showed in their studies seventeen dimensions that were divided in three categories which are important when customers are measuring service quality online. The first is customer service quality, which contains the dimensions that are deriving from the SERVQUAL instrument. During the interviews banks admitted that they are looking for continuous improvement of their Internet services. They all agreed that it's imperative to maintain a high interaction between employees and customers, even if there is no face to face interaction. To achieve any channel of communication it is an important means of interaction. The interviewed banks stated that e-mail is the primer communication channel, within e-banking between customers and employees. What customers also can do is to contact their e-bank by calling the bank. All of the banks offered a mailbox to their customers where the customers can send e-mails if they have any queries or if any eventual problems will occur. Some of the banks had also special mail boxes where customers could see all the e-mail they had sent and all the news and e-mails that they had received from the bank. This function enables the customer to easier determine when the e-mail was sent and approximately how

long it would take to receive an answer. Banks may also send important information to their customers through the e-mail boxes. Except for the communication through e-mail and telephone, one of the banks also had personal meetings with their largest e-banking customers. They stated that face to face interaction is of great importance and by meeting their e-banking customers their relationship strengthens. None of the banks had any means of direct real-time communication but they all agreed that e-mail and telephone contact was not enough to maintain a good relationship with their e-banking customers. Yet it was only one bank that actually organized meetings with their largest e-banking customers. But one interesting detail is that all of the interviewed banks stated how determined they were to improve their communication channels online. However, there are several disadvantages to consider the contact between the banks and their customers have become more limited, which have made sales of further services and offers much harder. This lead to that the banks must be proactive in order to sell new services and offers. Another disadvantage is that it is more unlikely that the customers physically visit the bank, thus lowering the social interaction, making the customers more or less anonymous and creating losses of customers-bank relations. The banks seem to be aware of the lacking interaction and its impact on their customers, but according to the acquired information they hardly seem to take any measurements to counteract the loss of interaction. It was surprising that only one bank stated that they actually visited their customers in an organized fashion, due to the fact that they all mentioned the importance of face to face interaction during the interviews. Furthermore the theories points out the importance of not just of the theoretical thinking but to actually implement it practically. Since only one of the banks seem to actually implement in practically the impression is given that the other banks neglect one major interaction aspect, which is of great importance to provide a good service quality. Due to the neglect from the banks they actually lose several advantages. According to the banks such advantages would be: that the customers can manage most of the tasks themselves, that the customers are satisfied as well as the banks since the customers gain better control and insight over, among other things; their transactions, accounts as well as financial actions and possessions, that the Internet bank is that it is cost reductive. To achieve these advantages it is important to deliver an accessible service.

6.1.2. Service accessibility

Accessibility is one important aspect within customer service quality. If customers are unable to access the e-banking services the trustworthiness of the services will decrease. Several studies have conducted, for example Jun and Cai discovered that customers wanted to have access to their e-banks even when they were abroad. During the bank interviews not all of the banks could provide their customers with access to the e-banking while they were abroad if they were using their ordinary system to log on. This extra service offers customer more flexibility and is regarded as a great service. Regarding access by e-mail and phone, all of the banks had a good support and stated that they had qualified people working with e-banking. If either a private or business customer would have any difficulties with the internet office, they will be able to call a call centre, which is available to the customers. However the accessibility differs between the banks, some call centres are available to the customers 24 hours per day, while others are available during specified hours during the day, every day of the week, with eventual exception during holidays. Only two of the interviewed banks had online support round the clock. This means that the rest of the interviewed banks only have support during the working hours. If the customer should have any problems while the bank was closed then they had only one solution and it was to e-mail the bank and wait for the next day until the bank's support opens so that the customer could get help. When banks can not ensure any support for their customers it will create a barrier for customers who are traveling, especially in the cases with the business travelers using e-banking abroad. Furthermore this might be considered as inflexible and limits the needs, wants and opportunities for businesses customers as well as private customers. This will likely lead to unsatisfied customers who might even consider switching to another bank, which has better accessibility.

In order to provide services with secure accessibility banks should consider following three principles: learnability, flexibility and robustness. Learnability enables new customers to easily use the Internet banks services, which most of the banks have adopted. By using already established and recognized interfaces banks are providing new e-banking customers with a good basis for utilizing the Internet bank services. By flexibility means the way customers and the programs interact and exchange information. The Internet banks have rather similar structure in how the customers navigate, however some Internet banks are

easier to navigate through, making them more flexible. Some of the Internet banks are also easier to adopt since they have less text and advertisement. The last principle, robustness, means that users should receive the support needed to achieve their goals. If the banks can not secure a positive support or interaction, customers will most likely choose another Internet bank. Flexibility is one of the aspects that banks must focus on the most in order to ensure a successful interaction between human and technology, thus establish a long-term relationship.

It states that it is the human factor that forms the goal and not the computer. That is why it is so difficult to create a program where all users would, and could, like. There are five steps that banks can follow to make it easier for customers using the Internet bank. The first step is that banks need to know their customers in order to design a suitable program. The Internet banks should be designed in a way that should, as much as possible, suit the user. However, banks can not design a program that is, in advance, pre personalized to suit every customer's needs and desires. Some banks have rendered it possible though to make changes like the most used or popular functions will be added the front page when logging on. Even if customers have the possibility to make these changes the banks can not really affect the users' knowledge in using computers. The second step reasons about thinking outside the box when designing a program. Banks must not focus on what they want to offer their customer but instead consider what the Internet bank users need and desire. According to the interviewees the Internet banks are adapted to meet the customer's needs, but may not be able to personalize the Internet bank to each customer. The third step is about how to know what the customers need. This can be achieved by talking with the customers and ask them what they expect from the e-bank services. According to the study is each bank talking to their customers in order to identify their needs. It is important to point out though that the banks do not talk with every single customer but the most important ones. Furthermore, it is not only important to talk with the customers, but also to observe them and learn about their behavior. This is what the fourth step states, in short: to watch the customers. By observing their customers using e-banking, the banks will be able to identify various difficulties and obstacles in the program and interaction. This was not shown in the study since the provided answers did not give sufficient information. The fifth, and last, step is how to use the imagination. It is difficult to know everything about customers following the previous steps and thus must banks use their imagination when creating a program. It is obvious that the banks have used their imagination when designing their Internet banks, one of the reasons for this is that the banks offer the same basic e-banking service as those offered in the bank offices. Since the

banks have been able to receive feedback from the customers visiting the bank office, they have also been able to more accurately use their imagination to predict the needs of customers using the Internet bank.

6.1.3. Service security

When measuring the online systems quality customers are facing a lot of their attention on the security. The banks stated during the interview that their security was deemed good and they are continuously working with security related issues and investing a lot of money on security. The user will not be able to log on the Internet bank unless they have an access code; which might be obtained either from a code box or e-identification depending on which e-bank the user is connected to. Despite having different systems, code boxes and e-identification, customers must physically visit the banks and identify themselves to obtain the access codes to the Internet bank services. The banks also have fire walls to fend off intrusions. According to the interview banks none have been able to hack into the systems or attain any codes, since customers must physically visit the banks to obtain the different means of logging on, which might be considered as ensuring and maintaining good security. Since the customers only have to personally visit the banks once to receive the codes needed to use the e-banking services it is unlikely that the customers find it lengthy. All of the banks have detailed information about the security and the risks that can emerge with e-banking. They believe that it is important to provide the customer with good information in case of any emergency. For example if the customer would lose the code box they must know what measures to take and whom to contact. The interviewed banks pointed out that the Internet services security is high; maintaining a high level of security is important and is quite an expensive investment. Other dimensions that customers are using when measuring the online systems quality are that banks must always have up-to-date information. According to the interviewed banks customers will receive information in advance in case of any disturbances. Customers may get bothered by the disturbance but by receiving the information in time things will become easier. Banks also provide the information about disturbances on their webpages and telephone numbers to whom customers can call if they have any further questions. By informing their customers in advance of any eventual disturbances banks ensure that e-banking customers are aware of the upcoming disturbances. Furthermore, the banks also improve the means of communicating with their customers, thus creating a better long-

term relationship with their customers. Another aspect to ensure long-term relationships is usability.

6.1.4. Service usability

To determine if the banks offer good usability four factors have been considered: adjustment, user friendliness, user acceptance and user competence. The study shows that even if the banks offer similar services the adjustments that they offer is different. Although the Internet banks are designed according to suit and support the usually performed e-banking errands by the customers, there are distinct differences in the structural functions. Such an example of one function is where the customers are paying bills, where some Internet banks are lengthier and requires more time. The customers are more likely to attain a positive usability experience if the Internet bank is easily and quickly navigated. The design also reflects the banks corporate culture, one bank that showed this very clearly has a locally associated first page presented to the customer when logging on. In order to achieve user friendliness, Internet banks must be accessible. If there is no accessibility then banks are unlikely to be able to provide good usability. This may be applicated to the Internet banks when the customers are using e-banking from their homes. However, when customers utilize e-identification they are forced to solely use one computer, which complicates matters if they are traveling. This problem is solved by offering the customers scrape codes enabling them to log on to the Internet bank from other computers. Further user friendliness aspects are that there must not be too much information on the web pages, thus overwhelming the customers. The study showed that some of the Internet banks are instantly very informative when logging on, giving an advertise impression, while others are more scattering with information. Another aspect within user friendliness is individualization also referred to as personalization. Since humans are different they also prefer diverse settings and they must be able to adjust the settings according to their individual liking. None of the Internet banks are providing a specially designed program that might be adjusted according to their costumers' personal liking. The customers may perform these adjustments on their own computers. However, only one of the banks actually stated that they intend to implement personalized services. It was quite unexpected and surprising that only one of the banks plans to use personalized services due to the fact that the theories and study within the field confirm that customers demand personalized online services. User friendliness last aspect is the quality users may obtain from

the help system, meaning that in order to offer customers the best possible service Internet banks should be able to provide support round the clock. Another factor within Usability is user acceptance, which means users perception about the program as well as interaction with the program. If the customers perceive the interaction as rewarding, they are more likely to accept the usage of the program. Most of the bank's customers are using the e-bank to conduct different errands, indicating that the programs are being accepted by their customers. The last factor is user competence, which means that the user must have enough knowledge and skill to handle a computer. Accordingly to the interviewees, banks can not really affect this factor. However, they do offer some kind of educational and instructional services about the Internet bank and its services.

In order to achieve high service when designing a program it is imperative that e-banking programs are flexible and can be used by all individuals. The interviewed banks are all aware of this fact and taken measurements to ensure that e-banking can be used by all their customers. An example of such measurement is the attention to the elderly people and visually handicapped. Some banks offer their customers, which utilizes code boxes, alternative code boxes with larger buttons adjusted to meet their needs. One of the banks even provided their elderly and visually handicapped customers with the service of physically visit them and solve the problems. That the bank actually visits and aid customers are quite unique, according the given answers, thus generating competitive advantages. According to the Human-Computer Interaction theory, it is important to offer good usability for programs to be accepted by humans. The other banks claim that e-identification is the best alternative for visually handicapped customers. Some of the banks develop the adjustments in cooperation with organisations for handicapped persons to ensure that the services are adapted to fit their needs.

6.1.5. HCI theory guidelines

The HCI deals with the five rules that need to be taken into consideration when banks are developing programs and designing their Internet banks interfaces. These guidelines support the overall interaction and provided e-banking services. The first rule is that the program should be suitable for the task, each bank have a program well suited for carrying out e-banking errands. The usual e-banking errands are paying bills, transactions between account,

attaining information about accounts and loans et cetera. The Internet banks have basic ranges of services, but they also offer several services which are considered to be extras, which the customers must pay an additional fee to obtain. The banks programs have many basic similarities, but each bank has their own specific design. The second rule that needs to be fulfilled is that the program should be easy to use and if possible adaptable to user's knowledge and experience. The banks have developed their programs differently, the tasks are very much the same but the way of conduct differs. When studying the web pages differentiations when navigating through the tasks were identified. When logging on to some of the banks web pages the security was perceived as good since the Internet banks utilizes code boxes with randomly given pass numbers. However there were distinct differences between two of the banks which uses this system to log on. One of the banks systems to log on was easier than the other, this because the second bank's system was more complicated due to the requirement of two codes when logging on. This means that even if banks utilizes a similar system there might be differences in design details which either simplifies or complicates the usage. The differences become clearer when comparing with the competing Internet banks which use completely different systems to log on. These banks are, instead of code boxes, using e-identification and one usage codes. For the user these systems are lengthier and might be considered as an obstacle. This due to the fact that the e-identification may only be installed and used on one computer, while the other system with one usage codes, which are scraped out, may be considered as complicated. The third rule states that programs must provide the user with feedback on performance. The study showed that all the e-banks use programs that provide the customers with feedback when the task has been accomplished. Transaction history may be traced as far as one year back. The fourth rule is that the program should display information in a format and at a rapidity that is adapted by the user. E-banking should offer the customer an interface that is clear and easy to perceive and understand. All the interviewed banks had interfaces that were quite logical and easy to navigate through, though some banks used a language that might be difficult for a person who is not familiar with the bank industry. The fifth and last rule is that the program should conform to the principles of software ergonomics. The layout and physical qualities of the screen should be adapted to the user in order to support the users while they are performing the e-banking services. If the quality is insufficient or the layout blurry the users might be confused and disorientated, thus lowering the motivation for utilizing the services. When studying the interviewed banks it was obvious that some of the banks had spent abundantly of effort in the design of their programs. This is shown clearly when visiting and using the

Internet bank. Some banks had well structured route menus where the users easily may navigate through the Internet bank. Furthermore was the text quite easy to understand and interpret, but some banks had too much text which might be overwhelming for the users.

6.1.6. Customer – Web interaction

Banks must overcome one important challenge when designing a web site, how to create a web site that will meet customers' need and provide good service in order to create customer loyalty. There are five important aspects that a web site should have: clear visual hierarchy on each page, take advantage of conventions, break pages up into clearly defined areas, make it obvious what is clickable and minimize noise. The first step, to clearly and correctly describe the relationships among items on the web site, is being used by some of the banks. By dividing the services into 'structural' categories customers will more easily find the request service, e.g. investments. However, some banks are lacking in utilizing this aspect, which makes it difficult to users to navigate the Internet bank. The second is when taking advantage of conventions to make it easier for users to go from one site to another without spending a lot of effort to figure out how things functions. Some of the banks are quite good at this aspect, their Internet banks are perceived as logical and easy to understand. The other Internet banks on the other hand are perceived as blurry and lengthy since the user must either use several sub-menus or click a lot to find the requested service. The third aspect is to break pages up into clearly defined areas, which could be identified that the banks have done. The banks had divided the services into 'visual' categories to make it easier for customers to quickly navigate and operate on each web page. The fourth aspect, making it obvious what is clickable is used by all the Internet banks. When the cursor is moved to a clickable link a 'pointing hand' appears, informing the customer that this link is clickable. The fifth aspect, minimizing noise is not applied by all the Internet banks. The study showed that when logging on to some of the Internet banks a lot of commercial information appears immediately. This kind of information might be considered as annoying among some users, while others might find it interesting. What many customers are doing while measuring their Internet banks is the aesthetics and the attractiveness of the website. Some of the banks were focusing on giving their websites a new trendy interface to attract more customers.

Due to the increasing number of customers performing their desired tasks over the Internet the physical interaction with the customers has decreased. There are huge differences in what the customers expect from the services online; during the physical visit customers expect e.g. an “open” door, personal service, open during evenings and a lot of human interaction. The banks adjust their organisations to the customers’ needs and behaviour, e.g. the more the customers use the Internet bank services, the more focus on other tasks within the bank industry for the employees. Such examples would be more focus on the function as counsellors and less focus on cashier related tasks. The bank industry in general is changing and transforming into giving customers guidance in different bank related issues such as e.g. loans. The interviewees’ emphasis on the importance of the meeting between customer and representative from the banks still remains very high. Measures taken from the banks to compensate the loss of interaction when customers perform cashier based tasks themselves; are increased visits and meetings with customers as well as finding new means of communication and contact. As discussed earlier might the lack of direct real-time communication with the Internet customer imply the risk that the valuable relationship between the banks and the customer might deteriorate.

7. Conclusion

In this chapter the conclusion of the results will be presented with the starting point from the research questions. Furthermore the suggestions for supplementary research will be presented.

7.1. Do the banks work according to theories and studies of service quality or are there some aspects that are forgotten?

Before jumping to any conclusions it is essential to mention that the theories that were used in this thesis could be adapted to the study. They could not be fully used; instead they were adjusted to suit our study. Because there has been limited research about this subject it is understandable that there is a demand for more theories that can be applicable. Available theories that were used gave a satisfying understanding of the e-banking and service quality online from the interviewed banks and have well contributed to the analysis and conclusion.

From the analysis of conducted studies and theories several aspects have been acknowledged. These aspects show that the interviewed banks have implemented the main part of the theories but may further improve their e-banks. During the interviews it became obvious that the banks are not really worried about the quality of their online services, even though there are some important characteristics in their e-banks that have been forgotten and ought to be improved. All of the interviewed banks stated that what their customers expected from their e-banking services are to feel safe, that they are easy to use and that they are accessible. What can be stated from our studies is that banks have only focused on one of these aspects and it is security. The other two, easy to use and accessibility, have unfortunately not yet fully been developed to provide the customer with high service quality online. It is clear that banks have not yet realized the importance of service quality online. To provide their customers with good service quality online, they need to put some more effort in their e-banks and develop them towards more personalized services in order to heighten their customers' experienced service appreciation. It is true that the bank's customers neither have been included in this study nor have their thoughts been analysed, but from the theories it could be stated that the interviewed banks need to develop their e-banks further. One of the aspects that was stated during the interview and also showing the banks attitude towards their e-banks is the lack of

marketing of e-banking. All the interviewed banks stated that if customers utilize e-banking, the management of banking services will become easier for both banks and customers. Although the study gave indications of that the banks are taking things for granted and should put more effort in marketing e-banking; the banks are aware of the fact that e-banking is a good tool. Yet they are not putting enough effort in marketing it towards their customers and emphasize on the the benefits of the e-banking services.

Since the technology is dynamic banks also need to develop their e-banks in this dynamic way. They have done this rather well already, but there are yet some aspects that need to be improved. It is worth to point out that in spite of the well developed security there always remain some forgotten details. Even governments who have well secured computer systems have been facing non authorized trespassers. During the interviews it could be stated that the banks were well aware of this situation and that they have already taken the security aspect well into consideration when designing the e-banks. The other aspects that banks need to be take more into consideration is to provide their customers with good online service, which will be presented in the next part.

7.2. What must banks do in order to give their customers good online service?

Banks must, as mentioned earlier, focus on several aspects if they want to retain good service quality online. During the interviews it became clear that banks are careful when implementing new innovations. If the banks are reserved about implementing new technological innovations, their restrained attitude might lead to that the banks might miss out on competitive advantages; especially if any of their competitors implement any new innovation. Banks need to continuously develop their e-banks so that their service online will not be out of date, thus leading to that customers choose other e-banks which are better developed and modern. The implementation of new innovations could be, according to the theories, one of the reasons why customers are choosing specific e-banks. In order to retain good service online, banks need to recognise the potential of new innovation and not fear them, but instead embrace and utilize them. Besides implementing new innovations, it is important that banks also develop their services and to personalize even further in order to satisfy their customers as means of creating meaningful experiences. Due to the fact that the

theories and other studies within the field confirm that customers demand personalized services online it was quite unexpected and surprising that the banks do not already focus on personalization. This aspect is due to the fact that banks are careful of implementing new innovations.

Another aspect that banks need to take into consideration in order to give their customers good service online is the communication with their customers. The interviewed banks stated that the ordinary contacts by email and telephone are insufficient if the banks want to maintain a good relationship with their customers. Even so it was the only contact that banks had with their e-banking customers. Only one of the interviewed banks stated that they actually visited their customers in an organized fashion. The loss of the face to face interaction with the Internet customers implies the risk that the valuable relationship between the banks and their customers might deteriorate. That is why it is important for banks to put more effort in creating other ways of communication so that the service quality online will remain high.

Accessibility is another aspect that not all of the banks could provide completely to their customers. Banks should focus on how to provide their customers with access to the e-banking while they were abroad. They should also offer call centers with an availability of 24 hours per day and not only certain hours during the day. To provide customers with accessibility some of the interviewed banks also need to offer other log on systems than the ones they are offering today. For the customers using e-identification and one usage codes instead of code boxes, these systems might be considered lengthier and creating the feeling of being inflexible, thereby becoming an obstacle. Banks need to focus on accessibility if they want to provide their customers with good service online.

All of these aspects that have been mentioned are already in some way being utilized by the interviewed banks. The problem is that they are not as completely utilized as they should be. To ensure a successful interaction between bank and their customers is flexibility an important aspect that the banks must focus on, thus establishing a long-term relationship. The interviewed banks seem overwhelmed of this flexibility and the new innovations, and they have not completely realized the importance of a good service quality online. According to the theories that have been used in this thesis all the aspects have to be taken into

consideration if banks want to create good service quality online and maintain satisfied customers.

7.3. Suggestions for supplementary research

This thesis is a contribution to the studies within the field of service quality and e-banking. It would be interesting to conduct further studies on costumers' perceptions of e-banking. This ought to be considered as a suitable complement to the research about e-banking. This study could be compared to the studies conducted by Jun and Cai, it would be interesting to study whether there are other aspects that Swedes require from their e-banks that are different from those performed by Jun and Cai. Another study that could be conducted is the comparison between Swedish e-banks and e-banks in other countries or continents, where it would be interesting to study if there are differences in the e-banking service that are provided between the countries or continents.

Figures

Figure 1. - The Competitive Forces Model

Figure 2. - Model of Interaction

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Appendix 1. Questionnaire

How many private- and business customers does your Internet bank have in Sweden?

What have the developments been like for the Internet bank service?

- Historical perspective
- Future perspective

What are your Internet bank services like?

Do you actively work to influence your customers to use Internet banking?

What are your security aspects like?

How are eventual operation disturbances, such as system failures, solved?

Are the services adapted to people with handicap or elderly people with lacking computer experience?

Who are considered to be the main target group?

How much effort does your bank spend on marketing?

How does working with private customers differ from business customers?

How is the service and interaction ratio affected when customers change to the e-banking services?

How does the demand from Internet customers differ compared to the customers visiting the bank offices?

What advantages and disadvantages do you perceive with the Internet bank system?

How does the workload affect the banks?

How have the Internet bank services affected the banks from an economical perspective?