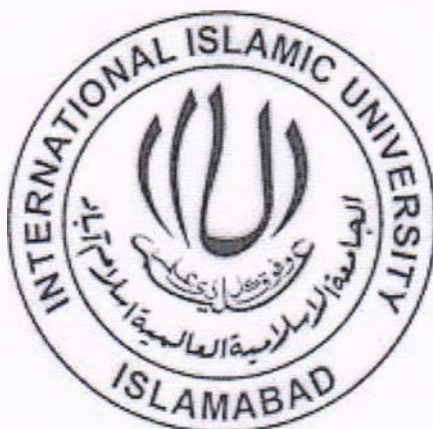


# **Factors influencing the adoption of internet**

## **Banking in Pakistan**



**Submitted To**

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## APPROVAL SHEET

It is certified that we have read the thesis submitted by Mediha Shaukat Wahla having Registration No. 261-FSL/LL.MCL/F09, "Factors Influencing the Adoption of Internet Banking in Pakistan" as a partial fulfillment of the award of degree of LL.M (Corporate Law). We have evaluated the thesis and found it up to the requirements in its scope and quality for the award of degree.

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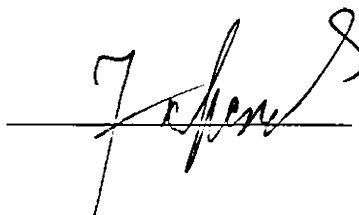
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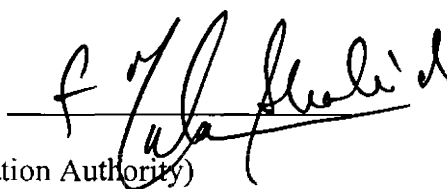
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## **ABSTRACT**

This thesis aims to identify and critically analysis the applicable laws to internet banking and explains factors that affect internet banking acceptance in Pakistan.

In the world of banking, the progress in information and technology has a magnitude upshot on development of more pliable services like internet.

Internet banking services is new in E- Banking modes by which banking products and services can be delivered to customers more expediently. In recent years, almost 80% banks in Pakistan are offering internet banking services to their customers.

The laws applicable to internet banking have been critically analyzed. Areas have been highlighted which should be covered in these laws. Detail is given in Chapter: 3 which can also be viewed in conclusion and recommendations.

A lot of issues were selected from different areas in order to get a better understanding of factors affecting internet banking acceptance in Pakistan. A qualitative research approach was used to get a better understanding of these factors.

The data was collected from different banks of Lahore and Islamabad by using questionnaires. Data analyses were done in accordance with the research question and research model.

The finding from the respondents shows that they have a greater level of worry regarding security and privacy and they have no trust upon this service.

## **ACKNOWLEDGMENT**

The progression of writing this thesis was an astonishing learning experience in my academic life. Many people directly and indirectly help me a lot during this exigent study.

First, I would like to convey my sincere appreciation to my supervisor Hazrat Wali Khattak (Visiting Associate Professor Faculty of Shariah and Law) at International Islamic university Islamabad, for his valuable supervision, comments, feedback and encouragement in the course of the thesis.

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Finally warm thanks to my friends, Brothers Rizwan shaukat wahla, Usman shaukat wahla and sisters Tayyaba shaukat wahla, shazia shaukat wahla and sadia shaukat wahla for their love and understanding during this period of hard work.

**Mediha Shaukat Wahla**

**August, 2011**

**Islamabad, Pakistan**

## DEDICATION

*For a loving Father Respected: Professor Shaukat Jang*

*Wahla whose void can never be filled in my life. A person*

*Who left an impact on my life. It has been 1 long year and*

*8months now, and each day is a reminder of how he stood by  
me, gave strength and unconditional love.*

*May Allah Shower His Blessings and love on his soul, just as  
showered me with his love.*

## **ABBREVIATIONS**

1. **ICT:** Information and Communication Technologies
2. **IT:** Information Technology
3. **ETO, 2002:** Electronic Transaction Ordinance, 2002
4. **PSEFT ACT, 2007:** Payment Systems and Electronic Fund Transfers Act, 2007
5. **PECO, 2009:** Prevention of Electronic Crimes Ordinance, 2009
6. **I.B.C.S:** Inter-Bank Clearing System
7. **S.A.P.S:** Settlement Accounting Processing System
8. **IB:** Internet Banking
9. **SBP:** State Bank of Pakistan
10. **PTA:** Pakistan Telecommunication Authority
11. **EB:** Electronic Banking
12. **BB:** Branchless Banking
13. **WEF:** World Economic Forum
14. **INT:** Intention
15. **ATT:** Attitude
16. **T:** Trust
17. **PU:** Perceived Usefulness
18. **PEU:** Perceived Easy Usefulness
19. **SP:** Security Privacy



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## CHAPTER: 1

# INTRODUCTION TO INTERNET BANKING

### 1.1 Introduction.

Banking Industry is providing important services to its Accounts holders and Customers as it deals with the Receipt and Payment of money besides other services being provided to the Society and Public at large i.e. the transmission of money etc. Banks need to have reliable and quick responsive system to deliver the required services within the desired time frame. Therefore Banks have always such a processor and activity that relies on the information and technology to perform its functions. "Electronic has transformed the banking business to as great a degree as any of the industries that have been affected by computer technologies".<sup>1</sup> The term Bank can be defined as "An institution that is a bank in one context may not be so regarded for some other purpose".<sup>2</sup> Banks are also required to update their payment system to meet the new challenges and for the convenience of customers. Some banks consider a more potential approach to deliver their services through a new medium of Internet. "Since the introduction of the internet in 1969, it has evolved from the sole domain of the computer nerd and the academic to a mainstream channel of communication".<sup>3</sup> "According to Internet World Stats the global internet user exceeded 1,802,330,457 people offering new markets for

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<sup>1</sup> Floyd E. Enger, III, *The Electronic future of Banking* (London: McGRAW-Hill Book company, 1991), 1.

<sup>2</sup> E.P. Ellinger, *Modern Banking Law* (Singapore: clarendon press oxford, 1987), 51.

<sup>3</sup> Margaret Tan and Thompson S. H. Teo, "Factors Influencing the Adoption of Internet Banking", *Journal of the Association for Information Systems*, 1:5 (2000), 2.

internet based services like internet banking”.<sup>4</sup> With the initiation of internet banking the traditional financial institution seeks to lower cost and improve the banking services.

One of the major factors which have profound effect on the banking industry is rapid change in information and communication technology. “The rapid advancement in electronic distribution channels has produced tremendous changes in the financial industry in recent years, with an increasing rate of change in technology, competition among players and consumer needs”.<sup>5</sup>

The competition is increasing day by day among banks and non-banking financial institutions which force the banks to rethink their strategies.

“New services are difficult to evaluate where the quality of trustworthiness dominates”.<sup>6</sup>

Customers are demanding much more from the banks. “They want new levels of convenience and flexibility on top of powerful and easy to use financial management tools, products and services that traditional retail banking could not offer”.<sup>7</sup> Internet banking involves consumers using the internet to access their bank account and to undertake banking transaction. “Information Technology based distribution channels reduce personal contact between the service providers and the customers, which inevitably leads to a complete transformation of traditional bank-customers relationships”.<sup>8</sup>

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<sup>4</sup> Internet World Stats. Available at < <http://sawadaleel.com/asia-stats.html> > (last accessed 28-08-09).

<sup>5</sup> Tim Hughes, “Market orientation and the response of UK financial services companies to changes in Market condition as a result e-commerce”, *International Journal of Bank Marketing*, 19:6 (2001), 222-31.

<sup>6</sup> Lia Patricio et al, “Improving satisfaction with bank service offerings: measuring the contribution of each delivery channel”, *Managing Service Quality*, 13:6 (2003), 471-83.

<sup>7</sup> D Birch and M A Young, “Financial services and the internet: what does cyberspace mean for the financial services industry”, *Internet Research*, 7:3 (1997), 120-128.

<sup>8</sup> James G Barnes and Darin M Howlett, “Predictors of equity in relationships between financial services providers and retail customers”, *International Journal of Bank Marketing*, 16 (1998), 15-23.

Pakistan is a successful example of fast and rapid introduction of information and technologies as compared to some year ago when Pakistan was considered to be a starter in information and technology. "According to World Economic Forum (WEF) Pakistan has jumped 11 places to 87th position from last year's 98th in the Global Information Technology Report ranking for 2009-10".<sup>9</sup>

"Internet banking involves consumers using the internet to access their bank account and to undertake banking transaction".<sup>10</sup> "Internet banking provides such systems that enable banks and financial institutions' customers to access accounts and general information on bank, like financial Products and services".<sup>11</sup>

"In terms of volume, the electronic banking has recorded 159.8 million transactions showing 28.4 percent increase against increase of 25.2 percent recorded in the previous year".<sup>12</sup> "In terms of value, it reached Rs.14.4 trillion showing an increase of 3.5 percent as compared to last year".<sup>13</sup>

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<sup>9</sup> WEF World Economic Forum report. Available at < [http://article.wn.com/view/2010/03/26/Pakistan\\_improves\\_ranking\\_in\\_worlds\\_IT\\_sector\\_WEF\\_report](http://article.wn.com/view/2010/03/26/Pakistan_improves_ranking_in_worlds_IT_sector_WEF_report)> (last accessed 28-08-09).

<sup>10</sup> World report. Available at < [www.worldreport.com](http://www.worldreport.com) > (last accessed 29-08-09).

<sup>11</sup> Mohamed Y. Alem et al, "E-BANKING AND OTHER FINANCIAL SERVICES: REGULATORY DEVELOPMENTS IN SELECTED ARAB COUNTRIES". Available at < [http://www.alemlaw.com/E-BANKING\\_AND\\_OTHER\\_FINANCIAL\\_SERVICES\\_REGULATORY\\_DEVELOPMENTS\\_IN\\_SELECTED\\_ARAB\\_COUNTRIES.pdf](http://www.alemlaw.com/E-BANKING_AND_OTHER_FINANCIAL_SERVICES_REGULATORY_DEVELOPMENTS_IN_SELECTED_ARAB_COUNTRIES.pdf) > (last accessed 03-08-11).

<sup>12</sup> Annual report SBP 2009. Available at < <http://www.sbp.org.pk/reports/annual/arFY09/Vol2/Chapter-5.pdf> > (last accessed 31-08-09).

<sup>13</sup> Ibid,

## **1.2 Scope of the Research.**

It is well known that Asian countries are belatedly adopters of internet and internet applications regarding internet banking. Pakistan is also one of them. There is no research that identifies and explains factors affecting internet banking acceptance and critically analyses the applicable law and legal issue regarding internet banking in Pakistan. The Purpose is to give awareness to the Banks to improve their services.

This research is as followed: firstly it provides a brief introduction of Pakistan's ICT and IT sector than internet in Pakistan. It also includes the introduction of internet banking in Pakistan.

## **1.3 Pakistan's Information and Communication Technologies.**

Information and communication technologies are playing a very important role in the advancements in banking Sector. "In fact information and communication technologies (ICT) are enabling banks to make radical changes to the way they operate".<sup>14</sup> "The historical paradigm of IT provides useful insights into the 'learning opportunities' that opened the way to radical changes in the banking industry such as the reconfiguration of its organizational structure and the diversification of the product line".<sup>15</sup>

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<sup>14</sup> Mahmood Shah and Steve Clarke, *E-Banking Management: Issues, Solutions, and Strategies* (Hershey: Information Science Reference, 2009), 12.

<sup>15</sup> D Consoli, *The evolution of retail banking services in United Kingdom: a retrospective analysis*. CRIC Working Paper No 13. ISBN: 1 84052 0116, (2003).



“ICT commonly refers to the newer technologies of computers, internet and phones and also believed to incorporate media such as radio, television and libraries, due to their role in the transmission of information”.<sup>16</sup> This explanation of ICT reflects that Internet banking is the part of ICT and Electronic banking.

“Like any other developing country, Pakistan is also passing through experiences, however, unless adequate measures are introduced in customizing the technology, mismanagement always results in wastage of resources, problems in usage and sometimes total termination of the projects”.<sup>17</sup>

Information and Communication Technologies (ICTs) are playing its catalytic role in Pakistan.

“The importance of ICTs lies in its ability to create greater access to resources in time-critical situations like earthquake and flood etc so the success stories of progressing nations show that when ICTs are placed in an enabling environment and adopted to the needs of those who use them, they can improve livelihoods”.<sup>18</sup>

“Pakistan’s National policies have been consistently focused on the development of a domestic ICT sector and market earlier (1980-1990s) the focus was on the creation on a diversified industrial sector and development of technical capabilities”.<sup>19</sup> But recently, the

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<sup>16</sup> Available at <[http://www.sbp.org.pk/reports/quarterly/FY07/first/Special\\_Section\\_2.pdf](http://www.sbp.org.pk/reports/quarterly/FY07/first/Special_Section_2.pdf)> (last accessed 28-08-09).

<sup>17</sup> R.L. Glass, “Short-term and Long-term Remedies for Runaway Projects”. *Communications of the ACM*, 41: 7, (1998)13-15.

<sup>18</sup> Message from Prime Minister Syed Yusuf Raza Gilani on the world telecommunication & information society day 17<sup>th</sup> may 2010. Available at < <http://www.pid.gov.pk/press16-05-2010.htm> > (last accessed 30-8-10).

<sup>19</sup> Yousaf Haroon Mujahid, “Digital Opportunity Initiative: For Pakistan” (A paper evaluating Pakistani eReadiness Initiatives) Islamabad, 2001), 7. Available at

concentration has shifted to liberalization of economy policies and edifice ICT infrastructure for promotion of these sectors. It is generally acknowledged that Information and Communication Technologies (ICT) have a central role in National development. ICTs have the capacity to add worthiness' to broadband enabled telecommunication infrastructure for provision of innovative services. "Market is witnessing paradigm shift from voice to value added services like Mobile Banking, Video Conferencing, and Virtual".<sup>20</sup>

The State Bank of Pakistan has also issued Branch less Banking Regulations and Guidelines for Financial Institutions Desirous to undertake Branchless Banking. The said guidelines deal with Permissible Branchless Banking Models and Activities, Key Roles & Responsibility and responsibilities of Board of Directors, Senior Management, Compliance Officer and Internal Auditors. These regulations addresses the role of agent, structure and due diligence as well as Third-Party Service Providers services related to technological infrastructure. A risk based approach to customer due diligence has also been sketched in these regulations including Customer Protection Awareness and Branchless Banking Procedures .The SBP is currently working on drafting of Third Party Regulations for Mobile Banking in Pakistan in which the role of Banks, Telecom Operators and third party clearing agents would be determined .

The meadow of telecommunications in Pakistan has undergone a thespian change in the last three years. Since the government deregulated the sector in 2004, a large amount investment

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<<http://www.pide.org.pk/pdf/psde%2018AGM/Digital%20Opportunity%20Initiative%20For%20Pakistan.pdf>> (last accessed 28-08-09).

<sup>20</sup> Press information department. Available at < <http://www.pid.gov.pk/press16-05-2010.htm> > (last accessed 19-10-10).

flowed in it with the aim to make it major player in the industry. “The sector attracted approximately US\$ 2 Billion in foreign and local investment, translating into 54% of the total Foreign Direct Investment in the country”.<sup>21</sup>

Pakistan is also becoming a global player in telecommunication and ICT services. Tax reduction policy by government has increased more ICT firms in Karachi, the top financial hub in Pakistan.

“Over the past four years, a key focus of foreign investment in Pakistan has been ICT infrastructure, accounting for about 20 per cent of 130 major investments”.<sup>22</sup> Anyhow ICT can play a dynamic role in achievement of development and economic goals it can also have a major impact upon the national development strategies and to make it achievable.

#### **1.4 Development of Information Technology (IT) sector.**

“IT plays a crucial role in shaping the destiny of a nation and the advent of computers has brought about this change”.<sup>23</sup>

“A formal definition of IT terms it as a broad subject concerned with technology and other aspects of managing and processing information and that it deals with the use of electronic

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<sup>21</sup> PTA, 2006, ‘Annual Report 2006’, Pakistan Telecommunication Authority (PTA), pp 14, Islamabad.

<sup>22</sup> Available at < [http://www.ontariocanada.com/ontcan/indiapakistan/en/about\\_en.jsp](http://www.ontariocanada.com/ontcan/indiapakistan/en/about_en.jsp) > (last accessed 20-10-10).

<sup>23</sup> S.B Verma et al, *E-banking and Development of Banks* (New Delhi: Deep & Deep publications PVT.LTD, 2007), 108.

computers and computer software to convert, store, protect, process, transmit, and retrieve information”.<sup>24</sup>

Most probably all global IT companies in the world doing business in Pakistan, the IT sector is playing a leading role in economic growth and promoting IT activities in the country. “In many industries, such as banking and telecommunication, it is virtually impossible for an organization to compete unless its customers are given the level of service that is only possible with high technology systems”.<sup>25</sup>

“Information Technology implementation is one of the ways to fulfill and execute the development factors on the right way, which will help the nation to grow in peace and prosperity, which will create a momentum that will result the development of Pakistan”.<sup>26</sup>

Now organizations are conducting business online i.e. eBusiness. “According to Rogers, “eBusiness means interacting and serving the customers online” which uses IT to expedite the exchange of information for communication and coordination both inside and outside of the organization and to manage the internal processes and external relationships with customers, suppliers and other entities”.<sup>27</sup>

“An industry characterized by about 75,000 professionals, major ongoing IT projects within the government and the private sector to the tune of hundreds of millions of US dollars, and

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<sup>24</sup> Available at < [http://en.wikipedia.org/wiki/Portal:Information\\_technology](http://en.wikipedia.org/wiki/Portal:Information_technology) > (last accessed 20-10-10).

<sup>25</sup> Ghulam Muhammad Kundi and Bahadar Shah, IT in Pakistan & Opportunities For EBusiness. *The Electronic Journal on Information Systems in Developing Countries*. 36:8 (2009), 1. Available at <<http://www.ejisdc.org>> (last accessed 20-10-10).

<sup>26</sup> Role of information technology In the development of Pakistan by Wajahat Mahmood Qazi TAKVEEN – KHWARZIMIC SCIENCE SOCIETY. Available at < <http://www.khwarzimid.org/takveen/index.asp> > (last accessed 20-10-10).

<sup>27</sup> W Rogers, “eGovernance and eDemocracy: Living and Working in the Connected World”. Commonwealth Secretariat London.2002. Available at < <http://www.commonwealth.int.> > (last accessed 21-10-10).

world-class software product and services companies bears testimony to the vibrancy of the IT and IT enabled services sector in Pakistan”.<sup>28</sup> The rapid advancement in communications, computing, and entertainment has resulted in unclear distinguish between disciplines and IT companies. “IT has indeed been taken out of the closet and has been mainstreamed into every aspect of industrial and economic activity within the country”.<sup>29</sup>

“The government of Pakistan is taking a lot of interest in promoting IT activities in all fields of life. The Federal Cabinet approved the National IT Policy in August 2000 defined the role of the Government as an enabler for IT based future economy”.<sup>30</sup> The salient features of the policy were;

1. To develop a modern countrywide infrastructure for the flow of information
2. To increase internet accessibility throughout the country by lowering of bandwidth price
3. Introduce IT to improve telecommunication services in different areas of life
4. Apply new IT technology to the old industry to increase production processor
5. Facilitate the public by providing all forms and information available to them online

We are of the view that the development of Internet depends upon the development of IT and the development of Internet will of course develop the Internet banking. Therefore

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<sup>28</sup> Available at < [http://www.itcnasia.com/it\\_infra.htm](http://www.itcnasia.com/it_infra.htm)> (last accessed 21-10-10).

<sup>29</sup> Ibid,

<sup>30</sup> Available at <<http://pakistan.gov.pk/itandtelecom-division/highlights/material.pdf>> (last accessed 21-10-10).

promotion of IT will promote the Internet banking through which better services will be provided by the Banks to its Accounts holders and Customers.

### **1.5 What is Internet?**

“Internet called the 'information superhighway' and the 'network of networks,' it is basically a means of connecting a computer to any other computer anywhere in the world”.<sup>31</sup>

When two or more computers are connected to each other they can receive and send all type of information and data like picture, graphics, voice, video and all type of computer programs.

“The Internet was the result of some visionary thinking by people in the early 1960s that saw great potential value in allowing computers to share information on research and development in scientific and military fields”.<sup>32</sup>

Pakistan is also fast moving ahead in Internet connectivity. The coverage is going to be better day by day than many countries of the world including developed countries.

### **1.6 Internet in Pakistan.**

“Internet access has been available in Pakistan since the mid-1990s and Pakistan Telecommunication Limited started offering access via the nationwide local call network in

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<sup>31</sup> Available at < <http://www.businessdictionary.com/definition/internet.html> > (last accessed 23-10-10).

<sup>32</sup> Available at < <http://www.walthowe.com/navnet/history.html> > (last accessed 23-10-10).

1995".<sup>33</sup> The first international Internet service in Pakistan was established by Digicom in early 1995. The license of commercial Internet service providers began in 1996. "By mid-1999, licenses to provide Internet services had been issued to approximately 100 organizations".<sup>34</sup> "By mid-2000, the number of Pakistani users had grown to 500,000 and in year 2005, the total number of Internet Service providers has crossed 2000 mark and subsequent Internet users have reached to a roaring total of 10.5 Million".<sup>35</sup>

Internet being part of telecommunication services and system in Pakistan is governed under Pakistan Telecommunications (Re-organization) Act 1996 (amended in 2006) and under the said Act, all internet service providers in Pakistan require a License to offer internet services. The Internet Service Licenses falls under the category of Data Class Value Licenses, which are issued by Pakistan Telecommunications Authority (PTA) under specific terms and conditions coupled with other obligations regarding provision of services, monitoring, Quality of Service, Privacy of subscribers and Protection from Spam, unsolicited and Fraudulent communications under the rules and regulations issued by Government of Pakistan and the Pakistan Telecommunications Authority.

### **1.7 Internet Banking in Pakistan.**

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<sup>33</sup> Available at <<http://www.internetworldstats.com/asia/pk.htm>> (last accessed 24-10-10).

<sup>34</sup> Kashif Adeel. Impact of Internet on Society - Pakistan Community. National University of Computer and Emerging Sciences (NUCES) Faisal Town, Lahore. Pakistan. Available at <<http://www.apng.org/9thcamp/Papers/Kashif.pdf>> (last accessed 29-10-10).

<sup>35</sup> Ibid,

“Traditionally, people deposited funds into an account in the form of cash or check and withdrew cash as they needed it or wrote checks to pay for purchases”.<sup>36</sup> “With the advent of modern computer and communication technology, the method by which the checking account is accessed has begun to change”.<sup>37</sup>

“Internet banking means any user with a personal computer and a browser can get connected to his bank’s website to perform any of the virtual banking functions”.<sup>38</sup> “The internet banking is becoming an increasingly important channel for Pakistani’s banks to provide banking services to both individual customers and businesses”.<sup>39</sup> “Internet banking refers to use of the internet as a remote delivery channel for banking services”.<sup>40</sup> According to K. Frust et al, Banks offers internet banking in two ways. “An existing bank with physical offices can establish a web site and offer internet banking to its customers as an addition to its traditional delivery channels”. “A second alternative is to establish a virtual internet- only bank”.<sup>41</sup> The last few years have witnessed supreme changes throughout the world”.<sup>42</sup> In Pakistan, foreign banks lead Pakistan banks by introducing ATMs and credit cards in the mid 1990s, and domestic banks in Pakistan followed in late 1990s.

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<sup>36</sup> Allen H. Lipis et al, *Electronic Banking* (Georgia: John wiley & sons Inc, 1985), 1.

<sup>37</sup> Thomas D. Simpson, *Money Banking and Economic analysis* (New Jersey: Prentice Hall, Inc Englewood cliffs, 1981), 5.

<sup>38</sup> Available at < <http://www.slideshare.net/cssangoram/e-banking>> (last accessed 07-11-10).

<sup>39</sup> Saadullah Khan, Adoption issues of Internet banking in Pakistani’ Firms, published Master’s Thesis (submitted to Department of Business Administration and Social Science, Lulea University Sweden, 15).

<sup>40</sup> K Frus et al. “Internet Banking: Development and prospects”, Economic and policy Analysis working paper 2000-9, office of the comptroller of the currency, 2000, 88.

<sup>41</sup> Ibid,

<sup>42</sup> S.G Deshmukh and K.V. Sambasivarao, “Strategic framework for implementing the flexible manufacturing systems in India”. *International Journal of Operations & Production Management* 1:49 (1994), 52-65.



“The State Bank of Pakistan Annual Report (2003) explained this delayed entry in electronic banking largely by regulatory hurdles, higher start up costs, on-going banking sector reforms and lack of technical skills”.<sup>43</sup>

In Pakistan the Government further promoted internet banking with the promulgation of the Electronic Transaction Ordinance, 2002 which provides legal recognition of digital signatures and documentation reducing the risks associated with the use of electronic media in business.

“At present, almost all commercial banks in Pakistan have setup their own ATM networks, issue debit and credit cards and have joined one of the two operating ATM Switch Networks”.<sup>44</sup>

“According to Kolachi (2006) Pakistani banks provides the following online banking services and products.

**(1) Inquiry:** Account statement inquiry, Account balance inquiry, Check statement inquiry, fixed deposit inquiry

**(2) Payment:** Transfer of funds, Credit cards payments, direct payments, Utility bills payments

**(3) Request:** Chequebook requests, Stop payment requests, Demand draft requests, new fixed deposit requests

**(4) Download:** Customer profile, Statement download, other information and guidelines download”.<sup>45</sup>

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<sup>43</sup> State Bank of Pakistan, (2003), “State Bank of Pakistan annual reports”, p: 110 Karachi, Pakistan.

<sup>44</sup> Ahmad Kaleem and Saima Ahmad, “Bankers’ Perceptions of Electronic Banking in Pakistan”, *Journal of Internet Banking and Commerce*, 13:1 (2008) 3. Available at <<http://www.arraydev.com/commerce/jibc/>> (last accessed 08-11-10).

Table 1 provides an overview of the development of electronic banking in Pakistan. It shows the number of online branches, ATM networks, and debit and credit card holders have increased sharply since the year 2000.

**Table 1**  
**Electronic Banking Statistics in Pakistan**

Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
No of online branches	322	450	777	1,581	2,475	3,265	3,265	4,179	5,282	6,040
No of ATMs	206	259	399	552	786	1,217	1,217	0.158	0.789 million	0.881 million
No of Debit cards Holders	240	415	736	1,257	1,257	4,257	4,257	4.729	4.9 million	6.4 million
No of credit cards Holders	217	292	369	397	397	1,257	1,257	1.623	1.8 million	1.7 million

**Source: SBP Annual Reports 2000-2009**

“The SBP Annual Report (2005) shows that domestic banks are the major supplier of ATM facilities while foreign banks, mainly Citibank and Standard Chartered, dominate the credit card business in Pakistan and account for over 95 per cent of the total amount transaction”.<sup>46</sup>

<sup>45</sup> N Kolachi, “Internet banking system in Pakistan: some crucial weaknesses and suggestions for improvement”, *Journal of Institute of Bankers Pakistan*, 73: 2 (2006), 23 – 32.

<sup>46</sup> State Bank of Pakistan, (2003), “State Bank of Pakistan annual reports”, p: 111 Karachi, Pakistan.

“Due to increase in technology usage the banking sector’s performance increases day by day. Online banking is becoming the indispensable part of modern day banking services. It is expected that 60 % of retail banking dealings will be online in ten years’ time”.<sup>47</sup>

“A financial institution has a lot of customers around the country therefore they need their bank online so that they can easily access it from anywhere”.<sup>48</sup> Pakistani banks are not behind in the race of adoption of technology. Several banks are providing different facilities to their customers for the fast delivery of payment.

“Internet banking offers benefits to both banks and customers. Pikkarainen et al. (2004) mentioned two fundamental reasons underlying online banking development and penetration”.<sup>49</sup> First, that bank gets considerable cost savings in their process through internet Banking services. It has been proved that online banking channel is the cheapest delivery conduit for banking products once recognized. “Second, that bank have reduced their branch networks and downsized the number of service staff, which has paved the way to self-service channels as quite many customers felt that branch banking took too much time and effort”.<sup>50</sup>

As Internet banking is less developed in Pakistan as compared to the developed countries of the world. But internet banking users in Pakistan are double in every year as compared to last some years.

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<sup>47</sup> P. Barwise, Editorial. *The Journal of Brand Management*, 4 (1997), 220-223.

<sup>48</sup> Tahir Masood Qureshi and Muhammad Khaqan Zafar, “Customer Acceptance of Online Banking in Developing Economies” *Journal of Internet Banking and Commerce*, 13:1, (2008) 3.

<sup>49</sup> Tero Pikkarainen et al. Consumer acceptance of online banking: an extension of the technology acceptance model, 14: 3 (2004), 224–235. Available at <<http://www.emeralinsight.com/researchregister>> (last accessed 15-11-10).

<sup>50</sup> Ibid,

## CHAPTER: 2

### INTERNET BANKING AS A DEVELOPMENT TOOL

#### 2.1 Benefits of Internet Banking.

“Internet banking is a term used for performing transactions, payments etc, through the Internet by a bank”.<sup>1</sup> “In the last twenty years there have been many technological developments in banking operations which have amongst other things, produced a situation in which substantial changes are possible in payment practice”.<sup>2</sup> Internet banking is a method of banking that is popular to manage and finance one’s money. A customer no longer need to worry about making time in their daily schedule to visit the bank when they have an access to their bank account 24 hours through internet. “Such a method speeds up the banking activities, extends us the wonderful opportunity of using bank services in the comfort of our home, or even if we are traveling far away we can still conduct business”.<sup>3</sup>

For using Internet the users only have to craft an internet bank account. Customers have to complete a short form and then set the sanctuary features such as a password and username. Finally, they send it to the bank.

Internet Banking facilitates a person to enquire on his account balances, transfer funds, pay your bills, view your transaction history and request for check book. Now customer can

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<sup>1</sup> D. Muraleedharan, *Modern Banking Theory and Practice* (New Delhi: PHI Learning Private Limited, 2009), 317.

<sup>2</sup> Patrick Kirkman, *Electronic Funds Transfers system* (New York: Basil Blackwell LTD, 1987), 65.

<sup>3</sup> Available at < <http://www.perthmoneyshow.com/finance/these-are-advantages-of-internet-banking/> > (last accessed 08-11-10).

make transactions at any time during a day or night and anywhere in the world as far as there is an internet connection and he remembers his username and password. "The positive correlation between convenience and online banking that remarked a primary benefit for the bank is cost saving and for the consumers a primary benefits is convenience".<sup>4</sup>

This also allows consumers to observe banking account transactions daily and to pay bills. "Paying bills and credit cards is another advantage that the customer does not have to go to the post office or call up the company, he can pay it with just few key strokes and mouse clicks".<sup>5</sup>

Alongside with bank security features regarding internet, a customer have the facility to supervise his account any time which helps him to keep his account from any fraudulent activity. This can attentive account holder to find fraud a lot faster than checking a statement at the end of the month.

"Stocks and bonds and other investments can be managed with online banking from home or office independent of a financial intermediary like a stockbroker".<sup>6</sup> With the invention of online banking customers are able to see what has cleared or not cleared by the bank. "Internet banking also increases competition within the banking system and also from non-bank financial institution".<sup>7</sup> The Internet increases the supremacy of the customer to make

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<sup>4</sup> P Gerrard and J.B Cunningham, "The diffusion of Internet banking among Singapore consumers", *International Journal of Bank Marketing*, 21:1, (2003), 16-28.

<sup>5</sup> Available at < <http://www.banksavingsaccounts.com.au/articles/3/online-internet-banking-the-benefits-and-risks.php> > (last accessed 08-11-10).

<sup>6</sup> Available at< <http://www.transactmoney.com/transaction-articles/internet-banking-services.htm> > (last accessed 09-11-10).

<sup>7</sup> European Central Bank (ECB), "The Effects of Technology in the EU Banking Systems", ECB, Frankfurt am Main, July.1999.

price comparisons crossways suppliers quickly and easily. Alongside this plot, it pushes prices and margins downward.

“Institutional encouragement of the use of IT-based services and IT service fees are another important dimension”.<sup>8</sup> “Due to such efforts, many universities are currently in the process of building web-based service systems via internet homepages, and providing students with a variety of information by connecting vast information resources linked to campus networks”.<sup>9</sup> Such services catch the attention of the students and the people of all ages because it saves their time to visit the colleges and universities to get information. They get information with the help of computer and internet connection at home.

“Cantrell conducted a banking survey in the US and found that increases in service fees were one of the main driving forces behind the move of some large bank customers to smaller community banks”.<sup>10</sup>

“The banks are responding to the Internet differently, and that those which see the Internet as a complement and substitute to traditional channels achieved better communication and interactivity with customers”.<sup>11</sup>

“Robinson (2000) argued that the online banking extends the relationship with the customers through providing financial services right into the home or office of customers”.<sup>12</sup> “The banks may also enjoy the benefits in terms of increased customers loyalty and satisfaction”.<sup>13</sup>

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<sup>8</sup> F X Zhu, W Wymer, I Chen, “IT-based services and service quality in consumer banking”, *International Journal of Service Industry Management*, 13:1 (2002), 69-90.

<sup>9</sup> Hyung Seok Lee and Yoon Hyung Choi, “Determinants Affecting User Satisfaction with Campus Portal Services in Korea”, *Journal of Internet Banking and Commerce*, 14:1(2009), 3.

<sup>10</sup> C Cantrell, “Up close and profitable”, *Bank Marketing*, 29:6 (1997), 45-6.

<sup>11</sup> A Yakhlef, “Does the Internet compete with or complement bricks-and-mortar bank branches?” *International Journal of Retail & Distribution Management*, 29:6 (2001), 272-81.

## 2.2 Advantages for Banks.

"Internet banking offers many advantages and benefits to banks. The main benefits to banks are cost savings, reaching new segments of the population, efficiency, enhancement of the bank's reputation and better customer service and satisfaction".<sup>14</sup> Now a days the Internet banking playing very important role in banking transactions. Some customers avoid visiting branch personally. If a bank has such facility then they can increase their customer base.

"Consultants Booz- Allen & Hamilton estimated that whereas the cost of a customer walking into the branch and using a teller is USD 1.01, the cost of conducting the same transaction on the internet is a tenth of that is close to USD 0.10".<sup>15</sup>

"The traditional bank's running costs account for 50% to 60% of its revenues, while the running costs of internet Banking is estimated at 15% to 20% of its revenues".<sup>16</sup>

"According to Robinson the cost of an electronic transaction is dramatically less when done online compare to at a branch".<sup>17</sup> "The single most important driving force behind the implementation of full service internet banking by bank is the need to create powerful

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<sup>12</sup> G Robinson, "Bank to the future", *Internet Magazine* (2000). Available at < <http://www.findarticles.com> > (last accessed 10-11-10).

<sup>13</sup> A Oumlil and A Williams, "Consumer education programs for mature customers", *Journal of Services Marketing*, 14:3(2000), 232-43.

<sup>14</sup> C Brogdon, "Banking and the internet: past, present and possibilities. Available at < <http://www.dbstanford.edu/pub/gio/cs991/banking.html> > (last accessed 11-11-10).

<sup>15</sup> Sanjiv Singhal, "internet Banking: The second wave", (New Delhi: Tata McGraw- Hill publishing company Limited, 2003), 15.

<sup>16</sup> Sara Naimi Baraghani, "Factors Influencing the adoption of Internet Banking "Published Master thesis (submitted to Department of Business Administration and Social Science, Lulea university of Technology Sweden, 26)

<sup>17</sup> T Robinson, "Internet banking-still not a perfect marriage", *InformationWeek*, 17:4 (2000), 104-106.

barriers to customer exiting”.<sup>18</sup> The banks offering internet banking services are better branding and better responsiveness to the market. “Those banks that would offer such services would be perceived as leaders in technology implementation”.<sup>19</sup> Therefore, the banks which have such facility have the benefit of a better brand image.

The other benefits to banks can be evaluated in fiscal terms. The core goal of every bank is to provide facility to the customers and to maximize profits. Automated internet banking services offer many facilities to the customers. It is also an ideal chance for maximizing profits. “It has been proven that online banking channel is the cheapest delivery channel for banking products once established”.<sup>20</sup>

Banks can also reduce their branch networks and staff members. “According to a survey by Booz, Allen and Hamilton, an estimated cost providing the routine business of a full service branch in USA is \$1.07 per transaction, as compared to 54 cents for telephone banking, 27 cents for ATM (Automatic Teller Machine) banking and 1. 5 cents for Internet banking”.<sup>21</sup>

In Pakistan during Fiscal Year 2009, banks reported 2.1 million transactions through internet banking involving an amount of Rs: 68.4 billion. “This shows an increase of 59 percent in numbers and 56 percent in amount compared to increase of 49 percent in value and 58 percent in amount recorded last year”.<sup>22</sup>

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<sup>18</sup> A Sheshunoff, Internet banking- an update from the frontlines”, *ABA Banking Journal*, 92:1 (2000), 51-55.

<sup>19</sup> Mahdi Salehi, “E-Banking in Emerging Economy: Empirical Evidence of Iran” *International Journal of Economics and Finance*, 2:1(2010), 202.

<sup>20</sup> V Gigli, “Privacy in the world of cyberbanking: emerging legal issues and how You are protected”, *The Secured Lender*, March/April, (2002), 48-60.

<sup>21</sup> L Nathan, “www.your-community-bank.com: community banks are going online. Community and Banking,” Federal Reserve Bank of Boston, 1999.

<sup>22</sup> State Bank of Pakistan. Available at < <http://www.sbp.org.pk/reports/annual/arFY09/Vol2/Chapter-5.pdf> > (last accessed 22-11-10).



“The numbers of transactions through Mobile Banking were 71,240 for fiscal year 09 shows an increase of 46 percent in number of mobile transactions”.<sup>23</sup>

Most of the banks in Pakistan are offering e-banking services a comparison of these services among different Banks are as,

**Comparison of eBanking Services in Pakistan by different Banks**

<b>BANKS</b>	<b>Debit card</b>	<b>Credit card</b>	<b>Internet banking</b>	<b>ATM Locator</b>
<b>ABN AMRO</b>	✓		✓	✓
<b>Askari commercial Bank</b>	✓	✓	✓	✓
<b>Bank Alfalah</b>	✓	✓		✓
<b>Citi Bank</b>	✓	✓	✓	✓
<b>Faysal Bank</b>	✓			✓
<b>Habib Bank Ltd</b>	✓		✓	✓
<b>MCB</b>	✓	✓	✓	✓
<b>Metropolitan Bank</b>	✓		✓	✓
<b>NBP</b>				
<b>Soneri Bank</b>	✓		✓	
<b>Standard Chartered Bank</b>	✓	✓	✓	✓
<b>UBL</b>	✓	✓	✓	✓
<b>Union Bank</b>	✓	✓		✓

<sup>23</sup> State Bank of Pakistan. Available at < <http://www.sbp.org.pk/reports/annual/arFY09/Vol2/Chapter-5.pdf> > (last accessed 22-11-10).

By the above chart it is showed that most of banks are offering these services but there are some banks those have not such facility. As Pakistan Financial services industry has recently been open to remarkable revolution, hope so with the passage of time and advancement in technology all banks in Pakistan will start to provide these facilities.

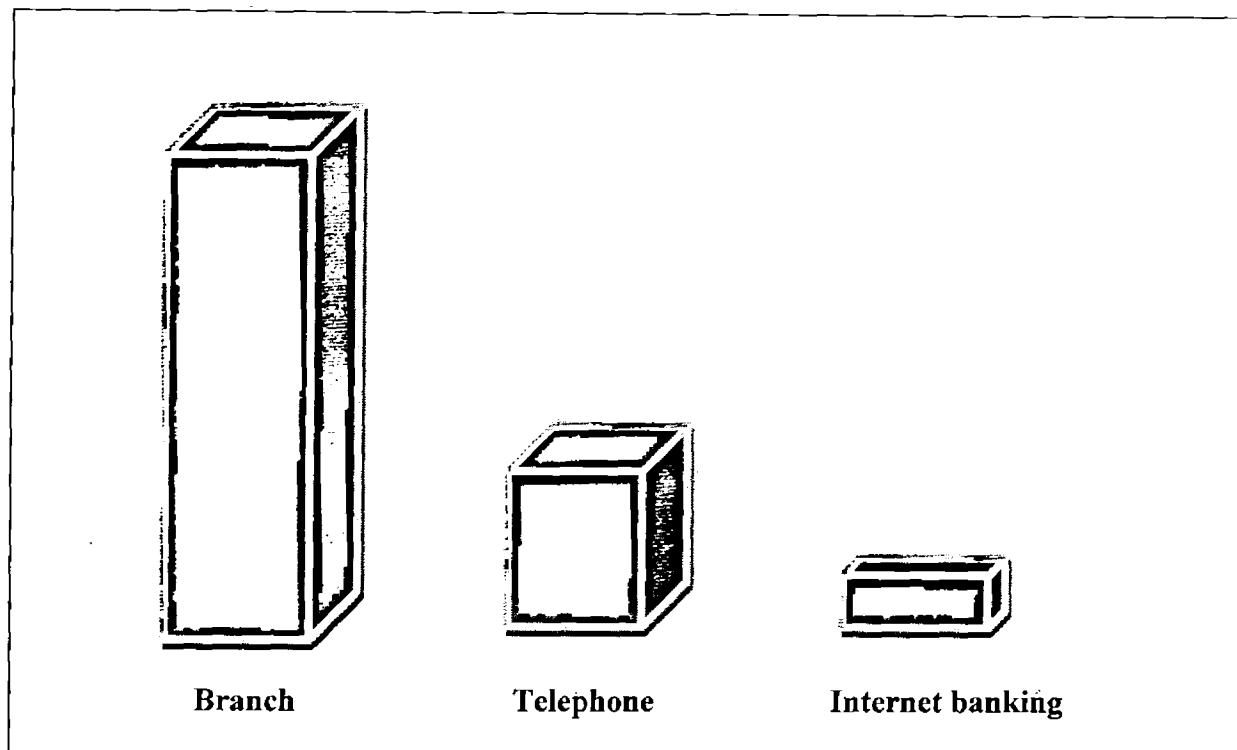
### **2.3 Reduction of cost and improvement in operation.**

The advent of internet banking played a momentous role in improving customer convenience and reducing costs and this led to improved efficiency and profitability in services delivery of the banks. “The internet offers a cost efficient alternative to telephone and branch banking due to the relatively low capital and maintenance costs, and its fully-automated processing of most transactions”.<sup>24</sup>

#### **The cost of different Bank Channel**

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<sup>24</sup> Two-Factor Authentication for Banking— Building the Business Case, Available at <[http://www.cryptomathic.com/Files/Filer/pdfs/Cryptomathic\\_Banking\\_Authentication\\_White\\_Paper.pdf](http://www.cryptomathic.com/Files/Filer/pdfs/Cryptomathic_Banking_Authentication_White_Paper.pdf)> (last accessed 13-11-10).



“Costs are one of the single most important factors that influence the consumer adoption of innovation”.<sup>25</sup> “Suganthy et al (2001) found that cost as a characteristics of Internet banking. Two types of costs are involved in the Internet banking, i.e. normal costs associated with Internet activities and second are the bank charge and cost”.<sup>26</sup> “If consumers are to use new technologies, the technologies must be reasonably priced relative to alternatives”.<sup>27</sup> Otherwise, the acceptance of the new technology may not be feasible from the point of view of the consumer.

<sup>25</sup> Syed Shah Alam, Rosidah Musa, Faridah Hassan, “Corporate Customers’ Adoption of Internet Banking: Case of Klang Valley Business Firm in Malaysia” *International Journal of Business and Management*, 4:4 (2009), 15.

<sup>26</sup> M Sathye, “Adoption of Internet Banking by Australian Consumers: An Empirical Investigation” *International Journal of Bank Marketing*, 17: 7 (1999), 324-334.

<sup>27</sup> Wallis Report (1997). The Financial System Inquiry Final Report, AGPS, Canberra.

"In addition to revenue enhancement, Internet banking may enable banks to reduce costs of operation, in particular, by allowing them to reduce expenditures on "brick and mortar".<sup>28</sup>

"To the extent this may be so, Internet banking could be considered a causal factor in generating lower expenses related to maintaining physical branches".<sup>29</sup>

The banks comparatively elevated operating cost in maintaining their branch networks may be expected to have the motivation to adopt Internet banking. "The adoption of Internet banking would thus be the effect of existing characteristics of banks".<sup>30</sup>

Reduction in cost and improvement in operation through improved processes is the object of every bank. "Therefore, global banks with a presence in emerging markets must be judicious in their cost reduction initiatives, so that their growth agendas do not suffer".<sup>31</sup>

"The study conducted at South Africa's banks customers reviewed that online banking has increased efficiency and reduced costs for customers through the reduced need for queuing in the bank for some transaction which should have been done otherwise".<sup>32</sup> Queuing results in customers foregoing some other activities that they should have done, hence the opportunity cost.

"Forty-four per cent (44%) of the respondents strongly agree that online banking reduced queuing in banks, thirty-three per cent (33%) agree (this means 77% of the respondents were on the agreeing side), six per cent (6%) neither agree nor disagree, while seventeen (17%)

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<sup>28</sup> Pooja Malhotra and Balwinder Singh, "The Impact of Internet Banking on Bank Performance and Risk: The Indian Experience" *Eurasian Journal of Business and Economics*, 2:4(2009), 53.

<sup>29</sup> Ibid,

<sup>30</sup> K Furs et al, "Internet Banking", *Journal of Financial Services Research*, 22: 1&2(2002), 93-117.

<sup>31</sup> Available at < [http://www.accenture.com/NR/rdonlyres/7C26B680-90A3-4318-9A21-10.48741683CB15/0/Accenture\\_HPB\\_CostReduction\\_Brochure\\_FINAL.PDF](http://www.accenture.com/NR/rdonlyres/7C26B680-90A3-4318-9A21-10.48741683CB15/0/Accenture_HPB_CostReduction_Brochure_FINAL.PDF)> (last accessed 14-11-10).

<sup>32</sup> M. Musara and O. Fatoki, "Has technological innovations resulted in increased efficiency and cost savings for banks' customers?" *African Journal of Business Management*, 4:9(2010), 1817-1818.

disagree (7% strongly disagree and 10% disagree) and the respondents who disagreed argued that access to the internet is limited to most people in South Africa, thus, most people still have to go and do their transactions in the bank".<sup>33</sup>

Some banks have reduced their transaction costs by as much as 80% or more, while at the same time providing their customers various facilities only on the click of a button. The Internet is such a way which provides global reach. "The potential benefits for banks conducting their business online are manifold, with decreased transaction costs and access to new customers providing seemingly irresistible advantages to conducting business online".<sup>34</sup> "This revolutionary fund transfer through the Internet has given everyone the chance to process payments and receive money into their account any time at very low rates compared to the manual money transfer companies and with so much less hassle compared to paying through hand written checks".<sup>35</sup> For banks, Internet banking service offers a way to decrease their costs and increase efficiency.

## **2.4 Transaction speed.**

"Internet Banking has become increasingly prevalent, employed by many financial institutions to reduce costs associated with having personnel serve customers physically,

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<sup>33</sup> Ibid,

<sup>34</sup> Dr: R.K. Uppal and Rimpi kaur, *Banking in the New Millennium* (New Delhi: Mahamaya publishing House, 2007), 282.

<sup>35</sup> Available at < <http://www.articlesbase.com/personal-finance-articles/internet-funds-transfer-fast-and-easy-1208423.html> (last accessed 15-11-10).

shorten processing periods, increase speed, improve the flexibility of business transactions and provide better service overall".<sup>36</sup>

"These transactions include transferring funds from your savings accounts to your checking accounts and vice versa, making credit card payments and paying bills at a high speed".<sup>37</sup>

"The advent of web technology constitutes a new medium of commerce which puts the customer in a position to directly and quickly interact with the web services of the bank and never communicate with any employees".<sup>38</sup> "Turban et al. (2000) also indicated that Internet banking could respond to complaints more quickly".<sup>39</sup>

The transaction speed also enhances the customers' perceptions in relation to the value of expenditure being established more quickly. The speed of payment settlement may become a key differentiator for the many customers that have bank accounts with more than one bank. This transaction speed is also very beneficial for banks due to the transaction speed more and more customers are using internet banking in the world.

## **2.5 Easy to approach.**

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<sup>36</sup> S Ainin, C.H Lim, A Wee, "Prospects and Challenges of e-banking in Malaysia", *The Electronic Journal of Information Systems in Developing Countries* 22:1(2005), 1-11.

<sup>37</sup> Available at < <http://www.isnare.com/?aid=572579&ca=Finances> > (last accessed 19-10-10).

<sup>38</sup> Ya-Yueh Shih, "The study of customer attitude towards Internet banking based on the Theory of Planned Behavior" Department of Information and Management, ChungHua University. Available at < <http://ibacnet.org/bai2007/proceedings/Papers/2007bai7536.pdf> > (last accessed 19-10-10).

<sup>39</sup> E Turban, *Electronic commerce: a managerial perspective* (Prentice-Hall, Upper Saddle River, NJ, 2007), 177.

Internet banking service offers an easy way to approach any time in a day, week or year to a customer. By Internet banking the conventional customer bank manager association has been replaced by a password.

Internet banking provides the customer a huge number of transactions that are now being done on the Internet. The expediency of easy approach at anytime to the banking services is the most significant aspect. "Added to that is the freedom from traveling all the way to the branch and avoiding the traffic are reason enough for the customer to choose Internet banking over traditional banking options".<sup>40</sup>

"By Internet Banking it is easy to approach many internet banks online allowing you to compare such features as interest rates, available credit cards and their interest rates".<sup>41</sup> "This is a helpful tool to have when doing research on important fiscal choices of a personal or business nature, which shouldn't be confused with services offered by financial sites".<sup>42</sup>

Ordering banking account supplies is easy over the Internet. Traditional banking has always been slow and has a long processor. With internet banking, customers no longer have to wait of term in long lines to get information about their account.

As well, there is less conventional paperwork and applying for loans is faster, easier, and more convenient than past. Now a customer is not bound by banking hours and no need to go there physically. No matter where a customer is, what time it is, everybody can easily manage his money. Internet banking gives people more managing control over their money in a very easy way that they find enjoyable and supportive.

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<sup>40</sup> Available at < <http://www.articlesbase.com/finance-articles/benefits-of-internet-banking-1837521.html> > (last accessed 19-10-10).

<sup>41</sup> Available at <<http://www.isnare.com/?aid=572579&ca=Finances>> (last accessed 19-10-10).

<sup>42</sup> Available at <<http://www.injs-mali.org/2009/12/advantages-internet-banking.html>> (last accessed 16-11-10).

## **2.6 Risks associated with internet banking.**

Internet banking has many benefits to its customers but there are also several risks attached to such transactions while availing internet banking facility. Some of these are as follows:

### **2.6.1 Strategic risk.**

“Strategic Risk is the risk associated with the financial institution’s future business plans and strategies”.<sup>43</sup> This risk also depends upon that how well the bank has addressed to the various issues like available sources, business planning and new technology. In many cases the bank staff does not fully comprehend the strategic and technical aspects of Internet banking. Banks may inquire about to spread out Internet banking without a satisfactory strategic. Poor and weak strategy in internet banking can increase a financial institution’s strategic risk.

### **2.6.2 Operational risk.**

The Bank for international settlements defines operational risk as “the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and system, or from external events”.<sup>44</sup> “One way to think about “operational risk” is to see them as the risks associated with carrying out strategic objectives, whether in peacetime operations, crisis or war”.<sup>45</sup> “A high level of transaction risk may exist with Internet banking products,

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<sup>43</sup> Amlesh Banerjee, *Second Generation of Financial Reforms* (New Delhi: Deep & Deep Publishers, 2001), 13.

<sup>44</sup> Bank for International Settlement, 2001, p 27.

<sup>45</sup> Paul Bracken et al, *Managing strategic surprise* (New York: Cambridge university press, 2008), 189.



particularly if those lines of business are not adequately planned, implemented, and monitored".<sup>46</sup>

Most Internet banking services are based on innovative and intricate technology interfaces to link with systems, thereby escalating risk of transaction errors. Besides the technology fault this risk can also be arise out of human factor such as carelessness by staff and deceptive activity of crackers and hackers etc can become probable cause of operational risk.

### 2.6.3 Compliance risk.

"It arises from violation of or non conformation laws, rules, regulations or prescribed practices or when the legal rights and obligations of parties to a transaction are not well established".<sup>47</sup> Compliance risk may lead to reduction business opportunities, any type of monetary losses. The Banks should plan Internet banking service in such an approach that it always complies with relevant laws and guidelines.

"Non compliance results in serious consequences, including rating downgrades, regulatory enforcement actions and monetary fines, enforced suspension of operations, reputational damages, and, in extreme cases, withdrawal of authorization to operate".<sup>48</sup> This type of risk

mostly arises when the customers, banks and transactions are in different countries.

Contradictory laws and tax dealings across different jurisdictions add to the risk. The need to keep customer data in privacy and inquire about customers' consent before giving out the

<sup>46</sup> Comptroller's Hand Book on Internet Banking 1999.

<sup>47</sup> Available at < <http://hubpages.com/hub/E-Banking> > (last accessed 15-11-10).

<sup>48</sup> Jayaram Kondabagil, *Banking concept and Best Practice* (Singapore: John Wiley & sons (Asia) pvt.Ltd, 2007), 13.

data also adds to compliance risk. "Data confidentiality refers to the protection of sensitive information from prying eyes and allowing authorised access only".<sup>49</sup>

#### **2.6.4 Reputation risk.**

"Reputational risk can be defined as the risk arising from negative perception on the part of customers, counterparties, shareholders, investors or regulators that can adversely affect a bank's ability to maintain existing, or establish new, business relationships and continued access to sources of funding".<sup>50</sup>

"The time-worn way to avoid risk was the tactic of keeping silent ("there is no danger keep schtum") or hiring a big name with a good reputation to reduce your investment".<sup>51</sup>

This is the present and probable risk that may become a big source of loss of revenue and clients. A bank's reputa can be spoiled by poor Internet banking services like limited accessibility, buggy software and poor response. Customers are less sympathetic of any problems because they have confidentiality relationship to their banks.

#### **2.6.5 Information security risk.**

"This is the risk to earnings and capital arising out of lax information security processes, thus exposing the institution to malicious hacker or insider attacks, viruses, denial-of-service attacks, data theft, data destruction and fraud".<sup>52</sup>

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<sup>49</sup> The monetary authority of Singapore, *Internet Banking Technology Risk Management Guidelines*.p:10

<sup>50</sup> Available at < [http://www.risk-officer.com/Reputational\\_Risk.htm](http://www.risk-officer.com/Reputational_Risk.htm)> (last accessed 16-11-10).

<sup>51</sup> Yen Yee Chong, *Investment risk Management* (Chichester: Johan Wiley & sons Ltd, 2004), 14.

<sup>52</sup> Available at < <http://www.isaca.org/Journal/Past-Issues/2001/Volume-6/Pages/Risk-Management-for-Internet-Banking.aspx>> (last accessed 16-11-10).

The momentum of change of technology and the fact that the Internet channel is easy to get universally makes this risk principally critical. "If banks don't adopt new defensive technologies they will increase their risk by default, because hackers will always use the latest technologies to their advantage".<sup>53</sup> "If the information technology system generated accurate output, the system was considered as low risk".<sup>54</sup>

#### 2.6.6 Credit risk.

"Credit risk is the likelihood that a transaction or transactions with a country party will be defaulted upon through that country party's inability to meet its financial obligations".<sup>55</sup> "It is the risk that participants in the transaction will not be paid for an outstanding claim".<sup>56</sup>

"The participants include the counter parties the issuer of the settlement medium and intermediaries".<sup>57</sup>

"Credit risk typically arises where one of the participants become insolvent".<sup>58</sup> Cash flow deficit may also be a central reason for credit risk. "However, management should consider additional precautions when originating and approving loans electronically, including

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<sup>53</sup> James A. Nelson, "Information Security Risk in Financial Institutions" World Academy of Science, Engineering and Technology, 2005. Available at < <http://www.waset.org/journals/waset/v10/v10-11.pdf> > (last accessed 18-11-10).

<sup>54</sup> Ibid,

<sup>55</sup> Robin. A. H. Kendall, *Risk Management for Executives* (Harlow: Pearson Education Limited, 1998), 120.

<sup>56</sup> Sunil Khandelwal and Dayanand Pandey, "Risks in Large Value Payment Systems", *Journal of Internet Banking and Commerce*, 12:1(2007), 9.

<sup>57</sup> Ibid,

<sup>58</sup> Bergh, Paul Van den. "Operational and Financial Structure of the Payment System, in the Payment System, ed. Bruce J. Summer", IMF, Washington DC, 1994.

assuring management information systems effectively track the performance of portfolios originated through e-banking channels”.<sup>59</sup>

### **2.6.7 Liquidity or Funding risk.**

“Liquidity is the ability to meet expected and unexpected demands for cash”.<sup>60</sup> “Liquidity risk, therefore, is the risk that we will not be able to do that we will face the requirement to pay cash and be unable to do so”.<sup>61</sup>

"A well-managed bank, regardless of size and complexity, must be able to identify measure, monitor and control liquidity risk in a timely and comprehensive manner, the handbook says, Early warning indicators" of liquidity risk include:

- \* A negative trend or significantly increased risk in any area or product line;
- \* Concentrations in either assets or liabilities;
- \* A decline in indicators of asset quality;
- \* A decline in earnings performance or projections; and
- \* Rapid asset growth funded by volatile wholesale liabilities or brokered deposits”.<sup>62</sup>

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<sup>59</sup> Available at <[http://www.ffiec.gov/ffiecinfobase/booklets/e\\_banking/ebanking\\_01\\_risks.html](http://www.ffiec.gov/ffiecinfobase/booklets/e_banking/ebanking_01_risks.html)> (last accessed 19-11-10).

<sup>60</sup> David Murphy, *Understanding Risk The Theory and Practice of Financial Risk Management* (Boca Raton: Chapman & Hall/ CRC, 2008), 43.

<sup>61</sup> Ibid,

<sup>62</sup> Available at <<http://www.itriskmgt.com/experience.html>> (last accessed 21-11-10).

### **2.6.8 Price risk.**

“Price risk is normally associated with instruments traded on well-defined markets, though increasingly, techniques are used to assess the risk arising from over the counter instruments or traded items where the market is not very liquid”.<sup>63</sup> “Banks may be exposed to price risk, if they create or expand deposit brokering, loan sales or securitization programs as a result of Internet banking activities”.<sup>64</sup>

The administrative systems should be maintained in such a manner to control, measure, and manage price risk if resources are actively traded.

### **2.6.9 Money Laundering Risk.**

“As internet banking transactions are conducted remotely, banks may find it difficult to apply traditional method for detecting and preventing undesirable criminal activities”.<sup>65</sup> The rules of money laundering may also be unsuitable for some forms of electronic transactions. Thus Bank exposes them to the money laundering risk. To avoid this risk, banks require designing proper customer recognition and screening techniques.

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<sup>63</sup> Shelagh Heffernan, *Modern Banking* (Chichester: John Wiley & Sons Ltd, 2005), 107.

<sup>64</sup> Internet Banking Comptroller's Handbook October 1999,

<sup>65</sup> Hemant S. Ahluwalia, *Banking and Financial services* (New Delhi: Adhyayan Publishers & Distributors, 2008), 267.

## **CHAPTER: 3**

### **APPLICABLE LAWS AND LEGAL ISSUES IN INTERNET BANKING**

Following are the applicable laws and legal issues pertaining to internet banking in Pakistan.

1. **Electronic Transaction Ordinance, 2002.**
2. **The Payment Systems and Electronic Fund Transfers Act, 2007.**
3. **Prevention of Electronic Crimes Ordinance, 2009.**

#### **3.1 Electronic Transaction Ordinance, 2002.**

The Electronic Transactions Ordinance, 2002 hereinafter referred to as ETO, 2002 was the first law pertaining to e-Banking in Pakistan. This was an initial step and a solid foundation for legal inviolability and protection for Pakistani e-Commerce locally and globally. This Law also laid the base for comprehensive Legal transportation.

The first chapter is titled as "Preliminary" and also consists of 27 definitions of the terms used in this Ordinance. The second chapter has the heading as "Recognition and presumption" and consists of ten sections. The third chapter is named as "Electronic Documents" whereas the fourth chapter has only one section named as "Certification service providers. The fifth chapter is titled as "certification council". The sixth chapter has the heading "amendments of certain laws" and also has three sections. Chapter seventh

is pertaining to “other laws and jurisdiction” and has 3 sections. Chapter eight is titled as “offences” and whereas the Last chapter of this law is covering “Miscellaneous” topics.

### **3.2 Core Sections of Electronic Transaction Ordinance, 2002.**

After thorough perusal of the ETO, 2002 we think that the following core sections need to be highlighted:

#### **1) Violation of privacy of information.**

Section 36 of ETO, 2002 says, “that any person who gains or attempts to gain access to any information system with or without intent to acquire the information contained therein or to<sup>+</sup> gain knowledge of such information, whether or not he is aware of the nature or contents of such information, when he is not authorised to gain access, as aforesaid, shall be guilty of an offence under this Ordinance punishable with either description of a term not exceeding seven years, or fine which may extend to one million rupees, or with both”.<sup>1</sup> In **P L D 2009 Lahore 254** the court punishes the offender under section 36 of ETO, 2002.

#### **2) Damage to information system, etc.**

With regard to Damage to information provided in subsection 1 of Section 37 of ETO, 2002 says “that any person who does or attempts to do any act with intent to alter, modify,

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<sup>1</sup> Electronic Transaction Ordinance, 2002. Section 36. Available at <<http://pakistan.gov.pk/itandtelecom-division/publications/eto.pdf>> (last accessed 01-12-10).

delete, remove, generate, transmit or store any information through or in any information system knowingly that he is not authorized to do any of the foregoing, shall be guilty of an offence under this Ordinance”.<sup>2</sup>

Sub-Section 2 of Section 37 of ETO, 2002 further describes “that any person who does or attempts to do any act with intent to impair the operation of, or prevent or hinder access to, any information contained in any information system, knowingly that he is not authorized to do any of the foregoing, shall be guilty of an offence under this Ordinance”.<sup>3</sup>

The third part of section 37 of ETO, 2002 deals with punishments of the above crimes and says in this regard “that the offences under sub-section (1) and (2) of this section will be punishable with either description of a term not exceeding seven years or fine which may extend to one million rupees or with both”.<sup>4</sup>

### **3) Offences to be non-bailable, compoundable and cognizable.**

Section 38 deals with the nature of the Offences and it say “that all offences under this Ordinance shall be non-bail able, compoundable and cognizable”.<sup>5</sup>

### **4) Prosecution and trial of offences.**

With regard to prosecution and trial of offences, Section 39 of the ETO, 2002 says “that no Court inferior to the Court of Sessions shall try any offence under this Ordinance”.<sup>6</sup>

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<sup>2</sup> Ibid, section 37 (1).

<sup>3</sup> Ibid, section 37 (2).

<sup>4</sup> Ibid, section 37 (3).

<sup>5</sup> Ibid, section 38.

<sup>6</sup> Ibid, section 39.



## **5) Application to acts done outside Pakistan.**

The section 32 of this law says that “the provisions of this Ordinance shall apply notwithstanding the matters being the subject hereof occurring outside Pakistan, in so far as they are directly or indirectly connected to, or have an effect on or bearing in relation to persons, information systems or events within the territorial jurisdiction of Pakistan”.<sup>7</sup>

### **3.3 Legal issues in ETO, 2002.**

Following important legal issues have not covered in this law specifically:

#### **1) Signatory.**

In Pakistan the Banks used the word signatory in internet Banking form but who is signatory is not defined in the Law. To secure the electronic signature the signature-creation data, signature-creation device and signature-verification data should also defined. The word Signatory should be defined as “a person who holds a signature-creation device and acts either on his own behalf or on behalf of the person he represents”.

#### **2) Conduct of the signatory.**

To make the signatory responsible, the conduct of signatory is also very important to define as where signature creation data can be used to create a signature that has legal effect, each signatory shall:

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<sup>7</sup> Ibid, section 32.

- “(a) Exercise reasonable care to avoid unauthorized use of its signature creation data;
- (b) Without undue delay, use reasonable efforts, to notify any person that may reasonably be expected by the signatory to rely on or to provide services in support of the electronic signature.
- (c) Where a certificate is used to support the electronic signature, exercise reasonable care to ensure the accuracy and completeness of all material representations made by the signatory”.<sup>8</sup>

A signatory shall bear the legal consequences of its failure to satisfy the requirements.

### **3) Use of Pseudonym.**

Use of Pseudonym should also be allowed in the Pakistani Law as it facilitates the customers with more secure and satisfactory manner.

1. “If requested by the applicant the certification-service provider can use a pseudonym instead of his name in the qualified certificate”.<sup>9</sup>
2. “The pseudonym can also be used for the data on the qualified certificate in conformity with this Law, provided the third party or the responsible body gives prior approval”.<sup>10</sup>

### **4) Trustworthy Hardware and Software.**

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<sup>8</sup> UNCITRAL Model Law on Electronic Signatures with Guide to Enactment 2000. Available at <[http://www.csk-online.org/library/ict\\_act.pdf](http://www.csk-online.org/library/ict_act.pdf)> (last accessed 01-12-10).

<sup>9</sup> Available at <[http://www.mete.gov.al/doc/20080716095903\\_ligji\\_nenshkrimit\\_elektronik\\_eng.pdf](http://www.mete.gov.al/doc/20080716095903_ligji_nenshkrimit_elektronik_eng.pdf)> (last accessed 02-12-10).

<sup>10</sup> Ibid,

One of the major elements in internet banking is the Trustworthy Hardware and Software applied in the internet banking. "A certification-service-provider providing qualified certificates to the public shall ensure that the systems, hardware and software it uses are sufficiently trustworthy as well as protected against alterations and forgery".<sup>11</sup>

Hardware or software relating to electronic signatures is deemed to fulfill the requirements.

#### **5) Signature Creation Device Security.**

Keeping in view the security and to secure the signature, the certification service provider shall obtain suitable proof that the applicant owns the relevant secure signature creation device.

#### **6) Obligation to Inform on Security.**

"The obligations of certification-service providers are as;

1. The certification-service provider shall inform the applicant of the measures needed to increase the security of qualified electronic signatures and shall test them reliably.
2. The certification-service provider shall inform the applicant that the qualified electronic signature data may have to be signed again if the security value of the current signature is reduced by the passage of time".<sup>12</sup>

#### **7) The inspection body.**

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<sup>11</sup> Act on Electronic signatures 2003. Available at < <http://media.parliament.org.ua/uploads/files/f643.pdf>> (last accessed 01-12-10).

<sup>12</sup> Republic of Albania the parliament, Law ON ELECTRONIC SIGNATURE 2008. Available at <[http://www.mete.gov.al/doc/20080716095903\\_ligji\\_nenshkrimet\\_elektronik\\_eng.pdf](http://www.mete.gov.al/doc/20080716095903_ligji_nenshkrimet_elektronik_eng.pdf)>.(last accessed 01-12-10).

The Communications Regulatory Authority may designate inspection body to assess whether a signature-creation device meets the requirements laid down. The inspection body may be private or public.

“The designation of an inspection body shall require that:

- 1) the inspection body is functionally and financially independent;
- 2) its operations are reliable, appropriate and non-discriminatory;
- 3) it has sufficient financial resources to arrange its operations appropriately and to cover any liability for damages;
- 4) it has a sufficient professional and unbiased personnel; and that
- 5) it has the facilities and equipment necessary for its operations”.<sup>13</sup>

**8) No remedy for recovery of financial losses.**

We are of the view that Crimes have been defined in this law of ETO, 2002 and punishments have also been prescribed for the Offenders but in case due to the offence any financial losses are occurred to any person then there are no provisions in this law which can be applied for the recovery of these financial losses.

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<sup>13</sup> Act on Electronic signatures 2003. Available at <  
<http://www.mintc.fi/www/sivut/suomi/tele/saadokset/telecom/norms/14-2003en.htm>> (last accessed 01-12-10).

### **3.4 The Payment Systems and Electronic Fund Transfers Act, 2007.**

The Payment Systems and Electronic Fund Transfers Act hereinafter referred to as PSEFT Act, 2007 was enacted in 2007 which provides more protection to the electronic transactions. Section 2(s) of PSEFT Act, 2007 deals with Electronic Fund or Electronic Money that “means money transferred through an Electronic Terminal, ATM, telephone instrument, computer, magnetic medium or any other electronic device so as to order, instruct or authorize a banking company, a Financial Institution or any other company or person to debit or credit an account and includes monetary value as represented by a claim on the issuer which is stored in an electronic device or Payment Instrument, issued on receipt of funds of an amount not less in value than the monetary value issued, accepted as means of payment by undertakings other than the issuer and includes electronic store of monetary value on a electronic device that may be used for making payments or as may be prescribed by the State Bank”.<sup>14</sup>

The first chapter is regarding “preliminary” and also contained the definition of 30 terminology (words) used in this chapter. The second chapter is titled as “Payment Systems and their Operation” and consists of 8 Sections.

The third chapter is named as “payments instruments” which deals with the Designation of Payment Instrument, Issuing of Designated Payment Instruments, Prohibition of Issuance of Payment Instruments, Security, Third Party and Payment by Truncated Cheque.

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<sup>14</sup> Payment Systems and Electronic Fund Transfers Act, 2007. section 2(s). Available at <[http://sbp.org.pk/psd/2007/EFT\\_ACT\\_2007.pdf](http://sbp.org.pk/psd/2007/EFT_ACT_2007.pdf)> (last accessed 04-12-10).

The forth chapter is pertaining to “clearing and other obligations” and it deals with audits and inspections, significant changes, responsibility of participants, settlements provisions & rules, rights and their preservations and electronic money institutions.

Supervisory control of the state bank is the subject matter of fifth chapter.

The sixth chapter is named as “documentation of transfers” and aspects of availability of documents and proof, periodic statement, documentation as evidence and pre-authorized transfer have been clarified.

The seventh chapter is regarding the “Notification of Error” wherein the correction and absence of error have been taken up and the entailing damages have been spelt out.

The eighth chapters is about the “Liability of parties”, especially the consumers and financial institutions, with reference to the burden of proof, liability in case of extension of credits, Acts of God & malfunctions, prohibitions suspensions and waiver of rights.

The ninth chapter is titled as “Action before the court” and it deals with the matter such as damages, confide errors, actions in good faith, notification to consumers and jurisdiction of courts, criminal liability, violations regarding foreign commerce and cheating by use of electronic device.

The last chapter of this legislation is “Miscellaneous”.

### **3.5 Core Sections of Payment Systems and Electronic Fund Transfers Act, 2007.**

After thorough perusal of the PSEFT Act, 2007 we think that the following core sections need to be highlighted:

#### **1) Consumer's Liability.**

Section 40 of PSEFT Act, 2007 says "that a consumer shall be liable for any unauthorized Electronic Fund Transfer involving the Account of such consumer only if the card or other means of access utilized for such transfer was an Accepted Card or other means of access and if the issuer of such card, code or other means of access has provided a means whereby the user of such card, code or other means of access can be identified as the person authorized to use it, such as by signature, photograph, or finger print or by electronic or mechanical confirmation".<sup>15</sup>

#### **2) Burden of Proof.**

In respect of Burden of Proof Section 41 of PSEFT Act, 2007 says "that in any action which involves a consumer's liability for an unauthorized Electronic Fund Transfer, the burden of proof shall be upon the Financial Institution or the Authorized Party to show that the Electronic Fund Transfer was authorized or, if the Electronic Fund Transfer was authorized, then the burden of proof shall be upon the Financial Institution or the Authorized Party to establish that the conditions of liability set forth in this Act were met, and the disclosures

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<sup>15</sup> Ibid, section 40. Available at <[http://sbp.org.pk/psd/2007/EFT\\_ACT\\_2007.pdf](http://sbp.org.pk/psd/2007/EFT_ACT_2007.pdf)> (last accessed 04-12-10).

required to be made to the consumer under this Act were in fact made in accordance with the provision thereof".<sup>16</sup>

### **3) Damages.**

With regard to damages Section 50 of PSEFT Act, 2007 delineate "that except as otherwise provided by this section or the provisions of this Act, any person who fails to comply with any provision of this Act with respect to any other person, except for an error resolved in accordance with the provisions of this Act, shall, upon an action brought before a court, be liable to such person for payment of an amount equal to the sum of any actual damage sustained by that person as a result of such failure".<sup>17</sup>

### **4) Jurisdiction of Courts.**

The jurisdiction of Courts is described under Section 55 of PSEFT Act, 2007 which is as follows;

"(1) With regard to the amount in controversy, any civil action under this Act may be brought in any court of competent jurisdiction.

(2) The court exercising jurisdiction shall not adjourn the case for more than ten days at a time; provided that the aggregate of adjournments granted to the defendant shall not exceed three.

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<sup>16</sup> Ibid, section 41.

<sup>17</sup> Ibid, section 50.



(3) The court shall announce its judgment within ninety days after notice upon the defendant in the case was first served”.<sup>18</sup>

### **5) Criminal Liability.**

The provision regarding criminal liability is elucidated in Section 56 of PSEFT Act, 2007 as “Whoever knowingly and willfully gives false information or inaccurate information or fails to provide information which he is required to disclose by this Act or any instruction issued there under, or otherwise fails to comply with any provision of this Act shall be punished with imprisonment of either description which may extend to three years, or with fine which may extend to three million rupees, or with both”.<sup>19</sup>

### **6) Trial of Offence.**

Section 63 of PSEFT Act, 2007 says that the trial of offence shall be conducted as;

“(1) Notwithstanding anything to the contrary provided by any other law for the time being in force, offences provided for in Chapter IX of this Act shall be tried by the Court of Sessions, having territorial jurisdiction in the case, which shall observe the same procedure as provided for trial of offences by the Code of Criminal Procedure, 1898 (Act V of 1898).

(2) Cognizance shall be taken by the court upon a report of facts made in writing by a police officer or upon receiving a complaint of facts which constitute the offence.

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<sup>18</sup> Ibid, section 55.

<sup>19</sup> Ibid, section 56.

(3) In case of a complaint, the court may postpone the issue of process for attendance of the person complained against and refer the complaint to the officer-in-charge of a police station for investigation and report”.<sup>20</sup>

## **7) Procedure.**

The detail about the procedure is given in Section 66 of PSEFT Act, 2007 that it shall be followed as described below;

“(1) Notwithstanding anything to the contrary provided in this Act or any other law for the time being in force, no Court or authority or officer shall take cognizance of any offence against this Act which is alleged to have been committed by any person, party, participant, Service Provider, operator or Financial Institution or any officer or auditor thereof, who is authorized, licensed or designated under the Act, except on the complaint in writing of the State Bank:

Provided that nothing in this sub-section shall apply to a prosecution by a person, party, participant, Service Provider, operator or Financial Institution or any of its officers or employees:

Provided further that, where the State Bank is itself empowered to impose a penalty or fine, it may take cognizance of the offence and start proceedings on the basis of a memorandum of allegations placed on record by an officer of State Bank:

(2) Notwithstanding anything contained in the Code of Criminal Procedure, 1898 (Act V of 1898), the personal attendance of the complainant before the Court or authority trying the

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<sup>20</sup> Ibid, section 63.

offence shall not be necessary unless the Court, for reasons to be recorded, requires his personal attendance at the trial".<sup>21</sup>

#### **8) Penalties.**

The Penalties are described in Section 74 of PSEFT Act, 2007 which says "that the person who shall be failed to comply with the provisions of this Act shall be liable to the following penalties;

(1) Any financial Institution or Service Provider, who willfully fails to comply with any provision of this Act or rules, circulars, directions, orders or bye-laws issued under this Act or any provision thereof, shall be liable to pay fine to the State Bank which may extend to one million rupees.

(2) In case of failure to pay the fine, State Bank may suspend or revoke the license of the Service Provider or Financial Institution concerned, as the case may be.

(3) If any amount of fine under sub-section (1) remains unpaid, it may be recovered as arrears of land revenue".<sup>22</sup>

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<sup>21</sup> Ibid, section 66.

<sup>22</sup> Ibid, section 74.

### **3.6 Legal issues in PSEFT Act, 2007.**

Following important legal issues have not covered in this law:

#### **1) Inter-Bank Payment System.**

Interbank payment systems are arrangements through which payments are made between banks for their own account or on behalf of their customers.

The Inter-Bank Payment System consists of IBCS (Inter-Bank Clearing System) and SAPS (Settlement Accounting Processing System).

##### **i) Inter-Bank Clearing System (IBCS)**

The Inter-Bank Clearing System handles the clearing of all domestic electronic inter-bank payments.

##### **ii) Settlement Accounting Processing System (SAPS)**

“SAPS interacts with systems, initially just IBCS that require settlement of Inter-Bank Payments. SAPS holds and maintains the centralized settlement accounts which are an integral part of the Inter-Bank Payment System”.<sup>23</sup>

By the above explanation it is clear that the fund transfer and payments systems are mostly interbank in nature so it is the need of the time that the relationship between Banks/financial institutions and clients must be well defined to avoid the legal issues arising out of such transaction. The relationship between cardholder and the card issuer should also be well defined.

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<sup>23</sup> Jerry park, “Interbank payment system” Global IT Business Dept.Hyundai Information Technology. Available at <[http://www.hit.co.kr/chomepage/file/support\\_d/whitepaper02.pdf](http://www.hit.co.kr/chomepage/file/support_d/whitepaper02.pdf)> (last accessed 06-12-10).

## **2) Customer's Personal Data Protection.**

The payment and electronic fund transfer system facilitates the customer's but along with it there is a great issue of Customer's personal Data Protection.

The success of this payment system depends upon the safe and attractive environment. Customer's personal data should be kept private and protected. As there is no provision in this law that what extent the personal data is protected and who can get access to it in case of necessity.

For the promotion of electronic payment system the banks should also issue detailed guidelines on the regular bases to address these issues.

## **3) Jurisdiction and Harmonization.**

Jurisdiction and Harmonization are also important aspects which by standard are required to be an essential part of any legislation and as also in the context of electronic fund transfers and payment system. The choice of the forum and choice of law are important issues which need to be addressed by the law makers.

Electronic payment system is global in nature to avoid the problem of choice of the forum the national legislatures must put some provisions regarding these issues.

Unfortunately the concept of Harmonization are seems to be far away from the minds of the legislatures.

The only reference to the jurisdiction in the entire Act is section 54 by using the following words

“.....in any court of competent jurisdiction.....”

In international level transaction the difficulty of determining the jurisdiction is a major issue because of global nature of these transactions and inability of national jurisdiction to enforce foreign judgment further complicates matter.

By the above observation it can be said that Payment system and Electronic fund transfer Act 2007 is a domestic level law and does not address such issue that may arise out of cross broader electronic transaction.

So it is thus suggested that these two interconnected issues should be addressed in Payment system and Electronic fund transfer Act, 2007 keeping in view the importance of international level transaction. Keeping in view this importance the law maker should also take guidance from the model UNCITRAL Laws.

The adoption of these laws to the legal requirements of Pakistan have to be balanced in such a way that it attains maximum degree of interpretability and lesser variation with the laws of other countries.

### **3.7 Prevention of Electronic Crime Ordinance, 2009.**

The Prevention of Electronic Crimes Ordinance, 2009 hereinafter referred to as PECO, 2009 was enacted for the prevention of electronic crimes in electronic transactions by different moods.

Note: It may be noted that The Prevention of Electronic Crimes Ordinance, 2009 has already been expired and has become ineffective applicable law. However it may be passed by parliament in future.

But I would like to analysis the core sections of this law.

The first chapter is titled as “Preliminary” and also consists of 27 definitions of the terms used in this Ordinance. The second chapter has the heading as “Offences and punishments” and consists of 19 sections. The third chapter is named as “Prosecution and trial of offences” and has three sections whereas the fourth chapter “Establishment of investigation and prosecution agencies” and has 5 sections.

The fifth chapter is titled as “International cooperation” has only one section. The sixth chapter has the heading “Information and communication technologies tribunal” and also has 15 sections. Chapter seventh is pertaining to “MISCELLANEOUS” and consists of 4 sections.

### **3.8 Core Sections of Prevention of Electronic Crimes Ordinance, 2009.**

Following core sections seem to be reproduced and explained:

#### **1) Criminal Access.**

Section 3 of PECO, 2009 says “that whoever intentionally gains unauthorized access to the whole or any part of an electronic system or electronic device with or without infringing security measures, shall be punished with imprisonment of either description for a term which may extend to two years, or with fine not exceeding three hundred thousand rupees, or with both”.<sup>24</sup>

#### **2) Criminal Data Access.**

In respect of criminal data access Section 4 of PECO, 2009 says “that whoever intentionally causes any electronic system or electronic device to perform any function for the purpose of gaining unauthorized access to any data held in any electronic system or electronic device or on obtaining such unauthorized access shall be punished with imprisonment of either description for a term which may extend to three years, or with fine or with both”.<sup>25</sup>

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<sup>24</sup> Prevention of Electronic Crimes Ordinance, 2009, section 3. Available at <http://www.amlaw.pk/blog/2008/12/10/electronic-crime-cyber-crime-ordinance-act-law-credit-card-fraud-spam-spoof-forgery-malicious-online-internet-pakistan/> (last accessed 06-12-10).

<sup>25</sup> Ibid, section 4.



### **3) Data Damage.**

To clear the concept of data damage section 5 of PECO, 2009 says “that whoever with intent to illegal gain or cause harm to the public or any person, damages any data shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both”.<sup>26</sup>

Explanation .- “For the purpose of this section the expression “data damage” includes but not limited to modifying, altering, deleting, deterioration, erasing, suppressing, changing location of data or making data temporarily or permanently unavailable, halting electronic system, choking the networks or affecting the reliability or usefulness of data”.<sup>27</sup>

### **4) System Damage.**

Section 6 of PECO, 2009 says “that whoever with intent to cause damage to the public or any person interferes with or interrupts or obstructs the functioning, reliability or usefulness of an electronic system or electronic device by inputting, transmitting, damaging, deleting, altering, tempering, deteriorating or suppressing any data or services or halting electronic system or choking the networks shall be punished with imprisonment of either description for a term which may extend to three years, or with fine or, with both”.<sup>28</sup>

Explanation .- For the purpose of this section the expression “services” include any kind of service provided through electronic system.

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<sup>26</sup> Ibid, section 5.

<sup>27</sup> Ibid,

<sup>28</sup> Ibid, section 6.

### **5) Electronic Fraud.**

Section 7 of PECO, 2009 deals “with electronic forgery and describes it as whoever for wrongful gain interferes with or uses any data, electronic system or electronic device or induces any person to enter into a relationship or with intent to deceive any person, which act or omission is likely to cause damage or harm to that person or any other person shall be punished with imprisonment of either description for a term which may extend to seven years, or with fine, or with both”.<sup>29</sup>

### **6) Electronic Forgery.**

Section 8 of PECO, 2009 says “that whoever for wrongful gain interferes with data, electronic system or electronic device, with intent to cause damage or injury to the public or to any person, or to make any illegal claim or title or to cause any person to part with property or to enter into any express or implied contract, or with intent to commit fraud by any input, alteration, deletion, or suppression of data, resulting in unauthentic data with the intent that it be considered or acted upon for legal purposes as if it were authentic, regardless of the fact that the data is directly readable and intelligible or not shall be punished with imprisonment of either description for a term which may extend to seven years, or with fine or with both”.<sup>30</sup>

### **7) Unauthorized access to code.**

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<sup>29</sup> Ibid, section 7.

<sup>30</sup> Ibid, section 8.

Section 10 of PECO, 2009 depicts “that whoever discloses or obtains any password, access as to code, system design or any other means of gaining access to any electronic system or data with intent to obtain wrongful gain, do reverse engineering or cause wrongful loss to any person or for any other unlawful purpose shall be punished with imprisonment of either description for a term which may extend to three years, or with fine, or with both”.<sup>31</sup>

#### **8) Cyber stalking.**

With regard to cyber stalking Section 13 of PECO, 2009 says as follows:

“(1)Whoever with intent to coerce, intimidates, or harasses any person uses computer, computer network, internet, network site, electronic mail or any other similar means of communication to;

(a) communicate obscene, vulgar, profane, lewd, lascivious , or indecent language, picture or image;

(b) make any suggestion or proposal of an obscene nature;

(c) threaten any illegal or immoral act;

(d) take or distribute pictures or photographs of any person without his consent or knowledge; or

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<sup>31</sup> Ibid, section 10.

(e) display or distribute information in a manner that substantially increases the risk of harm or violence to any other person, commits the offence of cyber stalking”.<sup>32</sup>

(2) “Whoever commits the offence specified in sub-section (1) shall be punishable with imprisonment of either description for a term which may extend to seven years or with fine not exceeding three hundred thousand rupees, or with both:

Provided that if the victim of the cyber stalking under sub-section (1) is a minor the punishment may extend to ten years or with fine not less than one hundred thousand rupees, or with both”.<sup>33</sup>

#### **9) Information and Communication Technologies Tribunal.**

Section 31 of PECO, 2009 deals with Information and Communication Technologies Tribunal and describes as;

a. “As soon as possible after the commencement of this Ordinance, the Federal Government shall, by notification in the official Gazette, constitute the Information and Communication Technologies Tribunal whose principal seat shall be at Islamabad.

b. The Tribunal may hold its sittings at such place or places as the Federal Government may decide.

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<sup>32</sup> Ibid, section 13.

<sup>33</sup> Ibid, section 13.

c. The Tribunal shall consist of a chairman and as many members as the Federal Government may determine but not more than seven members.

d. The Chairman may constitute Benches of the Tribunal and unless otherwise directed by him a Bench shall consist of not less than two members. A Bench shall exercise such powers and discharge such functions as may be prescribed. There shall be established at least one Bench in each province”.<sup>34</sup>

#### **10) Appeal to Tribunal.**

The appeal to tribunal is provided in Section 40 of PECO, 2009 which says “that any person aggrieved by any of the following orders may, within fifteen days from the date of such order, prefer an appeal to the Tribunal”.<sup>35</sup>

#### **11) Civil court not to have jurisdiction.**

Section 44 of PECO, 2009 narrates the issue of jurisdiction and says “that no court shall have jurisdiction to entertain any suit or proceeding in respect of any matter which the Tribunal constituted under this Ordinance is empowered by or under this Ordinance to determine and no injunction shall be granted by any court or other authority in respect of any action taken or to be taken in pursuance of any power conferred by or under this Ordinance.”<sup>36</sup>

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<sup>34</sup> Ibid, section 31.

<sup>35</sup> Ibid, section 40.

<sup>36</sup> Ibid, section 44.

### 3.9 Legal issues in Prevention of Electronic Crimes Ordinance, 2009.

Following important legal issues have not covered in this law:

#### 1) Salami Attacks.

“The origin of the terminology has a two meaning and both definitions accurately describe the methodology of a salami attack”.<sup>37</sup> “The idea of 'salami slicing' where a small piece is cut off the end with no noticeable difference in the overall length of the original is one way of looking at it”.<sup>38</sup> “Another definition states that the creation of a larger entity comprised of many smaller scraps similar to the contents of salami”.<sup>39</sup> “Either way, salami attacks are looked at as when negligible amounts are removed and accumulated into something larger”.<sup>40</sup>

These attacks are used for committing fiscal crimes. The key here is to formulate the alteration so insignificant that in a single case it would go completely unnoticed.

For instance, a bank employee inserts a program, into the bank's servers, that deducts a small amount of money (say Rs.1 or RS.2 a month) from the account of every customer. No account holder will probably notice this unauthorized debit, but the bank employee will make a sizeable amount of money every month. The attack is called “salami attack”.

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<sup>37</sup> Available at <<http://all.net/CID/Attack/papers/Salami.html>> (last accessed 21-04-2011).

<sup>38</sup> Micki Krause, and Tipton, Harold F. Handbook of Information Security Management; CRC Press - Auerbach Publications 1999.

<sup>39</sup> Doherty. Elementary Practical Background Material for Computer Security and Computer Warfare; Lecture. Available at <http://www.headtrauma.com/sclass1a.ppt> (last accessed 20-4-11).

<sup>40</sup> Available at <<http://www.all.net/CID/Attack/papers/Salami.html>> (last accessed 21-04-2011).

## **2) Web jacking.**

“Web Jacking is just as conventional hijacking of an airplane is done by using force, similarly web jacking means forcefully taking over control of a website”.<sup>41</sup>

The motive is usually the same as hijacking holding. “The perpetrators have either a monetary or political purpose which they try to satiate by holding the owners of the website to ransom”.<sup>42</sup>

This occurs when someone forcefully takes control of a website (by cracking the password and later changing it).

The actual owner of the website does not have any more control over what appears on that website. This act of web jacking should also include in the law.

## **3) Juveniles.**

In PECO, 2009 there is no provision regarding the prosecution of juvenile offenders. Most cyber crimes, including computer hacking, are crimes under the laws of most countries. In Pakistan under Prevention of Electronic Crimes Ordinance, 2009 these are also offence. When law includes them as crimes than the legislature should also include provision regarding prosecution of juvenile offenders in new law. “According to the Cyber Crime Unit (CCU), a branch of Pakistan's Federal Investigation Agency (FIA), 62 cases were reported to the unit in 2007, 287 cases in 2008 and the ratio dropped in 2009 but in 2010 more than 312

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<sup>41</sup> Rohas Nagpal, *Evolution of cyber crimes*, Asian school of cyber law.

<sup>42</sup> Ibid,

cases were registered in different categories of cyber crimes”.<sup>43</sup> A CCU official said, “Instead of making constructive use of information technology ( IT) in today's quick life, users are more interested in its misuse and most of the young generation is involved in this crime.”<sup>44</sup>

There should be provisions in the new law that when a juvenile violates a law, he must be turned over to juvenile authorities unless under any circumstances the authorities are unwilling or unable to proceed against him. A country must have adequate facilities for the treatment of juveniles. As juveniles needs to be treated in some special way as they are not mature and degree punishments used for adult people are not adequate for them.

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<sup>43</sup> Available at <<http://english.cri.cn/6966/2011/04/12/2821s631634.htm>> (last accessed 18-11-11).

<sup>44</sup> Ibid,



## CHAPTER: 4

### METHODOLOGY

#### 4.1 Research Method.

Beside the other methodologies of Research, qualitative and quantitative methods are often used in social sciences research studies. "Quantitative research involves numerical representation and manipulation observation for the purpose of describing and explaining the phenomena that those observations reflect, qualitative research on the other hand involves non-numerical examination and interpretation of observation for the purpose of discovering the underlying meaning and pattern of relationships".<sup>1</sup> Qualitative research emphasis the process and meaning that are not rigorously examined or measured. "In contrast, quantitative study emphasis measurement and analysis of causal relationships between variables, not processes".<sup>2</sup> "In quantitative research variables and relationships are the central idea".<sup>3</sup> "Quantitative research is useful in providing detailed planning prior to data collection and analysis, because it provided tools for measuring concepts, planning design stages and for dealing with population and sampling issues".<sup>4</sup> "In addition, a quantitative research approach

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<sup>1</sup> ALSAAB SAIF ABDULLAH S, "SMS BANKING IN SAUDI ARABIA" Published Master thesis (submitted to Department of College Business in Partial Universiti Utara Malaysia, 31).

<sup>2</sup> A. L. Casebeer, and M. J. Verhoef. *Combining qualitative and quantitative research methods: Considering the possibilities for enhancing the study of chronic diseases*. Chronic Diseases in Canada 18, 1997), 130-5.

<sup>3</sup> W. L Neuman, *Social Research Methods: Qualitative and Quantitative Approahe* (Boston: Pearson Education Inc, 2003), 16.

<sup>4</sup> Ibid,

utilizes a deductive model in testing the relationship between variables and to provide evidence for or against pre-specific hypothesis".<sup>5</sup>

**Quantitative vs. Qualitative research. Source: Chisnal, 1997<sup>6</sup>**

	<b>Qualitative Research</b>	<b>Quantitative Research</b>
Objective	To gain qualitative understanding of underlying reasons and motivations	To quantify the data and generalized results from sample to the population of interest
Sample	Small number of non-representative cases	Large number of representative Cases
Data Collection	Unstructured	Structured
Data Analysis	Non-statistical	Statistical
Outcome	Develop an initial understanding	Recommend a final course of Action

As we have already defined in Chapter 1 that the main object of this study is to find factors influencing the adoption and to critically analyze the applicable laws and legal issues of internet banking. For achieving this, we have chosen a structured framework and developed our research hypothesis. We are going to analyze the data collected from sample customers and generalize the data to population. So this theory will be tested by using quantitative research method.

<sup>5</sup> Ibid,

<sup>6</sup> Available at <[http://web.mac.com/malinsmac/malinsajt/Marknadsforskning\\_files/marknadsforskning2.pdf](http://web.mac.com/malinsmac/malinsajt/Marknadsforskning_files/marknadsforskning2.pdf)> (last accessed 07-08-11).

## 4.2 Inductive versus Deductive Research Approach.

The two theoretical research approaches propose two different ways of drawing conclusions when conducting research. The inductive research approach can be defined as “The logical process of establishing the general proposition on the basis of observation research approach can be defined as “the logic process of deriving a conclusion from unknown premise or something known to be true”.<sup>7</sup>

“When deciding what research approach to adopt, Saunders et al. (2000) suggest number criteria”.<sup>8</sup> Probably the most important condition is the nature of the research topic.

If there is a lot of literature about the topic from which a speculative framework can be defined.

It is often appropriate to use the deductive approach. In opposition, when researching a topic that is new and little existing literature can be found, it may be more appropriate to use an inductive approach. “The time available for the study is another factor that needs to be considered as Inductive research is often more time consuming because it is based on a longer period of data collection and analysis, and the ideas emerge gradually”.<sup>9</sup> So the inductive research is applicable on my research as a lot of time period and analysis work is done in this research.

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<sup>7</sup> W.G Zikmund, *Business research Methods* (3<sup>rd</sup> ed) ( Fort Worth: Harcourt college publishers, 2000).

<sup>8</sup> M Saunders et al, *Research Methods for business students* (2nd ed.) (Essex: Pearson Educations, 2000).

<sup>9</sup> Sara Naimi Baraghani, “Factors Influencing the adoption of Internet Banking “Published Master thesis (submitted to Department of Business Administration and Social Science, Lulea university of Technology Sweden, 26).

### 4.3 Research Strategy.

According to Yin (1994), “the most important condition for differentiating among various research strategies is to identify the research question being asked”.<sup>10</sup> There are five main research strategies to use when collecting and analyzing empirical evidences: experiment, Survey, Archival analysis, History and case study.

“Each strategy has its advantages and disadvantages depending on:

- a) The type of research question
- b) Investigator’s control over actual behavior events
- c) the focus on contemporary versus historical phenomena”.<sup>11</sup>

The boundaries between the methods are not always sharp and clear, and they often overlap each other.

We have applied Survey strategy based on questionnaires for collecting information to conclude our study being relevant strategy.

#### 4.3.1 Survey.

“It’s a research technique in which information is collecting by interviews with a large number of respondents using a pre-designed questionnaire”.<sup>12</sup> This research technique has three important characteristics:

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<sup>10</sup> R.K.Yin, *Case study Research-Design and Methods* (2nd ed.) (Thousand Oaks, CA: sage publications, 1994), 22.

<sup>11</sup> Ibid,

<sup>12</sup> W. G Zikmund, “*Business Research Methods*” (4th. Ed.). (Orlando: The Dryden Press, 1994), 45.

**I. Purpose:** The purpose of survey research is to fabricate quantitative descriptions of some aspects of the study population. "Survey analysis may be primarily concerned either with relationships between variables, or with projecting findings descriptively to a predefined population".<sup>13</sup>

"Survey research is a quantitative method, requiring standardized information from and/or about the subjects being studied".<sup>14</sup> "The subjects studied might be individuals, groups, organizations or communities; they also might be projects, applications, or systems".<sup>15</sup>

**II. Procedure:** The focal technique of collecting information is by asking people prearranged and predefined questions. "Their answers, which might refer to themselves or some other unit of analysis, constitute the data to be analyzed".<sup>16</sup>

**III. Analyses:** "Information is generally collected about only a fraction of the study population, but it is collected in such a way as to be able to take a broad view of the whole population".<sup>17</sup> Usually, the sample is large enough to allow extensive statistical analyses.

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<sup>13</sup> R.K.Yin, *Case study Research-Design and Methods* (2nd ed.) (Thousand Oaks, CA: sage publications, 1994), 36.

<sup>14</sup> Saadullah Khan, Adoption issues of Internet banking in Pakistani Firms, published Master's Thesis (submitted to Department of Business Administration and Social Science, Lulea University Sweden, 38).

<sup>15</sup> Ibid,

<sup>16</sup> R.K.Yin, *Case study Research-Design and Methods* (2nd ed.) (Thousand Oaks, CA: sage publications, 1994), 36.

<sup>17</sup> Saadullah Khan, Adoption issues of Internet banking in Pakistani Firms, published Master's Thesis (submitted to Department of Business Administration and Social Science, Lulea University Sweden, 38).

### Relevant situation for different research strategies.

Source Yin, 1994, P.6<sup>18</sup>

Strategy	Form of Research Question	Requires Control Over behavioral events?	Focus on Contemporary Events?
Experiment	How, Why	Yes	Yes
Survey	Who, what, where, how many, how much	No	Yes
Archival analysis	Who, what, where, how many, how much	No	Yes/no
History	How, why	No	No
Case Study	How, why	No	Yes

The research strategy depends on characteristics of the stated research question.

The main goal of this study is to find the factors influencing adoption of internet banking from customer point of view, the study focuses on contemporary event, does not require control over behavioral events and the research question of this study is in form of *what*, so the most appropriate strategy is survey.

#### 4.4 Sampling.

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<sup>18</sup> R.K Yin, *Case Study research: design and methods*, 2<sup>nd</sup> edition (Thousands Oak: sage Publication , 1994),56.

The population of interest was defined in various banks customers who were internet users. Since we were interested in concept of intention the respondents who are using the internet banking.

#### **4.4.1 Selecting the Sampling Technique.**

Traditional sampling method can be divided into two categories:<sup>19</sup>

##### **I. Probability Sampling.**

##### **II. Non-probability Sampling.**

##### **I. Probability Sampling.**

“In probability sampling, the sample is selected in such a way that each unit within the population has a known chance of being selected”.<sup>20</sup> “It is this concept of "known chance" that allows for the statistical projection of characteristics based on the sample to the population”.<sup>21</sup> The advantage of probability sampling is that sampling error can be calculated. Sampling error is the degree to which a sample might differ from the population. Probability sampling is applied in this research.

Probability method includes.

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<sup>19</sup> B Blumberg et al, *Business Research methods* (McGraw-Hill Education, 2005).

<sup>20</sup> M Saunders et al, *Research Methods for business students*, 2nd ed (Essex: Pearson Educations, 2002).

<sup>21</sup> Ibid,

- Random sampling
- Systematic sampling
- Stratified sampling

#### **4.5 Questionnaire.**

After extended literature review questionnaire was formulated. The questionnaire was in English language. The final questionnaire was divided in two parts. The first part of questionnaire having general information about respondent like age, occupation, gender, age. The second part is about views of respondent about internet banking. The four point like scale is used for statements of the second part ranging from “1” for strongly agree, “2” agree, “3” disagree, “4” for strongly disagree.

#### **4.6 Data collection.**

In this study survey is used as a data collection method. As we mentioned before the main goal of this study is to found factors influencing the adoption of internet banking from customer point of view. Sample was taken randomly from customer with internet experiment. Data collection was conducted in various branches of banks in Lahore and Islamabad from the December to the February 2011. Total number of distributed questionnaire was equal to 200. In which 25 was incomplete.



#### **4.7 Quality standard: Validity and Reliability.**

“In order to reduce the possibility to getting wrong answer, attention needs to be paid to Reliability and validity”.<sup>22</sup>

##### **4.7.1 Validity.**

“Validity is concerned with whether the findings are really about what they appear to be about”.<sup>23</sup>

“Validity defined as the extent to which data collection method or methods accurately measure what they were intended to measure”.<sup>24</sup> Yin (1994) states, “no single source has a complete advantage over all others”.<sup>25</sup> The different sources are highly complementary, and a good case study should use as many sources as possible. “The validity of a scientific study increases by using various sources of evidence”.<sup>26</sup>

The following steps were taken to ensure the validity of this research:

1) The needed data was collected in the format of a structured questionnaire that had been designed based on the literature related to adoption of innovation.

##### **4.7.2 Reliability.**

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<sup>22</sup> M Saunders, A Thornhill, Organizational justice, trust and the management of change an exploration, *Personnel Review*, 32: 3 (2003), 360-375.

<sup>23</sup> Ibid,

<sup>24</sup> Ibid,

<sup>25</sup> R.K Yin, *Case Study research: design and methods*, 2<sup>nd</sup> edition (Thousands Oak: sage Publication, 1994), 44.

<sup>26</sup> Ibid,

“Validity is the extent to which a test measures what it claims to measure and it is vital for a test to be valid in order for the results to be accurately applied and interpreted”.<sup>27</sup>

Reliability is also a degree to which measurements are free from error. “It is an indication of the consistency with which the tool or assessment measures what it is designed to measure, excluding extraneous features from such measurement”.<sup>28</sup> Reliability can be assessed by the following questions;

1. “Will the measures yield the same results on other occasions?
2. Will similar observation be reached by other observers?
3. Is there transparency in how sense was made from raw data”?<sup>29</sup>

“The role of reliability is to minimize the errors and biases in a study”.<sup>30</sup> This means that reliability is to ensure that the operations of the study, such as the data collection procedures, can be repeated with the same result. Saunders et al. (2003) asserts that “there may be four threats to reliability;

1. The first of these is subject of participant error, which means that a questionnaire may generate a different result at different times of the week.
2. The second threat to reliability is subject or participant bias, which is when interviewees may have been saying what they thought their bosses, wanted them to say.
3. Third, there may have been observer error that different interviewer may approach the questions in different ways.

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<sup>27</sup> Available at < <http://psychology.about.com/od/researchmethods/f/validity.htm> > (last accessed 06-1-11).

<sup>28</sup> Available at < <http://www.mondofacto.com/facts/dictionary?validity> > (last accessed 06-1-11).

<sup>29</sup> Easterby-Smith et al, *Management Research: An Introduction*, (London: Sage Publications, 1991).

<sup>30</sup> R.K Yin, *Case Study research: design and methods*, 2<sup>nd</sup> edition, (Sage Publication, Thousands Oak, 1994).

4. Finally, there may have been observer bias, which means that there may have been different approaches to interpreting the replies".<sup>31</sup>

The work with this thesis started with a considerable literature study. The literature I came across (mainly articles) was from several authors and often had Internet banking and adoption of e-banking topics, which meant that I covered the area of Internet banking surroundings.

This would suggest that bias, from reading only one author and reading only about one topic, be held at a minimum level. "Widersheim-Paul and Eriksson (1997) describe some other erroneous belief that is to be avoided in order to attain high reliability".<sup>32</sup>

One of these is measuring error, which in spin consists of respondent errors, gauging errors and errors that are effect of interplay between the interviewer and the respondent. As I used a questionnaire, this latter error was avoided in advance.

The respondent errors are such errors that are owed to the fact that respondents sometimes are incapable or indisposed to provide truthful answers. In sort to reduce effects of this kind of errors, I found it necessary to be careful about the language and the wording.

Additionally, the use of wording in the questionnaire was main apprehension to avoid confusing or arousing charged formulations.

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<sup>31</sup> M Saunders, A Thornhill, Organizational justice, trust and the management of change an exploration, *Personnel Review*, 32: 3(2003), 360-375.

<sup>32</sup> Widersheim-Paul and Eriksson, *Liber Ekonomi*, 5<sup>th</sup> edition, 1997.

The chosen wording and language was simple, direct and as far as possible without technical terms.

“The gauging errors arise when a questionnaire entails erroneously formulated question, wrong order of question etceteras”.<sup>33</sup>

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<sup>33</sup> Ibid,

## CHAPTER: 5

### FACTORS INFLUENCING ADOPTION OF INTERNET BANKING AND ANALYSIS

This chapter deals with factors influencing adoption of internet banking in Pakistan, analysis and interpretation of data procedure through the questionnaire. Adoption is the acceptance and continued use of a product, service or idea.

According to Rogers and shoemaker (1971), consumers go through “a process of knowledge, persuasion, decision and conformation before they are ready to adopt a product or service”.<sup>1</sup>

Before individuals adopt a technology, they collect complete information about the technology.

The adoption or rejection of an innovation begins when “the consumer becomes aware of the product”.<sup>2</sup> “Hence, for adoption of Internet banking, it is necessary that the banks offering this service make the consumers aware about the availability of such a product and explain how it adds value relative to other products of its own or that of the competitors”.<sup>3</sup>

Consumers ought to be aware of the new product or technology and about its pros and cons.

Following are the detail of factors affecting the internet banking in Pakistan.

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<sup>1</sup> E.M Rogers and F Shoemaker, *Communications in Innovation* (New York: Free Press, 1971), 9.

<sup>2</sup> M Sathye, “Adoption of Internet banking by Australian consumers: an empirical investigation” *International Journal of Bank Marketing*, 17:7 (1999), 324-334.

<sup>3</sup> Rahmath Safeena et al, “Customer Perspectives on E-business Value: Case Study on Internet Banking” *Journal of Internet Banking and Commerce*, 15:1(2010), 6.

## 5.1 Trust.

“Trust is a willingness to be vulnerable to the actions of another person or people”.<sup>4</sup> “This is based on expectations that the other person will behave in a responsible manner and will not take advantage of a dependence upon him or her”.<sup>5</sup>

“Trust is perhaps a critical component in building economic relationships in an online environment such as Internet banking due to a greater perception of risk and uncertainty”.<sup>6</sup>

“While trust is a catalyst in many buyer-seller transactions, it can provide buyers with high expectations of satisfying exchange relationships”.<sup>7</sup>

To most consumers, the issue of trust over the Internet is the most enticing obstacle fact in adoption of internet banking that caused them not to make any transaction on internet. Generally publicised security lapses on the Internet, where other people accessed personal financial information it shake the trust of customer.

## 5.2 Perceived Usefulness.

The term Perceived Usefulness can be describes as;

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<sup>4</sup> R.C Mayer et al. An integrative model of organizational trust. *Academy of Management Review*, 20:3(1995), 709.

<sup>5</sup> D Gefen et al, Inexperience and experience with online stores: The importance of TAM and trust. *IEEE Transactions on Engineering Management*, 50: 3(2003), 307.

<sup>6</sup> Khalil Md Nor and J Michael Pearson, “ The Influence of Trust on Internet Banking Acceptance” *Journal of Internet Banking and Commerce*, 12:2(2007) 2. Available at <[http://eprints.utm.my/8136/1/KMNoor2007%2DThe\\_Influence\\_of\\_Trust\\_On.pdf](http://eprints.utm.my/8136/1/KMNoor2007%2DThe_Influence_of_Trust_On.pdf) > (last accessed 21-1-11).

<sup>7</sup> J.M Hawes et al, Trust Earning Perceptions of Sellers and Buyers, *Journal of Personal Selling and Sales Management* ,9 (1989), 1.

“The perceived usefulness is the extent to which a person believes that using a particular system will enhance his or her performance”.<sup>8</sup>

“The importance of perceived usefulness has been widely recognized in the field of electronic banking”.<sup>9</sup> “The usefulness is the subjective probability that using the technology would improve the way a user could complete a given task”.<sup>10</sup> This factor also has much influence upon the adoption of internet banking as if the customers find a system useful and believe that it will enhance its performance then he will adopt it.

“An individual evaluates the consequences of their behavior in terms of perceived usefulness and base their choice of behavior on the desirability of the perceived usefulness”.<sup>11</sup> Therefore, perceived usefulness will influence their intention to accept and adopt internet banking, either directly or indirectly.

### 5.3 Perceived Ease of use.

Perceived Ease of use is defined as “the degree to which a person believes that using a particular system would be free of effort”.<sup>12</sup>

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<sup>8</sup> FD Davis, “Perceived usefulness, perceived ease of use, and user acceptance of information technology”. *MIS Quarterly*, 13:3 (1989), 319.

<sup>9</sup> P Guriting and NO Ndubisi, “Borneo online banking: evaluating customer perceptions and behavioural intention”. *Manage Res News*, 29:1/2 (2006), 6.

<sup>10</sup> C Jayawardhena and P Foley, “Changes in the banking sector – the case of Internet banking in the UK”. *Internet Research: Electron. Netw Appl. Policy* 10:1 (2000), 19.

<sup>11</sup> Tariq Bhatti, “Exploring Factors Influencing the Adoption of Mobile Commerce” *Journal of Internet Banking and Commerce*, 12:3(2007), 5-6. Available at <[http://www.arraydev.com/commerce/jibc/2007-12/bhatti\\_Final.pdf](http://www.arraydev.com/commerce/jibc/2007-12/bhatti_Final.pdf)> (last accessed 01-12-10).

<sup>12</sup> FD Davis, “Perceived usefulness, perceived ease of use, and user acceptance of information technology”. *MIS Quarterly*, 13:3 (1989), 319.

Hence a relevance perceived to be easier to use than another is more likely to be accepted by users. Perceived ease of use (PEOU) is a major factor that influences customer attitude towards the use of internet banking.

Perceived Ease of Use (PEOU) measures how easy a customer believes that Internet technology is to use. If technology is perceived to be easy to use then the rate of adoption will increase.

#### **5.4 Attitude.**

“Attitude is defined as an individual’s positive or negative feelings (evaluative affect) about performing a target behavior”.<sup>13</sup> The attitudinal credence toward an innovation can be calculated by relative advantage. Relative advantage is to be an important factor in determining adoption of new innovations. “In general, perceived relative advantage of an innovation is positively related to its rate of adoption”.<sup>14</sup> Internet banking services permit customers to access their banking accounts from any place, at any occasion; it provides advantage and expediency to users. This also provides the customers better control over various things like managing their cash, as they are able to verify their accounts easily. “In view of the advantages that Internet banking services offer, it would thus be expected that

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<sup>13</sup>M Fishbein and I Ajzen, *Belief, Attitude, Intention and Behavior: An Introduction to Theory and Research*, Reading (MA: Addison-Wesley, 1975), 31.

<sup>14</sup>E.M Rogers, *Diffusion of Innovations* (New York: Free Press, 1983), 56.



individuals who perceive Internet banking as advantageous would also be likely to adopt the service”.<sup>15</sup>

Attitude is one of important factor in increase the level of behavior intention among customer for adoption of technology.

### **5.5 Intention to use.**

“Hill et al. (1986) found that self-efficacy predicts intentions to use a wide range of technologically advanced products”.<sup>16</sup> Therefore, a person will feel secure in having the skills in using the computer and the Internet is easier to adopt Internet banking. “Customer intention to use online banking based on the concept of, which identified customer intention as the interest of individuals in using the system offered for future banking transactions”.<sup>17</sup> Intention to adopt internet banking service is the contingent variable. So it is important factor which effect the adoption of new technology.

### **5.6 Security and Privacy.**

In fact, Internet banking is still comparatively new in Pakistan and is at its infancy stage. Therefore, most of the individuals are to be indecisive to use Internet banking as they have

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<sup>15</sup> Sara Naimi Baraghani, “Factors Influencing the adoption of Internet Banking “Published Master thesis (submitted to Department of Business Administration and Social Science, Lulea university of Technology Sweden, 26).

<sup>16</sup> T Hill et al, “Communicating Innovations: Convincing Computer Phobics to Adopt Innovative Technologies,” *Advances in Consumer Research*, 13(1986), 419-422.

<sup>17</sup> I Ajzen, “The theory of planned behavior. *Organ. Behav. Hum. Decision Processes*” 50:2 (1991), 179-211.

major qualms over security and privacy issues. Furthermore, individual may find dealing with bank tellers more enjoyable and convenient than using Internet banking.

“Privacy is defined as the ability to control and manage information about oneself”.<sup>18</sup> “In other place the Security is defined as the ability to protect against potential threats”.<sup>19</sup>

As privacy and security alliance, Banks takes the security of the customer information seriously. “They take great efforts to protect customer’s personal information and ensure that all of their accounts are secure from the moment they open them”.<sup>20</sup> Banks always try to give a better perception of their promise to protecting private information of customer’s.

## **5.7 Analysis and Result.**

The data collected for the study was analyzed and presented in the form of table which is followed by its interpretation. This study was aimed to find out the factors that influencing the adoption of internet banking in Pakistan. Data was analyzed by statistical package being use in the research of social sciences (SPSS).

In order to collect data, 175 questionnaires have been administered which consist of 16 Questions based on the Factors discussed above to know about the factors influencing the adoption of internet banking in Pakistan. These questionnaires have been filled by the different users and non users of internet banking. After collecting data it has been put into

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<sup>18</sup> F Belanger et al, “Trustworthiness in electronic commerce: the role of privacy, security, and site attributes. *Journal of Strategic Information Systems*, 11(2002), 245-270.

<sup>19</sup> Hua Guangying, “An Experimental Investigation of Online Banking Adoption in China” *Journal of Internet Banking and Commerce*, 14:1(2009), 4.

<sup>20</sup> Available at <<http://www.nationwide.com/internet-banking-security.jsp>> (last accessed 02-12-10).

the statistical software recognized as the statistical package for social sciences and applies the appropriate statistics to analyze the collected data. After analyzing the data, the results are shifted into table form for interpretation which is discussed hereunder:

#### 5.7.1 Gender.

Responses	Frequency	Percent	Cumulative Percent
Male	95	54.3	54.3
Female	80	45.7	100
Total	175	100	

The above table shows that the 54.3% of the respondents are the male and the 45.7% of the respondents are female.

#### 5.7.2 Age.

Responses	Frequency	Percent	Cumulative Percent
Less than 20 years	4	2.3	2.3
21-30 years	10	5.7	8.0
31-40 years	76	43.4	51.4
41-50 Years	85	48.6	100
51years and above	0	0	100
Total	175	100	

As for as the age of the respondents are concerned, the above table shows that the age of the 2.3% respondents is less than 20 years, 5.7% are between 21-30 years, 43.4% between 31-

40 years, 48.6% of the respondents are between 41-50 years and there is no respondent in the age group of 51 years and above .

### 5.7.3 Education.

Responses	Frequency	Percent	Cumulative Percent
High School	04	2.3	2.3
College	10	5.7	8.0
Bachelor	76	43.4	54.1
Master and others	85	48.6	100
Total	175	100	

The above table shows that the education of 2.3% of the respondents is high school, 5.7% are at college level, 43.4% are in bachelor and 48.6 are master.

### 5.7.4 Profession/Occupation.

Responses	Frequency	Percent	Cumulative Percent
Government Employee.	20	11.4	11.4
Bank Employee	19	10.9	22.3
Private Sector	98	56.0	78.63
Other	38	21.7	100
Total	175	100	

The table shows that 11.4% of the respondents are government employees, 10.9% are working in banks, 56% are working in private sector and 21.7% belongs to various other professions.

#### **5.7.5 Income.**

Responses	Frequency	Percent	Cumulative Percent
Less than 20000 PM	34	19.4	19.4
21000-40000	62	35.4	54.9
41000-60000	48	27.4	82.3
61000-80000	15	8.6	90.9
81000 and above	16	9.1	100
Total	175	100	

This table shows that 19.4% of the respondent's income is less than Rs. 20,000/- per month, 35.4% respondent's income between Rs. 21,000/- Rs. 40,000/- , 27.4% respondents have income between Rs. 41,000/- Rs.60,000/- , 8.6% respondents income is lying between Rs. 61,000/- - Rs. 80,000/- and 9.1% of the respondents have the income of Rs. 81,000/- and above.

Now we would like to analyze the responses against the statements of the questionnaires of the Respondents under the following frequency distribution based on the collected data:

#### **Statement No. 1**

**I intend to use internet banking within near future.**

**Table No.5.1 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	92	52.6	52.6
Strongly Agree	51	29.1	81.7
Disagree	26	14.9	96.6
Strongly Disagree	6	3.4	100
Total	175	100	

Table 5.1 shows that 52.6% Respondents responded “Agree”, 29.1 Respondents responded “Strongly agree” 14.9% responded “Disagree and 3.4% responded “Strongly Disagree” to the above statement.

**Statement No. 2**

**I plan to use internet banking.**

**Table No.5.2 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	71	40.6	40.6
Strongly Agree	68	38.9	79.4
Disagree	26	14.9	94.3
Strongly Disagree	10	5.7	100
Total	175	100	

Table 5.2 shows that 40.6% respondents responded “Agree”, 38.9% responded “Strongly agree” 14.9% responded “Disagree and 5.7% responded “Strongly Disagree” to the above statement.

**Statement No. 3**

**I feel internet banking is a wise idea.**

**Table No.5.3 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	81	46.3	46.3
Strongly Agree	68	38.9	85.1
Disagree	22	12.6	97.7
Strongly Disagree	4	2.3	100
Total	175	100	

Table 5.3 shows that 46.3% respondents responded "Agree", 38.9% responded "Strongly agree" 12.6 % responded "Disagree and 2.3% responded "Strongly Disagree" to the above statement.

**Statement No. 4**

**I like to use internet banking.**

**Table No.5.4 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	76	43.4	43.4
Strongly Agree	61	34.9	78.3
Disagree	20	11.4	89.7
Strongly Disagree	18	10.2	100
Total	175	100	

Table 5.4 shows that 43.4% respondents responded “Agree”, 34.9% responded “Strongly agree” 11.4% responded “Disagree and 10.2% responded “Strongly Disagree” to the above statement.

#### **Statement No. 5**

**The internet banking site is trust worthy and secure.**

**Table No.5.5 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	22	12.6	12.6
Strongly Agree	16	9.1	21.7
Disagree	69	39.4	61.1
Strongly Disagree	68	38.9	100
Total	175	100	

Table 5.5 shows that 12.6% respondents responded “Agree”, 9.1% responded “Strongly agree” 39.4% responded “Disagree and 38.9% responded “Strongly Disagree” to the above statement.

#### **Statement No.6**

**Internet banking site keeps its promises and commitments.**

**Table No.5.6 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	23	13.1	13.1
Strongly Agree	22	12.5	25.6
Disagree	53	30.4	56
Strongly Disagree	77	44	100



Total	175	100
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Table 5.6 shows that 13.1% respondents responded "Agree", 12.5% responded "Strongly agree" 30.4% responded "Disagree and 44% responded "Strongly Disagree" to the above statement.

#### **Statement No. 7**

**I trust the internet banking site and there is no insecurity.**

**Table No.5.7 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	23	13.1	13.1
Strongly Agree	16	9.2	22.3
Disagree	38	21.7	44
Strongly Disagree	98	56	100
Total	175	100	

Table 5.7 shows that 13.1% respondents responded "Agree", 9.2% responded "Strongly agree" 21.7% responded "Disagree and 56% responded "Strongly Disagree" to the above statement.

#### **Statement No. 8**

**Using the internet banking site makes it easier to do my banking activities.**

**Table No.5.8 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	47	26.9	26.9

Strongly Agree	78	44.6	71.4
Disagree	34	19.4	90.9
Strongly Disagree	16	9.2	100
Total	175	100	

Table 5.8 shows that 26.9% respondents responded “Agree”, 44.6% responded “Strongly agree” 19.4% responded “Disagree and 9.2% responded “Strongly Disagree” to the above statement.

#### **Statement No. 9**

**Using the internet banking site enables me to accomplish banking activities more quickly.**

**Table No.5.9 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	38	21.7	21.7
Strongly Agree	85	48.6	70.3
Disagree	24	13.7	84.0
Strongly Disagree	28	16	100
Total	175	100	

Table 5.9 shows that 21.7% respondents responded “Agree”, 48.6% responded “Strongly agree” 13.7% responded “Disagree and 16% responded “Strongly Disagree” to the above statement.

#### **Statement No. 10**

**Using internet banking would increase the quality or output of bank transaction.**

**Table No.5.10 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	60	34.3	34.3
Strongly Agree	69	39.4	73.7
Disagree	30	17.1	90.9
Strongly Disagree	16	9.1	100
Total	175	100	

Table 5.10 shows that 34.3% respondents responded “Agree”, 39.4% responded “Strongly agree” 17.1% responded “Disagree and 9.1% responded “Strongly Disagree” to the above statement.

#### **Statement No. 11**

**I find the internet banking site useful for my banking activities.**

**Table No.5.11 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	46	26.3	26.3
Strongly Agree	79	45.1	71.4
Disagree	24	13.7	85.1
Strongly Disagree	26	14.9	100
Total	175	100	

Table 5.11 shows that 26.3% respondents responded “Agree”, 45.1% responded “Strongly agree” 13.7% responded “Disagree and 14.9% responded “Strongly Disagree” to the above statement.

**Statement No. 12**

**Interaction with internet banking does not require a lot of mental effort.**

**Table No.5.12 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	44	25.1	25.1
Strongly Agree	83	47.4	72.6
Disagree	36	20.6	93.1
Strongly Disagree	12	6.9	100
Total	175	100	

Table 5.12 shows that 25.1% respondents responded "Agree", 47.4% responded "Strongly agree" 20.6 % responded "Disagree and 6.8% responded "Strongly Disagree" to the above statement.

**Statement No. 13**

**Learning to use internet banking is easy for me.**

**Table No.5.13 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	33	18.9	18.9
Strongly Agree	89	50.9	69.7
Disagree	25	14.3	84
Strongly Disagree	28	16	100
Total	175	100	

Table 5.13 shows that 18.9% respondents responded “Agree”, 50.9% responded “Strongly agree” 14.3% responded “Disagree and 16% responded “Strongly Disagree” to the above statemen

**Statement No. 14:**

**I find it easy to do what I want to do with online banking.**

**Table No.5.14 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	23	13.1	13.1
Strongly Agree	109	62.3	75.4
Disagree	27	15.4	90.9
Strongly Disagree	16	9.1	100
Total	175	100	

Table 5.14 shows that 13.1% respondents responded “Agree”, 62.3% responded “Strongly agree” 15.4% responded “Disagree and 9.1% responded “Strongly Disagree” to the above statement.

**Statement No. 15**

**Using internet banking is a secure channel.**

**Table No.5.15 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	38	21.7	21.7
Strongly Agree	32	18.3	40

Disagree	24	13.7	53.7
Strongly Disagree	81	46.3	100
Total	175	100	

Table 5.15 shows that 21.7% respondents responded “Agree”, 18.3% responded “Strongly agree” 13.7% responded “Disagree and 46.3% responded “Strongly Disagree” to the above statement.

#### **Statement No. 16**

**I have no fear of leakage of my personal information.**

**Table No.5.16 Frequency distribution of the response**

Responses	Frequency	Percent	Cumulative Percent
Agree	19	10.9	10.9
Strongly Agree	38	21.7	32.6
Disagree	50	28.6	61.1
Strongly Disagree	68	38.9	100
Total	175	100	

Table 5.16 shows that 10.9% respondents responded “Agree”, 21.7% responded “Strongly agree” 28.6% responded “Disagree and 38.9% responded “Strongly Disagree” to the above statement.

The above table representing the result that customer has no trust upon the Banks web sites as Table 5.5, 5.6, and 5.7 clearly showing their concerns and view point. As we have already

been described above that Trust is one of the important factor which influences the acceptance of new technology.

Along with Trust, security and privacy is another important issue about which customers are very much concerned, this issue is also discussed above. The above table no5.15 and 5.16 showing that customer do not consider internet banking a secure channel and they have fear of leakage of personal information.

## **CHAPTER: 6**

### **CONCLUSION AND RECOMMENDATIONS**

The purpose of this study is to give awareness to the Banks for improvement in internet banking services. In chapter: 3 we have discussed the applicable laws and legal issues pertaining to internet banking and some issues have been highlighted which need to be covered by these laws.

In ETO, 2002 the following terms have not been defined:

- (i) Signatory which means a person who holds a signature-creation device and acts either on his own behalf or on behalf of the person he represents” has not been defined.
- (ii) Conduct of the signatory whom says that each signatory shall exercise reasonable care to avoid unauthorized use of its signature creation data and where a certificate is used to support the electronic signature, exercise reasonable care to ensure the accuracy and completeness of all material representations made by the signatory.
- (iii) Use of Pseudonym which can only be possible if requested by the applicant the certification-service provider can use a pseudonym instead of his name in the qualified certificate.



- (iv) Trustworthy Hardware and Software that is important provisions to ensure the public that the systems hardware and software they use are sufficiently trustworthy as well as protected against alterations and forgery.
- (v) Signature Creation Device Security the certification service provider shall obtain suitable proof that the applicant owns the relevant secure signature creation device.
- (vi) Obligation to Inform on Security in which the certification-service provider shall inform the applicant of the measures needed to increase the security of qualified electronic signatures and shall test them reliably.
- (vii) The inspection body under which the Communications Regulatory Authority may designate inspection body to assess whether a signature-creation device meets the requirements lay down. The inspection body may be private or public.
- (viii) No Remedy for Recovery of Financial Losses which describes that any financial losses are occurred to any person then there are no provisions in this law which can be applied for the recovery of these financial losses.

In Payment Systems and Electronic Fund Transfers Act, 2007 i found that the following areas have not been covered:

- (i) Inter-Bank Payment System which means arrangements through which payments are made between banks for their own account or on behalf of their customers.
- (ii) Customer's Personal Data Protection which describe that the Customer's personal data should be kept private and protected.

- (iii) Jurisdiction is also important aspects which by standard are required to be an essential part of any legislation and as also in the context of electronic fund transfers and payment system.

In Prevention of Electronic Crime Ordinance, 2009 I found that the following should be the part of new law:

- (i) Salami Attack is used for committing financial crimes. The key here is to make the alteration so insignificant that in a single case it would go completely unnoticed.
- (ii) Web jacking which is just as conventional hijacking of an airplane is done by using force, similarly web jacking means forcefully taking over control of a website.
- (iii) Juveniles in PECO, 2009 there are no provision regarding the prosecution of juvenile offenders. If legislatures' include these provisions in these three Laws than it will help the banks to improve customer trust and security issues.

Beside the above analysis our main objective of this study was to conduct survey from the population as defined in Chapter: 5 and come up with the conclusion regarding the factors influencing the adoption of internet banking in Pakistan. The study has revealed that Trust and security and privacy are the most important factors of customer's acceptance of internet banking services. A large number of surveys were conducted by the users and non users of internet banking to empirically examine this research study.

This study highlighted that Trust and security and privacy issues are important in increasing the customer's behavioral intention to use internet banking. The study shows that the banks should pay a full attention to both aspects while designing the internet banking sites for attracting the customers.

The users first want Trust and privacy than consider perceive to Ease and usefulness of a technology features for adoption it in day-to-day activities of life. In other words it can be said that trust and security issues are most important in determining customer's attitude than Perceived Usefulness and Perceived Ease of use.

The reason why people are too much concerned about the privacy and security protection may include privacy of statement, privacy of personal identity etc. For giving confidence to the customer the Banks should use secure control system such as the Secure Electronic Transaction Protocol and mention this fact on their web sites. There are four essentials security requirements for safe Electronic payments Authentication, Encryption, Integrity and non-repudiation.

The banks should also educate the people about their efforts for maintaining safety and privacy of information while using Internet banking. After that, usefulness and easy use of internet banking as contented facility is also emerging being important factor in attracting new user. It is relatively clear from the study of survey that the customers consider Internet banking as one of a useful facility. Sometimes the establishment considers that success of system and use is mainly dependent on technology aspects and does not mull over the aspect of security. So the findings show that the respondents have a greater level of worry regarding Trust and privacy issues.

## **Recommendations.**

The implication of these findings and conclusion are that, the Banks need to play a better role for attracting the potential internet banking users. Awareness of internet banking services is essential in this modern technological World. However appropriate laws to secure the interest of all the stakeholders of internet banking are crucial for the growth of the Internet banking. Keeping in view of the analysis and conclusion of the study, our recommendations are as under:

### **A. Recommendations based on the analysis of applicable laws.**

We recommend that the areas mentioned under the Head of each of the respective applicable laws pertaining to internet banking should be covered to make these laws more comprehensive and effective.

#### **A-1. Electronic Transaction Ordinance, 2002.**

In ETO, 2002 the following should be incorporated:

- (i) The provision of Signatory should be included which will help the customer to understand that whom fall under the preview of this Term.
- (ii) The Conduct of the signatory is also necessary to define to make responsible the signatory and to give him an understanding that to what extend he is responsible under this law.

- (iii) Use of Pseudonym should also be allowed in the Pakistani Law as it facilitates the customers with more secure and satisfactory manner.
- (iv) The Trustworthy Hardware and Software is very important provisions to ensure the public that the systems, hardware and software it uses are sufficiently trustworthy as well as protected against alterations and forgery. This provision will provide trust to customer which is an important factor to affect the fame and usefulness of a system.
- (v) Signature Creation Device Security should also define for providing security and to secure the signature. Because the customer relay a system if he found a system secure.
- (vi) Obligation to Inform on Security is such provision in which the certification-service provider shall inform the applicant of the measures needed to increase the security of qualified electronic signatures and shall test them reliably.
- (vii) The incorporation of the provision the inspection body has a dynamic importance which means the Communications Regulatory Authority may designate inspection body to assess whether a signature-creation device meets the requirements lay down or not will enhance the credibility of this law.
- (viii) There is no provision regarding Remedy for Recovery of Financial Losses which should be describes that in a case if any financial losses are occurred to any person than how to recover them. This is a big flaw in this legislation that the people have no financial remedy.

## **A-2. Payment Systems and Electronic Fund Transfers Act, 2007.**

In PSETF Act, 2007 following should be incorporated.

- (i) To unite banks and customers into a form an Inter-Bank Payment System is necessary to define as the fund transfer and payments systems are mostly interbank in nature so it is the need of the time that the relationship between Banks/financial institutions and clients must be well defined to avoid the legal issues arising out of such transaction.
- (ii) The inclusion of Customer's Personal Data Protection is necessary because the protection of the Customer's personal data is for most duty of bank as customer trust upon them. It should be kept private and protected from all unconcerned persons. As there is no provision in this law which explain to what extent the personal data is protected and who can get access to it in case of necessity. This also makes it unsecure.
- (iii) Jurisdiction is an important aspect which by standard are required to be an essential part of any legislation and also in the context of electronic fund transfers and payment system. As it will help the customer in case of litigation that to which forum he has to come for redress.

## **A-3. Prevention of Electronic Crimes Ordinance, 2009.**

**Note:** The PECO, 2009 has already been expired on 4-11-2009 and now it is not applicable.

Following should be incorporated in new law:

- (i) Salami Attacks is used for committing financial crimes. The Banks should set such type of check and balance upon their staff that nobody dares to commit this crime. If legislature includes grievous punishment of this crime in law it will help to stop this crime.
- (ii) Web jacking which is just as conventional hijacking of an airplane is also a hot issue in online services, no provisions regarding scope and punishment of web jacking is in PECO, 2009. If legislature includes this provision it will help to alert new generation to avoid such criminal activities.
- (iii) The provision regarding prosecution of Juveniles offender must include in PECO 2009; because these are immature persons and law cannot deal with them like mature offender.

#### **B. Recommendations based on Analysis of Questionnaires.**

- (i) To attract more potential adopters of internet banking, information regarding internet banking should be provided by the banks at branches. Banks should also advertise their services and facilities through different channels like Newspaper, magazines, leaflets and web pages, etc.
- (ii) Security is one of the main concerns of the Customers; hence banks should on a regular basis carry out efforts to make the Internet banking more secure and such information should be provided to the Customers to remove their fear of insecurity.
- (iii) Instruction and information should be provided on the bank sites in both languages

- (iv) Reliability is a key element for customers, so the Banks should enhance their security system and security provisions should be posted on Banks web sites which will improve the trustworthiness reputation of Banks.
- (v) The web sites should be well designed and friendly to attract customer, because due to lot of effort or time to browsing will lose the customers attention.



## **Appendix A. Acronyms**

- INT: Intention
- ATT: Attitude
- T: Trust
- PU: Perceived Usefulness
- PEU: Perceived Easy Usefulness
- SP: Security Privacy

## Appendix B. Questionnaire

### Part 1 personal information

Gender	Female	Male
Age	Less than 20 years 21-30 years 31-40 years 41-50 years 51 years and above	
Education	High school College Bachelor Master and other Post graduate Studies	
Profession/Occupation	Government Employee Bank Employee Private sector Other	
Income	Less than Rs. 20,000/- per month Between Rs.21,000/-to- Rs. 40,000/- per month Between Rs.41,000/- to Rs 60,000/- per month Between Rs.61,000/- to Rs.80,000/- per month Between Rs. 81,000/- to Rs. 10,0000/- per month and above	

		Agree	Strongly agree	Disagree	Strongly Disagree
<b>INT1</b>	I intend to use internet banking within near future				
<b>INT2</b>	I plan to use Internet banking.				
<b>ATT1</b>	I feel using internet banking is a wise idea				
<b>ATT2</b>	I like to use Internet banking.				
<b>T1</b>	The Internet banking site is trustworthy and secure				
<b>T2</b>	Internet banking site keeps its promises and commitments				
<b>T3</b>	I trust the Internet banking site and there is no insecurity				
<b>PU1</b>	Using the Internet banking site makes it easier to do my banking activities				
<b>PU2</b>	Using the Internet banking site enables me to accomplish banking activities more quickly				
<b>PU3</b>	Using IB would increase the quality or output of banking transaction				
<b>PU4</b>	I find Internet banking site useful for my banking activities.				
<b>PEU1</b>	Interaction with internet banking does not require a lot of mental effort.				
<b>PEU2</b>	Learning to use internet banking is easy for Me.				
<b>PEU3</b>	I find it easy to do what I want to do with Online banking.				
<b>SP1</b>	Using internet banking is a secure channel.				
<b>SP2</b>	I have no fear of leakage of my personal information.				

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