

CHAPTER- II

LITERATURE REVIEW

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2.1 INTRODUCTION

Since the 1980s, commercial banking has continuously innovated through technology-enhanced products and services, such as ATM, tele-banking, electronic transfers, and electronic cash cards. Over the past decade, the Internet has clearly played a critical role in providing online services and giving rise to a completely new channel. In the Internet age, the extension of commercial banking to the cyberspace is an inevitable development (Liao and Cheung 2003)¹.

The technological advances in computers, information technology and communication, have change the way in which information is structured, stored, managed, delivered and used. Consequently, there is a large amount of literature relating to the fields of information technology. Some important literature is mentioned in this section of this thesis. Since both researchers and practitioners in the financial institution have highlighted the need for banks to broaden their branch-based delivery channels by embracing electronic banking. It is necessary to give an overview of the past development in respect of effective application of MIS in banks. Therefore, a review of previous literature that covers ICT application and in regards to communication effectiveness, customer satisfaction and revenue aspects in banks is given below.

Related studies are classified into three sections. The first section explores the correlation between information technology adoption and profitability which further lead to the economic growth. Second section explains the relationship between effectiveness of the adoption of information technology and customer satisfaction and

loyalty. Finally in Third section we provide an overview of E-banking adoption and consumers' intention towards self-service technology.

2.2 Correlation between Information Technology Adoption and Profitability

In the first section, the researcher tried to examine if there is any evidence of a positive relationship between ICT and bank's profitability and further to the economic growth. It would be surprising to know that the evidence shows some inconsistencies in concluding the contribution of IT to bank's profit. The earlier studies argued that IT did not present a direct positive contribution to economic growth, and there was not much evidence to indicate that ICT has led to economic growth in most of the developing countries .According to some previous studies, IT has not been all good to the banking industry; IT has brought down the barriers to entry - increasing competition. In as much as the price of IT is falling it is still very costly. However, along with the potential to improve lives and organizations, IT projects can become risky, costly and unproductive mistakes (GAO, 2000)²

While some studies disagree to the positive influence of IT spending to business value, some of the recent studies have indicated that technology and innovation are the main drivers of better economic growth attainment in the most developed countries, and there is a close linkage between productivity growth and technological progress. The astounding high rate of productivity in the US, which occurred at the same with the rapid diffusion and production of ICT directly led to the term new economy. (Daveri F. & Silva O. 2004)³

Laudon, and Laudon, (1991)⁴ corroborates the positive impact of information communication technology ICT on the global criteria, especially improved revenue. They studied the entire cash flow of most fortune 500 companies and linked their success to Information System. They concluded that Information Technology directly

affects how managers decide, how they plan and what products and services are produced.

Y.Ukai, (2005)⁵ in his book, “Economic Analysis of Information System Investment in Banking Industry” concluded that the information technology system in the Japanese banking industry was the optimal system for an economy mainly operated by cash transaction. The authors conducted panel data analyses in order to estimate the increase in market value of each bank due to information system investment. As a result of this analysis, it was proved that an additional 1 dollar of information system assets has a positive effect on increasing the market value of each bank by 12-18 dollars. Similar benefits can be obtained in Indian. While on the other hand Singh, & Komal, (2009)⁶ in their paper “Impact Of ATM on Customer Satisfaction” mentioned that using ATM for banks means immense savings on the cost of operations. While a typical cash transaction carried out in a banks would cost Rs. 40 but in ATM, it will cost only Rs.18.

(Verma)⁷Associate Professor of Finance at Institute of Capital Markets is of the view that in general, existing studies have concluded two positive effects regarding the relation between IT and banks’ performance. First, IT can reduce bank’s operational costs. For example, internet helps banks to conduct standardized, low value-added transactions through the online channel, while focusing their resources into specialized, high-value added transactions through branches. Secondly, IT can facilitate transactions among customers within the same network.

Shu and Strassmann, (2005)⁸ article titled “Does information technology provide banks with profit“ shows that IT investment yields the highest profit margin in the banking industry. This study underestimates some complex issues, such as obsolescence and idleness of IT resources which consume much of the investment without contributing any value. Thus, rather than exploring the effect derived from IT

investment, we focus on the value-creating intangible issues of IT capability, such as process effectiveness, IT experience and value innovation.

(Lin Hong, 2004)⁹ also mentioned the same thing in his thesis entitled “Information technology and cost and profit efficiencies in commercial banks and insurance companies” in which he measured the cost and profit efficiencies and scope economy for commercial banks in 51 countries and insurance firms in 24 countries. The study shows that IT improves the cost and profit efficiencies of these two types of financial institutions uniformly across the developed and developing countries. The financial institutions in the developed countries are able to align new IT with financial management much better than their counterparts do in both newly developed and other developing countries.

Dieter Frink, (2006)¹⁰ noted that, “E- commerce performances that are non-monetary in nature but which nevertheless contribute to overall profitability of the organization”. While Sujan C. Jain, (2006)¹¹ in his book ” E-Banking“ supports the same argument by quoting “Banks are playing major role in e-commerce which has the base of electronic payments and lowering the cost of business is one of the many advantages of e- commerce”

(Mc Breitenbach, et al.,) ¹² study was” The Impact of Information and Communication Technology (ICT) on economic growth in South Africa” to examine if there is any evidence of a positive relationship between ICT and the Gross Domestic Product (GDP). Within the limitation presented by time and absence of a comprehensive database, the research finding is in line with earlier empirical works which suggested a positive relationship between ICT and economic growth.

Sunil Kumar & Rachita Gulati, (2008)¹³ measured the technical efficiency (TE) of 27 Public sector banks (PSBs) during the post-reforms period spanning from 1992/1993 to 2005/2006. There has been a considerable improvement in TE of the Indian public sector banking industry during the post reforms years with mean TE

scores rising from 0.773 in 1992/1993 to 0.895 in 2005/2006. This suggests that Indian PSBs have started learning how to use the right input-mix in the production process. The majority of PSBs have started to use the best-practice production technology with the deepening of reforms process.

Ranee Jayamaha, (2008)¹⁴ Deputy Governor of the Central Bank of Sri Lanka, has indicated the beneficiary service in the banking process. “IT development has undoubtedly brought-in enormous benefits to banks, particularly in terms of productivity increases, cost reduction and increased profitability.

(Karen Furst, et, al., 1998)¹⁵ in their paper “Technological Innovation in Banking and Payments” have focused on the role of technological advancement. “The gains from technological advancements in banking and payments are likely to be substantial, both from the point of view of individual financial institutions and economy wide.

Today’s banking challenges is to meet the global economic as Avgerou, (2001)¹⁶ has clearly informed ICT is an absolute necessity for taking part in today’s global economy. The author further examines the validity of the relationship between ICT and economic development. He found a strong association between ICT and development, and consider ICT is an instrument for development, the more successful economies have more technologies and are better prepared for using them to their competitive advantage.

In contrast to above references, few of them have indicated their view points as below.

Shirley J. Ho & Sushanta K. Mallick, (2006)¹⁷ in their paper “The Impact of Information Technology on the Banking Industry” predict that banks’ profits can be positively or negatively related to IT expenditure, in the equilibrium. Each bank’s

price will decrease with its IT expenditure, but the impact on the profits will have to depend on whether its market share has increased.

Wang (1999)¹⁸ in his study of ICT and economic development in Taiwan, also came to the same conclusion when he argued that the study does not find that IT use presents a direct positive contribution to economic growth. However, recent studies have indicated that technology and innovation are the main drivers of better economic growth attainment in the most developed countries.

M. Tarafdra and D. Vaidya (2007)¹⁹ have concluded that, in their study of “Information technology adoption and the role of organization readiness” NBS lagged behind many other organizations in the industry in its use of IT, and did not obtain competitive advantage from its IS. IT implementation was only to achieve desired level of efficiency and parity with other banks.

2.3 Customer interaction and satisfaction

This step refers to the importance of interacting with the customer in relationship building efforts through a variety of communication tools and technologies. This is necessary as the relationship can only develop and be sustained if there is communication with the customers regarding their needs, perceptions and desires. As postulated by Brunjes & Roderick, 2002 (cited in Adele Berndt, 2005)²⁰ this involves developing methods of communication proactively with customers regarding the organisation’s products and attempting to initiate dialogue with customers. Use can be made of technology, but this is not essential. This interaction with the organisation increases the expectations of the customers regarding the service received as well as the quality of the relationship.

Interaction has got a very prime place in the banking services. However in order to make the interactions good it is highly important that both banks as well as

customers actively involve themselves in the interaction. The relationship, which is maintained between customer and organization, has always a special place in the banking industry when compared to other industries.

The bank should know what exactly the client wants at the same time client should also make sure that has enough knowledge about the bank offerings online banking offers many benefits to banks as well as to customers. Online banking acceptance has gained special attention in academic studies during the past several years as banks move towards implementing internet banking as part of their strategy. The business benefit of the internet banking is to generate additional revenue, improve customer service, extend marketing, and reduce cost. Thus a good relationship among bank and customer improve ability of bank to retain customers.

From a Customer relationship management (CRM) perspective, the customer's long-term profitability and relationship to the company is important. Therefore, the company needs to learn about the customer continually. Keeping track of customer behavior and needs is an important task of a CRM program. Customer relationship management (CRM) can be facilitated by the data acquired and captured on the corporate database. Products and services can be customized to suit the needs of the customers, and accordingly facilitating customer loyalty. However e-CRM supports the interaction with customer. E-CRM system includes online banking, that can be used to generate customer profiles and customer will get personalize services.

2.3.1 Customer relationship management (CRM)

Customer Relationship Management (CRM) is a process by which a company maximizes customer information in an effort to increase loyalty and retain customers' business over their lifetimes. Customer relationship management is a management strategy that unites information technology with marketing. CRM is not a system, but

a philosophy. If it is utilized it with care and attention, it will have a positive effect on a number of organizations (S. Ueno, 2006)²¹.

- **Work flow of CRM**

According to S. Ueno, a simplified CRM workflow is as follows

- 1. Collecting Customer Data and Information***

Acquisition of customers and basic data including name, address, gender, age, etc, is fundamental, but transaction data such as date, time, item, value, etc. at every “touch point,” i.e., a point of interaction when the company communicates with a customer, or vice versa, are also essential. Information is often needed to complement these data. It is “a knowledge that comes from asking questions to customers such as why and how.

- 2. Analyzing Data to Predict Customer Behavior***

Marketers use these data and information so that they can record the interests and preferences of customers. Furthermore, they attempt to ascertain purchasing patterns on the basis of transaction records. “Using sophisticated modeling and data mining techniques, behavior prediction uses historical customer behavior to foresee future behaviors.” Understanding the tendency that a certain type of customer is apt to purchase a specific product (“propensity-to-buy analysis”) and that certain products are often bought with other specific products by a particular type of customer (“product affinity analysis”) has a beneficial effect on making marketing decisions.

- 3. Marketing Campaigns: Applying the Results of Analysis***

Companies conduct marketing campaigns that are designed on the basis of the results of analysis or on hypotheses. They promote their products through various

channels, such as e-mail, the Internet, telemarketing, or direct mail. They also contact their customers for follow-up after purchase. And, of course, they have to monitor the results of that campaign in order to refine future campaigns. With CRM software, they can, for the most part, automate these processes.

4. Measuring Results, Revising Hypotheses, and Repeating This Workflow Process

To improve their results, companies need to evaluate the effects of their marketing campaigns. They should measure whether and how given campaigns achieves its original goal and revise their hypotheses according to the results. After that, they should repeat the workflow process, thereby making gradual progress.

Bose, (2002)²² described the customer relationship management (CRM), essential and vital function of customer oriented marketing is to gather and accumulate related information about customers in order to provide effective services. CRM involves attainment analysis and use of customer's knowledge in order to sell goods and services. Reasons for CRM coming into existence are the changes and developments in marketing environment and web technology. Relationship with customer is a newly distinguished as a key point to set competitive power of an organization. Companies gather data related to their customers, in to perform customer relationship management more effectively. Massey et al., (2000)²³ believes that CRM is about attracting, developing maintaining and retaining profitable customers over a period of time.

2.3.2 E-CRM

The application of technology is the most exciting, fastest growing and changing the way customers get information about products and services. Technology includes all

the equipment, software, and communication links that organizations use to enable or improve their processes.

The “e” in e-CRM stands for “electronic” which can be perceived to have many other connotations. Internet and e-business are accountable for e in the e-CRM. Dyche (2001) ²⁴ identified that e-CRM systems is to improve customer service, develop a relationship and retain valuable customers. Furthermore added advantage would be that it enhances delineation in customer’s value.

Scullin et al., (2002)²⁵ believes that information accumulated by e-CRM system helps organizations to identify the actual input cost of winning and retaining long lasting relationships with customers.

2.3.3 Customer Satisfaction

The role of IT is essential to services, as it has quickly become one of the most important elements of service firms. IT has become a vital part of the production and delivery process. Managing technologies for providing high-quality, multi-channel customer support creates a complex and persistent challenges. It is still unclear how these new communication technologies interact to influence the customer’s satisfaction.

In Second section, the researcher introduces the correlation between customer satisfaction and information technology adoption. One of the objectives of this study is to examine customer satisfaction derived from using personalized applications and services in the context of E-banking.

Technology willingness of corporate customers plays an important role in their attitudes towards a new system. New technology adoption as a combination of positive and negative feelings/attitudes toward new system, roughly, people’s

confidence that technology helps improve their lives, or simply makes things more difficult and less secure(parasuraman, 2000). ²⁶

Literature which suggests that customer satisfaction with the service encounter leads to the possibility of a relationship which in turn creates long-term financial benefits. Customer satisfaction is the outcome felt by buyers who have experienced the organization performance that has fulfilled expectations. According to Oliver, 1981 cited in (Chakib Hamadi, 2010) ²⁷ Satisfaction is "a psychological state resulting from a process of emotional and cognitive evaluation. From the theoretical prospective cumulative satisfaction is an important antecedent of loyalty shown by the intention of repurchases and tolerance of a price increase.

Verma, (2003)²⁸ defines satisfaction as "the result of assessment made by the customer of service delivery in comparison with their prior expectations. Blackwell, et al., (2006)²⁹ states that, "Businesses have begun to realize that simply satisfying customers may not be enough. Rather, they should strive for 'customer delight,' which comes when customers are satisfied completely. If you can move customers from being simply satisfied to delighted, the business benefits are enormous. Companies, who have delighted customers, have created customer loyalty. When they are not able to deliver to customer's expectation it will lead to lower levels of customer satisfaction and loyalty.

While the first group of the study is on the correlation between information technology adoption and profitability; the second group is on the relationship between effective adoption of information technology and customer satisfaction and loyalty.

According to Parasuraman, (1996)³⁰ the use of the Internet in relationships can enhance relationships, however, it is also possible that technology could have a negative effect on relationships if the strategy applied is not appropriate



Vasanthakumari's ³¹, observation notably is important in the study of "Customer satisfaction: A comparison between new generation banks and old generation banks" as below. He studied the level of customer satisfaction by comparing service quality perception about new generation and old generation banks, and the influence of gender, age, education level, and occupation, on service quality perception. It is found out from the study that the average value of service quality perception of the new generation banks is lower than that of the old generation banks. It is surprising to find that even after a host of customer relationship management practices adopted by the new generation banks, which is not a common practice in most of the old generation banks, their service quality scores are lower.

Some researchers have concluded the benefits from the use of ATM. While ATM means immense savings for banks; it is a great service for customers as highlighted by (Ukai, 2005)³² Ukai further said that the Japanese enjoy the largest number of ATMs. (De Angeli et al.,) ³³ came out with the same conclusion that in India, ATMs are being introduced on a large scale, they assumed in their study that illiteracy and lack of expertise with technology are major deterrents to technology adoption. To the great surprise, they found a few people who fell into these categories, but were regular users of ATMs and could perform complex operations like depositing cash.

According to Hernan E. et al., (2009) ³⁴ work seeks to identify which customer service and online attributes predict overall satisfaction, if satisfied customers use more online banking features than less satisfied customers and what are the characteristics of less satisfied customers. The sample was drawn from one of the main banks in Kuwait, the Middle East. Results signal that customers are satisfied or very satisfied (86%) with the bank's responsiveness online suggesting that the bank in Kuwait does take Internet banking seriously. Clients of the bank in Kuwait seem to

be satisfied with the level of services. The level of satisfaction on average is as high as that was found in other studies on Internet banking elsewhere.

Uppal and Rimpi, (2006),³⁵ observations is also worth studying in the direction of customer satisfaction and loyalty in which they explained the impact of computerization on the satisfaction of 500 banks customer and further concluded that customer services are much better in the fully computerized banks as compared to that in partial or non-computerized banks.

Palsokar, (2005)³⁶ indicated in his paper “Electronic banking, in S.B. Verma’s book” Technology in the form of electronic banking has made it possible to find alternate banking practices at lower costs. E-banking has assisted the banks in retaining their customer and their market share by reducing costs in many areas, and also enhances their image.

D. S. Parmar, (2000)³⁷ in his paper “customer satisfaction in public sector banks” is quite justified and relevant in observing his finding based on customer’s personal capacity. The main objective of his study was to ascertain the extent and variation in the level of customer satisfaction and to find out factors that influence the level of satisfaction such as education level, occupation, regularity of the customer. And the study finds out that customers are dissatisfied with various services such as the Indian public sector banks that do not bear the fruits of advancements, and refinements in customer service is highly required.

Srinivas A, and Bollampally K, (2007)³⁸ the two observes in the following viewpoints have come out with a very valuable finding with regard to customer interaction. They studied the benefits of e-CRM to the customers and organization in banking industry, the finding indicates that customer interaction and satisfaction was considered an important benefit provided by banks through the usage of e-CRM. By

using e-CRM and latest technologies, banks can enhance their relationships with customers.

2.4 Online Service Attributes

One objectives of this study is to examine customer satisfaction in context of e-banking service. To understand the theoretical constructs of customer attitude towards new technology such as customer technology contact (CTC), self-service technology (SST) and Technology acceptance model (TAM) will be discuses in this section.

Internet is a technology that spreads faster than any other technology. Advent and adoption of internet by the industries has removed the constraint of time, distance and communication making globe truly a small village. (Khan, M.S., et al., 2009).³⁹ Over the past decade, the Internet has clearly played a critical role in providing online services and giving rise to a completely new channel. In the Internet age, the extension of commercial banking to the cyberspace is an inevitable development (Liao and Cheung 2003).⁴⁰ The unrivaled evolution and rapid diffusion of Internet which introduced new products and services have revolutionized banking industry. Internet banking has experienced explosive growth in many countries and has transformed traditional banking practice.

Internet banking services were introduced in banking as a new distribution channel for offering Internet banking services. This new delivery channel is seen as powerful service delivery channel; however, financial institution was one of the first to recognize the potential of the internet as a means of interaction with customers. Thus use of internet banking is expected to lead to cost reductions and improved competitiveness. The business benefit of the internet, according to Gow (1997)⁴¹ is to generate additional revenue, improve customer service, extend marketing, and increase cost saving. Banks enjoy these benefits as well. In an article entitled "Next-

Generation Retail Banking" (Compaq, 2001) ⁴² *the business drivers for internet banking included:*

- Additional transaction revenues. Banks can derive revenues over and above their offline revenues by charging for online services and value-added services, such as providing a portal for financial services linked to short-and long-term insurers, links to stock brokers, and links to foreign banks.

- Savings from reduced transactional costs. On the internet, customers serve themselves, negating the need for frontline staff. Savings are gained from reductions in staff, reduction in branch sizes, and reduction in consumable costs: such as paper, ink cartridges, and other stationery.

- Opportunities for acquiring new customers. Customers looking for the flexibility and convenience offered by internet banking will be attracted to banks providing the best services. Existing customers can be sold products that they do not have in their portfolio such as a second credit card, life insurance, and home loans among others.

- Improved ability to retain customers. Customer relationship management (CRM) can be facilitated by the data acquired and captured on the corporate database. Products and services can be customized to suit the needs of the customer or groups of customers, thus facilitating customer loyalty.

E-banking creates unprecedented opportunities for the banks in the ways they organize financial product development, delivery, and marketing via the Internet. While it offers new opportunities to banks, it also poses many challenges such as the innovation of IT applications, the blurring of market boundaries, the breaching of industrial barriers, the entrance of new competitors, and the emergence of new business models (Liao and Cheung 2003).⁴³

Internet banking is increasingly becoming a necessity, rather than an innovative tool, and with increasing consumer demand, banks have to upgrade and constantly think of new innovative customised packages and services, to remain competitive. ICICI bank in India has positioned itself as an innovative bank, growing with the momentum of technological innovations, stabilising policies, infrastructure development, and launched the first Internet banking venture in India. Despite regulatory issues, infrastructure problems and cultural barriers, the bank has successfully boosted its profitability (Chandana R. U. & Paula M.C. 2001).⁴⁴ With the expansion of the internet and the World Wide Web, web-based electronic commerce has become an increasingly popular alternative as a commercial medium and marketing channel (Hoffman and Novak, 1996)⁴⁵. The proliferation of the internet and the World Wide Web has enabled firms to extend the delivery of information, services, and computing power directly to end consumers (S. Ben, 2000).⁴⁶ According to a recent survey by the Pew Internet & American Life Project, 66% of online users in the U.S. have purchased a product online (Horrigan, 2008)⁴⁷. Another report projected that, online retail sales excluding travel, will be \$235.4 billion in 2009 and \$334.7 billion in 2012 (Forrester Research, Inc., 2008)⁴⁸.

Lee (1988)⁴⁹ suggested that “advances in technology and computerization have resulted in an era of electronic banking, globalized computer networks and databanks. This advancement in technology and innovation have strengthened and vitalized the payment system of the global banks”. Abor (2005)⁵⁰ in a study of banking in Ghana, noted that technological innovation not only leads the direction of an economy and its capacity for growth, but also affects the banking and financial services.

Internet or Electronic or online banking is the newest delivery channel of banking services and products. The Federal Financial Institutions Examination Council (FFIEC, 2003)⁵¹ specified a definition of e-banking as "the automated delivery of new and traditional banking products and services directly to customers

through electronic, interactive communication channels. Internet banking is a web-enabled technology refers to the use of internet as a remote delivery channel for providing services such as opening a deposit account, transferring funds among different accounts and electronic bill payment. On other wards e-banking: is using the Internet to offer banking services to customers. The concept of e-banking includes all types of banking activities performed through electronic networks. It is the most recent delivery channel of banking services which is used for both business-to-business (B2B) and business-to- customer (B2C) transactions (Mohammad, 2009).⁵²

The terms Internet banking and online banking are often used in the literature to refer the same things. Nowadays the Internet is the main channel for electronic banking. In this study, these terms were adapted: e-banking, online banking and Internet banking were applied interchangeably.

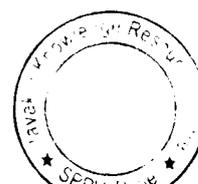
E-banking broadly refers to the ability of banks to operate internal and external banking transactions and information securely through an array of electronic technological devices and software (Bruce Budd & Daniel Budd, 2007)⁵³. It enables bank customers to access accounts and general information on bank products and services through a personal computer (PC) or other intelligent device. The two types of online banking service models are “Internet only online banks” and brick and mortar online banks that use the Internet as a distribution channel to access stakeholders. The Internet only bank model has no brick and mortar bank branches such as, the ones that the traditional banks use to serve face- to -face customers. The brick and mortar online bank is a hybrid model offering both online and bank branch services. The Internet only banks use the Internet for all their services while the brick and mortar offer some banking services online and some banking services are offered offline (Wan, 2003)⁵⁴. So far from the large banks in this study, none had established an Internet only subsidiary. The six banks in this study have adopted Internet banking as a new distribution channel.

One objective of this study is to examine the perceptions and usage of electronic banking among bank customers in Pune. Electronic banking in this context was taken to be a process that included all delivery channels upon which a customer could perform banking transactions electronically or via online without actually visiting a banking institution.

The world of banking is moving away from the traditional banking services approach and focusing on the potential of online banking which continues to attract new users. For instance, according to TNS Canadian Facts ⁵⁵ “six out of ten Canadians with Internet access have signed up for online banking”. Electronic delivery of services is becoming a necessity as a result of the widespread acceptance of the Internet by businesses and consumers. Thus organisations are introducing Self-service Technology (SST) rapidly for three major reasons – to reduce costs, increase customer satisfaction and loyalty and reach new customer segments (Bitner, O. & Meuter, 2002)⁵⁶ . Increased productivity and cutting of transaction costs are the most obvious benefits of e-banking. While the increased convenience of online banking has driven customer demand, banks find it profitable to offer online banking services. For example online transaction costs can be as low as 1 % of an equivalent off-line transaction. (Lee, 2009)⁵⁷ added that online banking provides customers with immediately available and transparent information. Nevertheless, indirect advantages are notably the round-the-clock availability allowing customers to benefit from banking services anywhere in the world at any time and the wide range of investment opportunities such as stock quotations and news updates.

2.4.1 Self-service Technology (SST)

Internet has become one primary type of self-service technology (SST). In fact internet is the driving force which enables customers to become familiarly involved in customer service. SST can be utilized independently by consumers. Studies on



SSTs have proposed several key attributes that explain customers' motivations and intentions to use SSTs instead of other employee-assisted channels. Key factors may include:

- Convenience (time and place flexibility),
- Control,
- Enjoyment and
- Customization.

2.4.2 Customer-Technology Contact

The numbers of technology-based products and services have been growing rapidly, and users have different attitude towards different technologies even if these technologies used to support the same service. Customer-technology contact is applicable in all service modes where the customer interacts directly with the technology in order to produce the service.

Customer-Technology Contact (CTC) Introduced by Chase is one of the most widely cited theoretical constructs in service operations research literature. The theory of customer contact investigates the level of customer interaction with the service provider or the service system. The customer contact model is used in the research to describe the environment in which the service process takes place.

Theotokis, et al., (2008)⁵⁸ said CTC is referred to the amount and type of interface technology that is used by the customer in order to get the service and is therefore observable. and proposed a concept that represents the level of customer-technology interaction in a service delivery system and propose a classification of low and high customer-technology contact services; Figure 2. 1. depicts the concept of customer technology contact versus the view of customer-service provider contact in a technology-based service setting. This study views this concept from the

consumer perspective and uses this classification in order to examine customer attitude towards technology-based services.

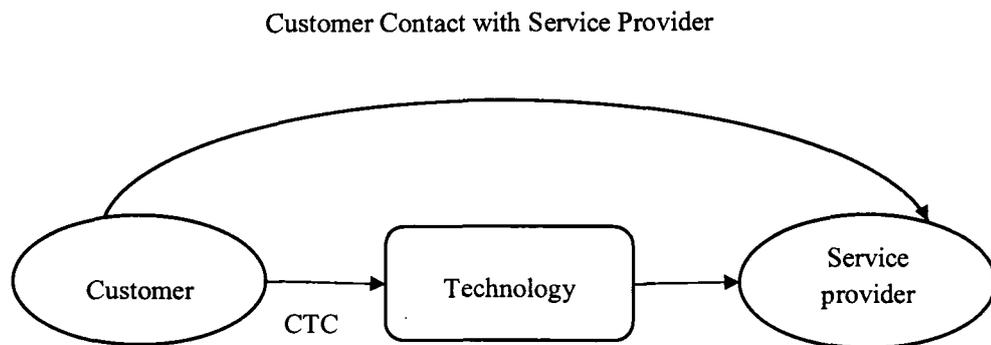


Figure: 2.1. Customer-Technology Contact

Source: European Journal of Information Systems 17, 343-351 (August 2008)

As assumed by Tsikriktsis, (2004) cited in Theotokis, et al., (2008)⁵⁹ among the most significant individual factors postulate as affecting customer perceptions about technology-based services is technology readiness. Technology readiness is a concept that helps to understand the individual behavioral process behind the adoption of technology-based products and services. In other words, customer's readiness refers to people's propensity to embrace and use new technologies of banking over the Internet for accomplishing their needs from the banking dealing. Parasuraman, (2000)⁶⁰ proposed technology readiness as a personality trait that is referred to: "the people's propensity to embrace and use new technologies for accomplishing goals in home life and at work".

Technology readiness is conceptualized as a combination of positive and negative feeling towards technology, roughly people's confidence that technology

helps improve their lives, or simply makes things more difficult and less secure. Other research has similarly indicated that customer's attitude and beliefs about technology are correlated with intentions to use it (chircu & Kauffman 2002)⁶¹.

2.4.3 Technology Acceptance Model

Technology Acceptance Model (TAM) was used to identify factors influencing the intention to adopt internet banking in India to give awareness to the banks by highlighting these factors. Technology Acceptance Model Introduced by Davis is one of the most widely used and referenced theories in the context of technology acceptance to determine consumer behavioral and attitudes towards technologies. In order to understand the customers' behavior towards electronic banking the technology acceptance model was developed by (Davis, 1989)⁶² as measurement instrument to assess user adoption of a new information technology. The primary constructs in this model are:

1. Perceived ease of use,
2. Perceived usefulness, and
3. Actual usage.

This model is shown in figure 2.2

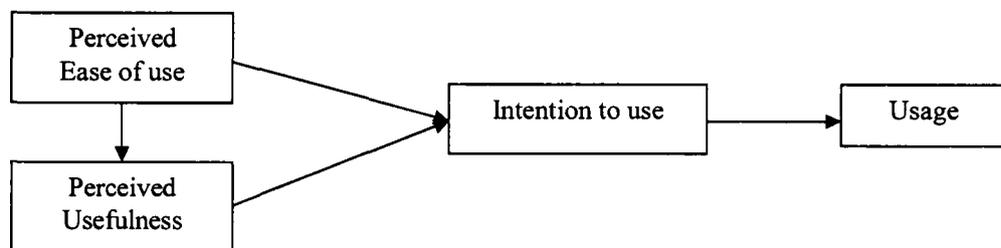


Figure: 2.2 The Technology acceptance model

Source: Davis (1989)

This model suggests that users' decisions to adopt an information technology are primarily determined by their attitudes toward two prominent factors: usefulness and ease of use.

**Global Perspective on Paying on the internet
if the payment system is easy to use**

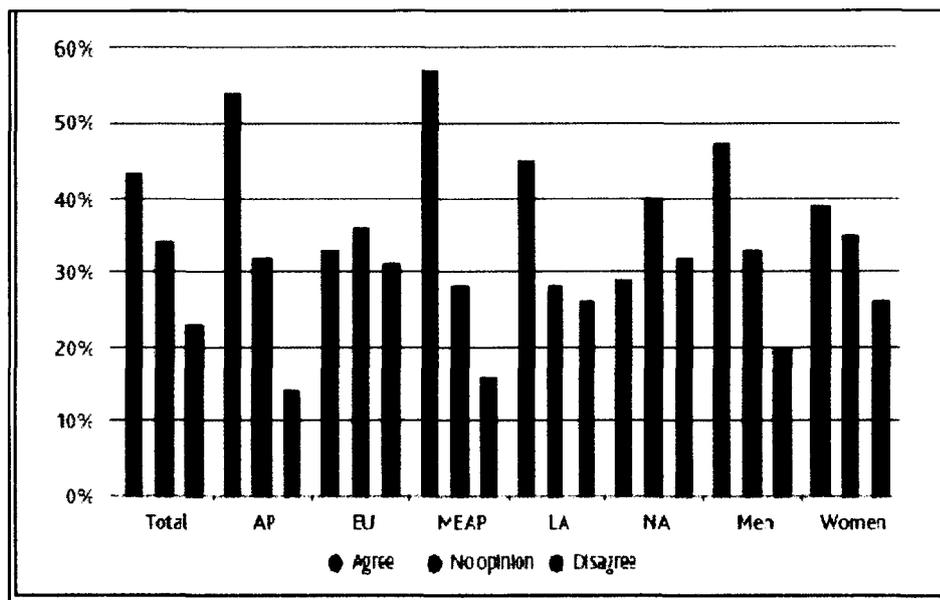


Fig: 2.3 Global Perspective of ease of online payment system

Source: Nielsen, February 2010

<http://blog.nielsen.com/nielsenwire/reports/paid-online-content.pdf>

Customers' perceptions of ease of use, security and problem handling of a bank are significantly correlated with their usage rate of Internet banking. Previous studies have indicated that customers' feelings of trust or confidence were the most essential issue. Even though the number of consumer who banks and or shops online has been growing consumers are still worried about their financial safety on the Internet because of such reasons as risk of error and financial loss. Nielsen asked more than 7,000 consumers in 52 countries their opinions on paying for content online. The

survey, which was conducted during the fall of 2009, covers nations in five geographical regions – Asia Pacific, Europe, Middle East/Africa/ Pakistan (MEAP), Latin America and North America – and includes respondents of both genders and various ages; it measured consumers' willingness to pay for content, as well as their general attitudes on related issues.

However; The Three primary information systems quality attributes relevant to internet commerce are: ease of use, accessibility, and security/privacy. This may be explained by the fact that customers tend to use more Internet banking if they feel that Internet banks are trustworthy and can fulfill their needs.

2.4.4 Service Quality

A popular definition of service quality proposed by Parasuraman et al. (1988)⁶³ is “conformance to customer specifications” – that is, it is the customer's definition of quality that matters, not that of management. Although confusion still exists between the two concepts (service quality and satisfaction) several authors have managed to highlight the distinction between them. Thus, service quality is the managerial delivery of services while satisfaction is customers' experiences with those services (Lenka, Suar et al., 2009)⁶⁴ it is twofold from a theoretical viewpoint. Other authors consider that ‘service quality is a consumer's judgment about the service itself, while satisfaction is more a judgment of how the service emotionally affects the consumer’ (Schneider and White, 2004)⁶⁵. Thus, retention and attraction of consumers are largely determined by the quality of services delivered.

According to Zeithaml et al., (2000)⁶⁶ electronic service quality components include pre and post-service experience with the website. It is evaluating the effectiveness and efficiency by which a website facilitates shopping; purchase and delivery of products or services. Others define it as "all the evaluations and judgments of consumers about the degree of excellence of electronic services.

Perceived service quality can be defined as a global judgment or attitude relating to the superiority of a service relative to competing offerings (parasuraman, et al., 1988)⁶⁷. Researches in the area of management information system have proposed many quality attributes concerning information systems. Several models of service and product quality were developed since the 1980s. Previous studies have demonstrated that perceived service quality from the customer's perspective often differs from the producer's evaluation and is a critical factor in predicating shopping behavior (Zeithaml, 1988)⁶⁸.

Service quality also affects customer satisfaction a recent study by (Al-Hawari and Ward, 2006)⁶⁹ demonstrate that service quality impacts on customer satisfaction which in turn affects the financial performance of banks.

Despite an agreement among researchers on the need to develop scales for assessing internet service quality, the literature has seldom addressed the measurement of customer perceptions of electronic service quality (Wang, et al., 2003)⁷⁰. Numerous researchers have sought to discover the global attributes of services that contribute most significantly to relevant quality assessments.

Overall, review of the extant literature reveals that attempts have been made in the past to develop and test e-SQ scales. The broad criteria relevant to e-SQ perceptions can be summarised as: (Sohail & N. M. Shaikh)⁷¹

- Privacy/security
- Information content and availability
- Web site design or graphic style
- Ease of use and
- Reliability/fulfillment

From the consumers' perspective, internet banking provides a very *convenient* and effective approach to manage one's finances as it is easily accessible 24X7. In fact, convenience appears to be the main reason for online shopping (Kau, et al.,

2003)⁷². Stewart (1999)⁷³ claimed that the failure of internet in retail banking is largely attributable due to the lack of trust consumers have in the electronic channels.

Some previous studies reported that half of the people that have tried online banking services will not become active users. Due to security failures that have involved in some cases might have contributed to the lack of acceptance of Internet banking. In addition, lack of experience and knowledge can hold back adoption. New technology sometimes requires complex understanding and mental capability, and thus the technology may be difficult to use due to limited capability (Chircu and Kauffman, 2000)⁷⁴. Therefore previous studies suggested that the electronic banking system in developing countries could be improved by educating the customers on IT and by improving the operational infrastructure

From the perspective of bank customers, Khalfan and Alshawaf (2004)⁷⁵ emphasized that privacy and security are among the most important issues in developing countries that worked against electronic banking, rendering it unattractive.

Security is an important factor in regards to Internet banking service quality issues. (Liao and Cheung, 2002 and Sathye, 1999)⁷⁶ show that the more secure the customer Perceive Internet banking to be, the more likely it is that customer will use Internet banking.

Regardless of the internet's impact on the competitive advantage of businesses particularly in banking sector and increase of consumer adoption, there is little published literature on how successfully retain customers in the internet context (Gallaugh, 1999)⁷⁷. Although Information technology is changing drastically the way in which people live and particularly banks offer their products and services, studies focusing on factors behind the customer's adoption of new technologies are remaining scarce (Al-Somali et al., 2009, p. 130)⁷⁸. Since the internet considered a new marketing environment there is a need for more theoretically-based and

empirical study to identify the factors affecting customer retention in web-based electronic commerce.

Liao and Cheung (2002)⁷⁹ observed that apart from security issues accuracy, user involvement and friendliness, and convenience affect customers' perceived usefulness of electronic banking. Khan, M. et al.,⁸⁰ in his paper explores the service quality of i-banking operative in India from customer's perspective. It is observed that customers are satisfied with the reliability of the services provided by the banks but are not very much satisfied with the dimension 'User-friendliness'. The result indicates that the two dimensions, viz. 'Privacy/Security' and 'Fulfillment' are not contributing significantly towards the overall service quality. This is an implication that the customers feel that bankers fail in providing the services on these two dimensions satisfactorily.

George & Dimitrios, (2007)⁸¹ proposed and applied TAM in their study for measuring users' attitude towards adoption of several IT based services. In their paper they demonstrate a revised TAM model for measuring users' attitude towards online electronic payments adoption. And present the model developed, as well as initial results from a relevant survey at a Greek bank's target users group. The study was executed upon a focus group of selected bank's customers, in order to measure attitude towards a new payment service, which will offer increased security on payments via Internet, and evaluate the approach towards a more advanced customer survey. Initial findings prove a positive relation between ease of use and actual usage of the new service.

Safeena et al., (2010)⁸² the key intention of their paper was to evaluate those factors that manipulate the nature of customers towards online banking and their growing tendency towards the online. The result of this study shows that perceived usefulness, perceived ease of use, consumer awareness and perceived risk are the important determinants of online banking adoption.

Zolait & Minna, (2009)⁸³ examined the impact of two kinds of variables on the usage of Internet banking. The user's internal beliefs represented by attitude and intention variables and the second type are the impact of external informational variables representing the user's readiness and the communication channel. The study's results yield major insights concerning the determinants of Internet banking by the proposed UR-TAM. It confirmed that a user's usage of Internet banking can be predicted from their intentions.

Dhekra, A. (2009)⁸⁴ Mentioned in his paper "electronic banking adoption in Tunisia" besides, instruction's and PC familiarization's levels seem to be two fundamental variables influencing the adoption of electronic banking: A thorough diagnostic of data reveals that young, PC-literate respondents are using or are willing to use electronic banking particularly ATMs. It is also clear that young respondents are favoring online banking whereas all old ones are traditional banking defenders.

From Literature review prospection information technology have become an interactive tools involved in every stage of day-to- day operations and decision making of almost every organisation. Theories and concepts from info-tech help to understand the changes token place by IT. And the internet and development of e-commerce is expected to have significant impact on banking sector.

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