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E-Banking: A Case Study of Askari Commercial Bank Pakistan

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Abstract

This paper has covered the operational issues related to e-banking as well as customer's perception on usage of e-banking a case study of Askari Bank, Pakistan. 40 staff members and four customers are selected as sample for this study. Both qualitative and quantitative methods are used to present the results. Descriptive statistics is applied to describe the demographic variables while for operational problems correlation was used. Finally the cross case analysis present customers' perception about e-banking practices. Analysis shows that customers are not ready to adopt new technology that is why their satisfaction level with e-banking is low. Internet speed and government policies are not supportive for e-banking in Pakistan. Due to lack of trust on technology and low computer literacy rate, customers hesitate to adopt new technology. The paper recommended that in order to promote IT culture in Pakistan, government has to reduce the internet rate, and promote the benefits of e-banking on media so that more users will embark on e-banking services. TAM model was used to judge the perception of customers to accept or reject technology.

Keywords*: E-banking, Internet, AMT, Online transaction, E-readiness, Technology Acceptance Models.*

Introduction

The world is changing at a staggering rate and technology is considered to be the key driver for these changes around us (Papers4you.com, 2006). An analysis of technology and its uses show that it has permeated in almost every aspect of our life. According to Tero et al (2004) many activities are handled electronically due the acceptance of information technology at home as well as at workplace. Internet can be seen as a truly global phenomenon that has made time and distance irrelevant to many transactions. According to Heikki et al. (2002), the transformation from the traditional banking towards e-banking has been a 'leap' change. The evolution of electronic banking started from the use of automatic teller machines (ATM) and has passed through telephone banking, direct bill payment, electronic fund transfer and the revolutionary online banking. The future of electronic banking according to some is

the acceptance of WAP enabled banking and interactive-TV banking. But it has been forecasted that among all the categories, online banking is the future of electronic financial transactions. The fundamental shift towards the involvement of the customer in the financial service provision with the help of technology especially internet has helped in reduce costs of financial institutions as well as helped client to use the service at anytime and from virtually anywhere with access to an internet connection. According to theorists (Walfried et al., 2005) customer evaluation of the electronic services is influenced by attributions of success and failure in inter personal service situations.

The use of electronic banking has removed the banking personnel that facilitate the transactions and has placed additional responsibilities on the customers to transact with the service. Although the use of E-banking is provided for the benefit of the customers but these changes require increased work or involvement on the part of customers. These and other factors might be seen as lesser service provided in terms of customer service. But these assumptions would be wrong if the customer knows the value of using the electronic service.

Current e-banking in Pakistan

Currently in Pakistan, the listed numbers of banks under governmental documents are 41. The number of three nationalised commercial banks is 3. There are 15 private banks, almost 15 foreign banks. While other 6 comes under specialized banking category. The major portion of population still believes on cash tradition rather than online banking. Utility bills are still sent to houses and people wait in longs queues outside banks to pay those bills. Lack of customer trust keeps them away from adopting electronic service resulting to lack of e-readiness. The major reason for lack of e-readiness is lack of trust, unavailability of proper infrastructure and security, service charges and lack of education (Kundi et al. 2009). Computer literacy is basic requirement for usage of online banking systems (Heeks, 2002). Computer cost in Pakistan is too high and it's not possible for common man to purchase computer as its cost three times higher than common man salary (Nizamuddin et al., 2001). However Zarmeene (2006) identified several other factors which impede the success of e-banking in Pakistan. These include low literacy rate, pirated software's, inadequate infrastructure and awareness.

Electronic Banking

Foreign banks in Pakistan are initiators for introducing E-banking practices in mid 1990's. In late 90's domestic banks also adopted the technology and e-banking services like ATM cards and debit cards. According to the definition provided by (Abid et al., 2006), "Any use of information and communication technology and electronic means by a bank to conduct transactions and have interaction with the stakeholders". Electronic banking provides ease and facilities to their customer. Electronic banking provides convenience to their customer to use bank website for all kind of transactions in secure environment. Customers can interact with bank website 24 hours a day and seven days a week. Electronic banking provides convenience by saving time and cost for both

individuals and companies. There are few banks who charges for using their online services but many banks provide free of charge online banking services to keep their customer intact with bank (Karjaluoto et al.,2002).

Now it is possible for customers to perform all kind of banking transactions from their account any time and in every part of the world. Electronic banking made all kind of online shopping easy and secure. According to Amor (1999), electronic banking facilitates customers in number of ways i.e. customer is now able to pay their utility bills, get and pay loans by installments, and changes their password online. Now customers are able to see all their past transaction records and history. 24 hours banking customer services help them to keep intact with banking staff. But in case of Pakistan the process of e-banking is not too matured as equipment required for e-banking i.e. personal Digital Assistance (PDA), computer and internet connection are not readily available for everyone.

E-Readiness

According to the definition and description of Electronic readiness by Economist Intelligence Unit in 2008, *"The ability to pursue value creation opportunities facilitated by the use of the Internet"*

E-readiness is capacity of the country to promote available technologies like Information and Communication Technology (ICT) and other digital support for successful implementation of electronic banking in country. E-readiness in basic estimation about infrastructure required to launch e-services successfully. It is measure of consumer, government and business unit's abilities for use of information and technology for their benefits (Aladwani, 2001). It is the source to make your activities more efficient, smooth and only way for country to become stable economically. E-readiness is the way forward for under developed country to their better future (Woodall, 2003).

Woodall (2003) suggested the ways a country can adopt e-readiness. These factors are interrelated with country social, economical, political profile and may vary in size and quality depending upon digital facilities and infrastructure available for Information Communication Technology (ICT). He recommended that policy maker have to make environment feasible for ICT and digital services and create awareness among society about associated profit which individuals and business organization can get by linking commerce and societies with these technologies. According to Porter (2005), country e-readiness is measure of facilities and digital connection which countries must have to adopt electronic services. Countries have to adopt these facilities as its' integral contributor for economical development of country.

The "digital divide" is merely the latest demonstration of the socio-economic landscape of Pakistan. In Pakistan access to digital media and ICT are provided by mean of dial up network which is used to connect with internet. There is only one network in the country which access to dial up telephone service i.e. Pakistan Tele Communication Authority (PTCL). There are almost fifty different internet providers in all over the country. While the available speed in cities is about 56 KB per second and government schools have no access to internet facilities. In order to adopt IT service in banking sector, it is very important that the country improve their infrastructure and digital setup so that businesses and organizations can easily access connecting media.

Benefits of Electronic banking

In order to access online banking services, it is important that bank should have IT infrastructure and internet facility available to facilitate their customers with all kinds of online banking services. Pikkarainen et al. (2004) suggested that bank must have an offical website which facilitate customers to perform all kinds of online transaction so that the Giglio (2002) suggested that adopting online banking services reduce the workload over the banking staff and it's easy to have more satisfied customers. According to Robson (2002), online banking provides convenience not only to bank and also to customer. It saves customer cost and time as adopting e-banking service customer can make transactions from their home. Polatoglu et al. (2001) suggested many benefits associated with online banking. Customer can pay their bills, can pay their loans, credit and debit card facilities. In other words it provides freedom of location, saves time and cost. Electronic banking widens the horizon of business. Now business organizations and individuals can easily access global opportunities. In this digital media, even small businesses can use ICT as support and source to sell their product online. Many companies used ICT application for their distribution activities resulting to secure transaction with more profit. ICT provided the business with an opportunity to transact business locally as well as globally. SAARC made an observation about Pakistan in 2003-2004. According to their report, adoption of e-banking services in Pakistan is increasing day by day and their change level in year 2003-2004 is about +15. However the other developing countries are still struggling to achieve that level (Polatglu and Ekin, 2001).

Factors Hinders E-Banking

Although there are many associated benefits from adopting online banking services but there are many reasons which obstruct the recognition of electronic banking. In case of Pakistan, many private banks still using old banking system and don't have access to take advantage from electronic banking facilities. Pikkarainen et al, (2004) observed the following reasons which may be considered as hindrance factors for electronic banking. These hindrance factors includes lack of internet facilities with customer, learning how to interact with bank website, internet cost, technical issues related with personal computer and technology awareness. Similarly some user feels confident with traditional banking system as adopting new e-banking services leads them to learn new technologies like computer, making internet connection etc. According to Akinci et al. (2004), security issues are one of the most important barriers for electronic banking users.

Current Banking Situation in Pakistan

Banking practices in underdeveloped countries are quite different from, that of developed countries. In Pakistan, still most of the private banks are using traditional banking system and have not adopted e-banking practices yet. While few banks that adopted e-banking services are not fully functional. For example, there is no website and ATM machines that are working. Similarly there is no facility to pay bill online so most of the customer deposit their bills in nearest banks or in post office branches.

Accoring to Kundi and Shah (2009), provision of e-banking services in Pakistan are still in growing stage and not fully functional because of lack of infrastructure and technology. Available technology infrastructure is not sufficient to fulfill the requirements of current country requirements. They concluded in their studies that it is almost impossible for developing country like Pakistan to provide support to their growing industries like telecommunication and banking sector to compete and fulfill the customer perceived requirement with high technology systems.

Growth of ICT in Pakistan

According to Aljifri et al., (2003), Developing countries like Pakistan have many problems while adopting e-banking faculties and one of them is customer trust on system. Other issues include technological dependence, economic issues and parameter of local authorities which manipulate the trust level of community. Khan and Bawden (2005) reported in their study that progress of growth towards progress of ICT in Pakistan is very slow than that of other developing countries. They appreciated the effort of government toward development providing plat form for promoting ICT and e-commerce in banking sector. According to government education policy (1998-2010), government planned to renovate education system in the country by using ICT so that all generation get awareness about new developing technologies. Initiative of Cisco and other IT related programs sponsored by Microsoft, Sun and Oracle provide basis for foreign companies to invest in Pakistan in IT sector (Shahzada, 2006).

According to Kolachi (2006), the following online banking services and products are provided by the banks of Pakistan:

1. Inquiry:

Inquiry about the following things:

- Bank Statement
- Checking of the balance
- Statement check inquiry
- Fixed deposit inquiry

2. Payments:

- The funds transfer
- Payment ofcreditcard
- Directpayments
- Payment of Utility bills

3. Request:

- Request for Cheque book

- Stop payment requests
- Demand Draft request
- Request for Credit/Debit card

4. Download:
   - Personal Profile
   - Bank Statement

Technology Acceptance Models

Theory of reasoned was proposed by two scientists i.e. Fishbein and Ajzen in 1975. In order to validate the reliability, they submitted improved version of TRA in 1980. They postulated in TRA theory that "Behavioral intention of any human is the instant indication of his attitude and behavior towards any activity. They suggested that subjective norms arbitrate the behavioral factors while normative beliefs are mediated through attitude.

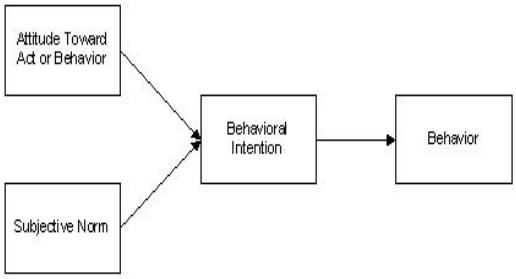

Figure 1. The Theory of Reasoned Action

Source: Fishbein, M., & Ajzen, I. (1975).

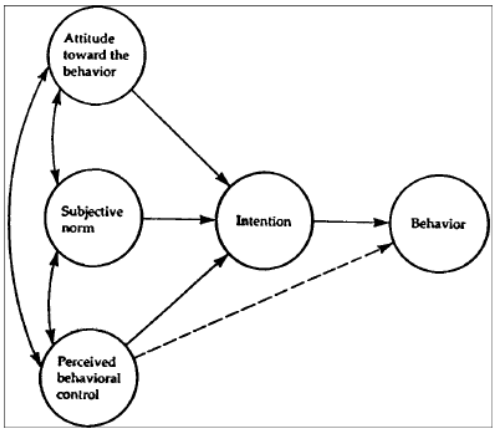

Figure 2. Theory of Planned Behavior

Note. From Ajzen, I. (1991). "The Theory of Planned Behavior." by Izak Ajzen, 1991, Organizational Behavior and Human Decision Processes, p. 50, 179-211.

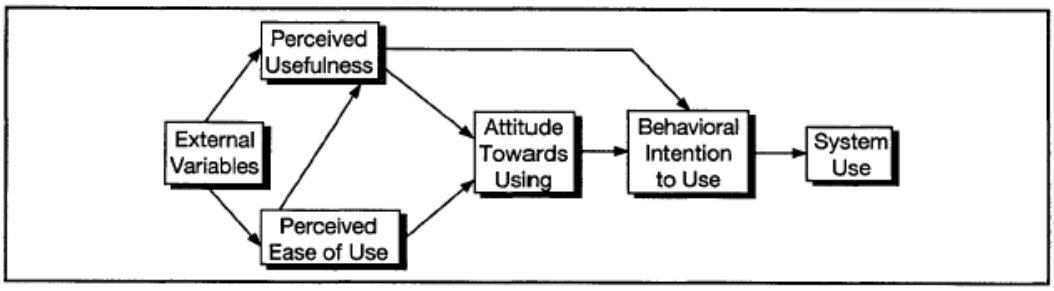

Figure 3. The Technology Acceptance Model.

TAM model is readily used to judge the perception of consumer on e-banking. This model is helpful to streamline the different factors which motivate consumer to accept and reject technology. Davis et al. (1989) give explanation about their model as "All accepted variables provide the basis for individual acceptance of computer system. It judges the behavior of consumer for adopting computer technologies and their perceived use for computer systems. This model focuses to highlight the external factors and their impact on internal belief of consumers i.e. attitude towards technology, personal beliefs about technology and intentions for adopting new technology".

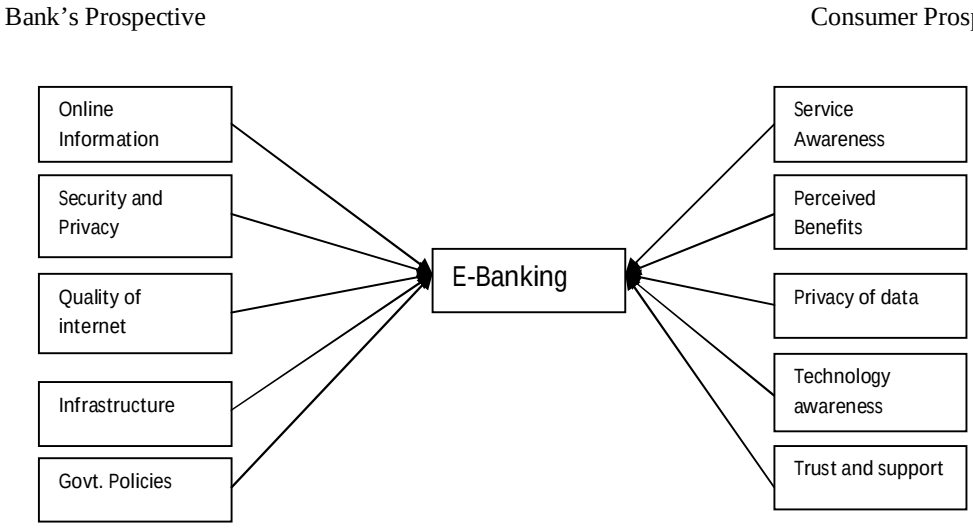

Figure4: Conceptual Framework

Figure 4 shows the proposed model for this study. Variables used in this model are explored from literature survey from previous studies. The model considered the customer prospective as well as bank prospective. For bank prospective, variables in consideration are online banking information, security and privacy, perceived usefulness, technology infrastructure and government policies. While variables considered for consumer are services awareness,

perceived benefits, trust and support, technology awareness and data privacy. All these factors were considered as important in previous studies in case of developing countries especially in case of Pakistan.

Data Collection Procedure

- Data Gathering Instrument: In the current study, the qualitative issue i.e. E-banking operational problems and E-banking customer awareness was operationalised and are measured in quantitative terms through a questionnaire designed and tested by employees and customer of Askari bank. As defined by Joseph (2007), that 'questionnaire is a prepared set of questions (or measures) used by respondents or interviewers to record answers (data)'. This method provides a better understanding and reliability of data as it is a mixture of art and science which is providing an accurate instrument to collect and measure data on the variables of the study.

Table 1. **Customer Perception and Usage of online Services**

Questions	Perspectives	Authors	Justification
Q2	Services awareness	Chaffey et al. (2003), Clark & Miller (1993)	These questions help in gathering information regarding customer usage of provided online services.
Q3. Q4, Q5	Perceived benefits	Adam (1992), Akinci (2004)	These questions help in gathering data on perceived associated benefits, overall improvement in efficiency and effectiveness of online banking system.
Q9, Q10, Q11, Q15	Data records and privacy	Aladwani (2001)	These question help in gathering data on customer data security during transaction, banking service in case of difficulties and privacy.
Q6, Q7, Q8	Technology Awareness	Moutinho, L. (2000)	These question help in gathering data on internet speed, governmental policies and customer trust on technology.
Q12, Q13, Q14	Trust and support	Anderson and Keer (2001), Woodall (2003)	These question help gathering data on trust about online data security, transaction security and transaction information.

Correlation Analysis of Operational Problem

Correlation results reveal that e-banking has significant relation with internet quality. Correlation coefficient value is r=42% and this relation is significant at 1 %. It means that quality of internet affects the electronic banking privacy. Government has to improve the quality of internet to overcome the privacy issue of online banking system. Similarly value of r is 56% for relation between e-banking privacy and e-banking infrastructure. This relation is also significant at 1% and true strong relation. Available infrastructure of Askari bank is capable of all the facilities of electronic banking. System maintenance and update can make system quality better.

Provided electronic banking infrastructure has positive relation with electronic banking privacy as value of r = .56 mean r-square is 56 % and relation is also significant at 1%. Privacy can only be improved by improving the provided infrastructure for online banking system. Electronic banking information has negative relation with governmental policies. Value of r is -0.67 and highly significant. In Pakistan, policies of government are not supportive towards online banking. This strong negative relation shows that government has to abolish the imposed taxes for support to flourish the electronic banking in Pakistan.

Table 2: Correlation Matrixes

Correlations

		ebanking privacy	ebankinginf rastructure	ebankinginfo	internetquality	govtpolicies
ebankingprivacy	Pearson Correlation	1	,564**	,001	,428**	-,054
	Sig. (2-tailed)		,000	,996	,006	,741
	N	40	40	40	40	40
ebankinginfrastructure	Pearson Correlation	,564**	1	-,264	,424**	,081
	Sig. (2-tailed)	,000		,099	,006	,620
	N	40	40	40	40	40
ebankinginfo	Pearson Correlation	,001	-,264	1	,137	-,673**
	Sig. (2-tailed)	,996	,099		,400	,000
	N	40	40	40	40	40
internetquality	Pearson Correlation	,428**	,424**	,137	1	-,264
	Sig. (2-tailed)	,006	,006	,400		,100
	N	40	40	40	40	40
govtpolicies	Pearson Correlation	-,054	,081	-,673**	-,264	1
	Sig. (2-tailed)	,741	,620	,000	,100	
	N	40	40	40	40	40

**. Correlation is significant at the 0.01 level (2-tailed).

Government policies have negative impact on electronic banking privacy but results are not significant. While there is negative significant relation reported between government policies and internet quality. Value of r for this relation is -0.26 and significance level is 1%. Government has to improve the quality as well as increase the access to internet by expanding their infrastructure. It will help people to access online banking facilities which are currently available to only urban areas and in urban area to only major cities

Customer perception about usage of online banking

Table 3 shows the customer response on usage of facilities available through online banking. Most of the customers (60%) are not aware about technology and use of IT facilities so they pay their utility bills in nearby post office or in banks. While banks entertain their utility bills as secondary task so people have to wait for long hours in line outside the bank to pay their bills. Customers prefer to call a bank to check their balance as according to them, internet is not secure to check balance online. While 40% of the customer doesn't know whether there is online balance check facility available. This response is contradiction to employee's survey results as almost all the employees are confident that consumer has awareness about available e-banking facilities. Only 20 % of user check their balance online usually those who has internet facility available in their offices. Same is the situation about transfer of money through bank website. Almost 60 % of the customers are using their ATM card to pay utility bills. 80 % of the customers are not willing to join online investment because of lack of trust on technology as well as lack of computer knowledge. Mostly military officials and business man (Almost 60%) use bank website for online payments. While only 20 % pay their home loans using online facility.

Table 3.

Customer Analysis

	Almost Never	Never	Don't Know	Almost	Always Almost
I mostly prefer to pay utility bills?	60%	20%	0%	0%	20%
I mostly check my online balance?	40%	0%	40%	0%	20%
Transfer money to other accounts?	40%	0%	40%	0%	20%
I usually pay bills using ATM?	0%	20%	20%	60%	0%
My basic purpose is online investment?	80%	0%	0%	20%	0%
I usually make online payments?	20%	0%	20%	40%	20%
I apply for loans (house, car, others)?	60%	0%	20%	20%	0%
Others (Please specify)	80%	20%	0%	0%	0%

Customer Perception about Online services

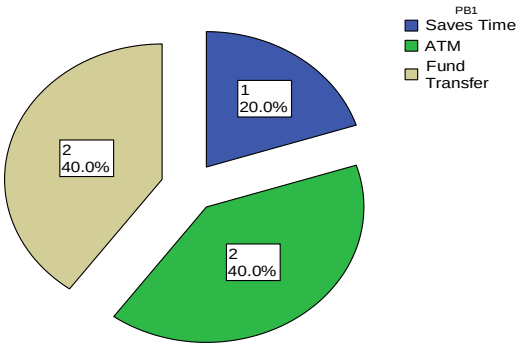

Figure 4.1 Perceived benefits from online banking

Consumer most preferred online services

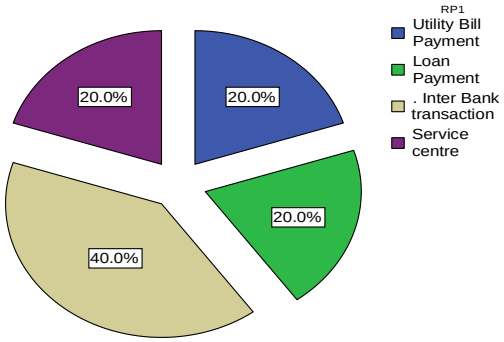

Figure 4.2 Most preferred online services

Consumer least preferred online services

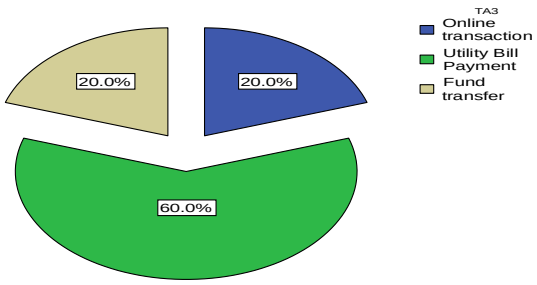

Figure 4.3 Least preferred online services

Cross Case Analysis

Table 3 shows the empirical evidence about cross analysis of customer variables about e-banking services. These variables include service awareness, perceived benefits, trust, and support and data/customer records privacy.

Case 1 Do military officer had access to internet in office as well as in their homes. Customer has positive opinion towards awareness about e-banking facilities. With increased awareness about internet banking customer had also positive opinion towards perceived benefits, trust on e-banking facilities, support in form of promotions and customer care services.

Customer-II Do businessman and had no awareness about use of Information technology but still have trust on e-banking services. Customer is highly satisfied and most preferred online banking service is online payment to other clients. Customer is agreeing that e-banking save times and they are happy with other associated benefits

Customer-III Are Engineer well aware of information technology and related systems. Customer has negative response towards services awareness as banks do not advertise their new product on website. Customer is partially agreed with the support as bank website is slow at 56Kbytes internet connection. Customer trust on technology is high and data privacy issue is not a concern as he is use to dealing with Information Technology.

Customer-IV is government servant working in one of the Planning and Development head office. Customer was requested to fill survey questionnaire while he was in bank to withdraw money from ATM. Customer is not much aware about bank services as he is not using ATM machine and for him ATM is the only services bank is providing. Customer education is not related to IT so trust level is also very low.

Table 4. **Cross Case Analysis of Customer Variables**

Variables	Case1	Case 2	Case 3	Case 4
Services awareness	+	+	_	_
Perceived Benefits	+	+	+	+
Trust	+	+	+	_
Support	+	+/_	+/_	_
Data records and	+/_	_	+	_

privacy				

+ : Agree with the theory

+/- : Partially agree with the theory

- : Doesn't agree with the theory

Conclusion

Current study has covered the operational issues related to e-banking as well as customer perception on usage of e-banking about Askari Bank, Pakistan. This study is an effort to judge the current problems faced by banks as well as customer. Results indicate that provided infrastructure is feasible but governmental policies are not supportive towards e-banking. Provided internet speed is not sufficient for home user to access online banking facilities and those who have access to internet are not satisfied with the internet rates. Customer technology awareness is very low and basic reasons behind this are rates of internet and computer literacy. There are several factors which need to be considered to improve the situation of online baking in Pakistan. During survey, ATM theft cases were also reported which leads towards customer dissatisfaction as well as security concern. Customer acceptance to online banking is slow because of different factors. These factors includes insecure transaction, slow speed of internet, high internet rates, low computer literacy rate and low capability to accept new technology.

Again, results indicate that most of the users have concern about their data privacy and security. Bank has to take initiative to increase customer orientation by educating them about new technology and security issues. In order to improve customer satisfaction, government has to provide basic infrastructure required to access online banking services. Most of the government offices still using the manual system and lag behind to adopt computer technology. New technology not only saves time but also efficiency. Government has to rethink about existing policies to improve and make situation favorable for prospective customers.

Recommendation

As analysis reveals that personal information privacy, security and trust on technology are the main reasons for customer not adopting electronic banking services. Banks have to cater for theft cases of ATM by providing them secure space to use ATM facility. Privacy policy and security policy of bank must be introduced to customer, before opening account to make his mind clear from all security concern. Government has to support financial institutions by providing them proper infrastructure to provide customer user friendly and secure online banking services. E-banking is helpful to save time as well as abolish the ambiguities and issues related to cheques processing. Banks have to set customer problems management system to resolve the issues regarding online banking system. Government has to provide low price internet services to home users as it is pre-requite to promote the online banking services to users. Banks have to display all the new services and product on bank website to improve customer awareness. Official advertisement on local channels is also helpful to improve customer awareness.

Reference

Abid, H. and Noreen, U. (2006), "Ready to E-bank: An exploratory research on adoption of ebanking and e-readiness in customers among commercial banks in Pakistan", Spider, 31 (2), pp. 1-31.
Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Processes, 50*, 179-211.

Aladwani, A.M. (2001), "Online banking: a field study of drivers, development challenges, and expectations", *International Journal of Information Management*, 21 (4), pp. 213–225.

Aljifri, H.A., Pons, A. and Collins, D. (2003), "Global e-commerce: A framework for understanding and overcoming the trust barriers", Information Management and Computer Security, 11 (3), pp. 130-138.
Alter, S. (2002), "Information Systems" 4th Edition, Prentice Hall

Amor, D. (1999).The *E*-business Evolution. 2nd ed. New York: Prentice Hall.
Akinci, S. *et al.* (2004), "Adoption of Internet banking among sophisticated consumer segments in an advanced developing country", *The International Journal of Bank Marketing*, 22 (3), pp. 212-232.

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: a Comparison of Two Theoretical Models. *Management Science, 35*(8), 982-1003

Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Reading, MA: Addison-Wesley.

Giglio, V. (2002), "Privacy in the world of cyber banking: emerging legal issues and how you are protected", *The Secured Lender*, 14 (3), pp. 48-60.

Heikki Karjaluoto, Minna Mattila, Tapio Pento (2002), "Factors underlying attitude formation towards online banking in Finland", International Journal of Bank Marketing; Volume: 20 Issue: 6; 2002 Research paper

Joseph, F. H.(2007). More than friendship is required: an empirical test of cooperative firm strategies. Management Decision. 45(3), 602- 615.

Nizamuddin, S. and Khalid, R. (2001) Pakistan sustained efforts in IT sector needed. *Proceedings of the International Conference on the Future of Pakistan*, Karachi, January 2001, **pp. 23-24.**

Papers For You (2006) "C/B/93. Dissertation. Will online business replace the traditional business in the banking industry in UK?", Available from http://www.coursework4you.co.uk/sprtfina35.htm [17/06/2006]
Petrus Guriting, Nelson Oly Ndubisi (2006), "Borneo online banking: evaluating customer perceptions and behavioural intention", Management Research News; Volume: 29 Issue: 1/2; 2006 Conceptual Paper

Pikkarainen, T., Pikkarainen, K. Karjaluoto, H. and Pahnila, S. (2004), "Consumer acceptance of online banking: an extension of the technology acceptance model", *Internet Research*, Vol. 14 No. 3, ISSN 1066-2243, pp. 224-235.

Polatoglu, V.N. and Ekin, S. (2001), "An empirical investigation of the Turkish consumers acceptance of Internet banking services, *International Journal of Bank Marketing*, Vol. 19 No. 4, pp.156-165

Porter, W.T (2005), User-Centered Design and Marketing: Online Customer Value, Published in 'Contemporary Research n E-Marketing, Volume: 2, by Idea Group Publishing.

Khan, N.S. and Bawden, D. (2005), "Community informatics in libraries in Pakistan: Current status, future prospects", New Library World, 106 (11), pp. 532-540.

Robson, C. (2002), Real World Research: A Resource for social Scientists and Practitioner, Blackwell Publishing

Shahzada, A.M. (2006) *Country report of Pakistan on initiatives of information society by Pakistan Telecommunication Authority [*Online] Available from: http://unpan1.un.org/intradoc/groups/public/documents/APCITY/UNPAN006168.pdf. [Accessed 15 Sept. 2010]

Tero Pikkarainen, Kari Pikkarainen, Heikki Karjaluoto, Seppo Pahnila (2004), "Consumer acceptance of online banking: an extension of the technology acceptance model", Internet Research; Volume: 14 Issue: 3; 2004 Research paper

Karjaluoto, H., Mattila, M. and Pento, T. (2002), "Factors underlying attitude formation towards online banking in Finland", International Journal of Bank Marketing, ISSN 0265-2323, Vol. 20 No. 6, pp. 261-272.

Kolachi, N. (2006). "Internet banking in Pakistan: Some Critical weaknesses and Suggestions for improvement". Journal of Institute of Bankers Pakistan. 73(2), 23-32.

Kundi, G.M. & Shah, B. (2009), "IT in Pakistan: Threats & Opportunities for e-business", *The Electronic Journal on Information Systems in Developing Countries*, 36 (8), pp. 1-31

Walfried M. Lassar, Chris Manolis, Sharon S. Lassar (2005), "The relationship between consumer innovativeness, personal characteristics, and online banking adoption", International Journal of Bank Marketing; Volume: 23 Issue: 2; 2005 Research paper

Woodall, Tony (2003), Conceptualising 'Value for the Customer': An Attributional, Structural and Dispositional Analysis, Academy of Marketing Science Review.

Zarmeene, S. (2006), "Phone Crazy: The ubiquitous cell phone can do so much more than just make a phone call", *Spider*, 8 (89), pp. 40-43.

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