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INTRODUCTION
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STATEMENT OF THE PROBLEM
OBJECTIVES
HYPOTHESIS (ES)
RESEARCH METHODOLOGY
RESULTS & DISCUSSION
FINDINGS
RECOMMENDATIONS/SUGGESTIONS
CONCLUSIONS
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REFERENCES
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- Bowersox, Donald J., Closs, David J., (1996), "Logistical Management." Tata McGraw, Hill, New Delhi.
- Hunker, H.L. and A.J. Wright (1963), "Factors of Industrial Location in Ohio" Ohio State University, Nigeria.

CONTRIBUTIONS TO BOOKS

- Sharma T., Kwatra, G. (2008) Effectiveness of Social Advertising: A Study of Selected Campaigns, Corporate Social Responsibility, Edited by David Crowther & Nicholas Capaldi, Ashgate Research Companion to Corporate Social Responsibility, Chapter 15, pp 287-303.

JOURNAL AND OTHER ARTICLES

- Schemenner, R.W., Huber, J.C. and Cook, R.L. (1987), "Geographic Differences and the Location of New Manufacturing Facilities," Journal of Urban Economics, Vol. 21, No. 1, pp. 83-104.

CONFERENCE PAPERS

- Garg, Sambhav (2011): "Business Ethics" Paper presented at the Annual International Conference for the All India Management Association, New Delhi, India, 19–23

UNPUBLISHED DISSERTATIONS

- Kumar S. (2011): "Customer Value: A Comparative Study of Rural and Urban Customers," Thesis, Kurukshetra University, Kurukshetra.

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WEBSITES

- Garg, Bhavet (2011): Towards a New Gas Policy, Political Weekly, Viewed on January 01, 2012 http://epw.in/user/viewabstract.jsp

MANAGEMENT OF TECHNOLOGY IN BANKS

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ABSTRACT

In view of this, technology has changed the contours of three major functions performed by banks, i.e., access to liquidity, transformation of assets and monitoring of risks. Further, Information technology and the communication networking systems have a crucial bearing on the efficiency of money, capital and foreign exchange markets. The Software Packages for Banking Applications in India had their beginnings in the middle of 80s, when the Banks started computerizing the branches in a limited manner. The early 90s saw the plummeting hardware prices and advent of cheap and inexpensive but high-powered PCs and servers and banks went in for what was called Total Branch Automation (TBA) Packages. The middle and late 90s witnessed the tornado of financial reforms, deregulation, globalization etc. coupled with rapid revolution in communication technologies and evolution of novel concept of 'convergence' of computer and communication technologies, like Internet, mobile / cell phones etc.

KEYWORDS

technology in banks, Internet banking, computersied banking.

INTRODUCTION

Dramatic manifestations of international development are, for the most part, technologically driven and supported. Industrial age technologies of transportation, electrification, farming, medicine and manufacturing can transform economies. The information age technologies of computing and communication, bio-technology and genetics hold even more promise for the still undeveloped areas of the world. New wireless technologies, for example, do not require massive investments in infrastructure but can enable communications. The field of technology management is concerned with the development of the knowledge and management practices required to develop and use technology for organizational and societal advantage. The management of technology requires knowledge of technology. This means at least some awareness of what technology is about and where it fits within the totality of knowledge.

Technology management grew out of engineering management – a discipline developed over the course of the last century in engineering schools, primarily in the United States. Engineering management has traditionally focused on capital budgeting, project management, cost control, management of the engineering design process, and production control. In other words, it has primarily focused on what to do with existing technology – only recently has it embraced R&D management – the development of entirely new technology. On the other hand, Technology Management has grown over the last 15 years as a field within business schools in response to the growing importance of technology to the strategy and operations of the organization. Technology Management includes the traditional areas of Engineering Management but is more focused on technology as a strategic force for the enterprise, on the importance and development of services as well as products, and on invention and innovation as sources of advantage for the organization (Gerard, 1996).

Banking sector comprise licensed institutions namely commercial banks, finance companies, merchant banks, discount houses and money brokers which are licensed under the banking and financial institutions ACT 1989 and supervised by BNM. The banking sector plays an important role as financial intermediary and is a primary source of financing for the domestic economy, accounting for about 10% of the total assets of the financial system as at end. In 1990, the banking sector in India saw greater emphasis being placed on technology and innovation. Banks began to use technology to provide better quality of services at greater speed. Therefore, banks have begun to take an innovative approach towards banking with the objective of creating more value for customers and consequently, the banks. While traditionally, banking meant "borrowing and lending" in the latter part of the 20th century, the word look on a different meaning altogether. Banks no longer restricted themselves to traditional banking activities, but exposed never avenues to increase business and capture new market. In this light, the objective of the study is:

- To study various technological services provided by bank.
- To what extent modern technology has an edge over traditional technology
- To explore the reasons for offering technology to customers.
- To analyze the benefits of using the technological services
- To study the challenges faced by banks in using the technology.

DATABASE, SCOPE AND METHODOLOGY

The universe of the study consisted of Banks providing technological services to customers in Amritsar City. A sample of 20 Banks, i.e. 10 public sector and 10 private sector banks, which provide services to customers has been taken. Sample included people of both sexes with different Background. The selection of respondents has been taken due to based on convenient sampling. Data used in this report is primary. Primary data has been collected by using Questionnaire method on.

- **5-point scale.**
  - 2 pts given to S.A.
  - 1 pts given to A.
  - 0 pts given to Neither
  - -1 pts given to D
  - -2 pts given to S.D.
- **Percentage method**

To analyze the question by using percentage method and ranks assign.

Percentage method have been used weighted average scores have been calculated. The weighted Average scores have been calculated where the responses were indicated in terms of S.A., A

$$\text{Weighted Average Score} = \frac{W_1F_1}{\text{Total number of Respondents}}$$

W = Weight
F = Frequency

MANAGEMENT OF TECHNOLOGY IN BANKS

With increased competition in the banking Industry, the net interest margin of banks has come down over the last one decade. Liberalization with Globalization will see the spreads narrowing further to 1-1.5% as in the case of banks operating in developed countries. Banks will look for fee-based income to fill the gap in interest income. Product innovations and process re-engineering will be the order of the day. The changes will be motivated by the desire to meet the customer requirements and to reduce the cost and improve the efficiency of service. All banks will therefore go for rejuvenating their costing and pricing to segregate profitable and non-profitable business. The following are reasons for bank to stay with current technological innovations:

- **Need to overcome Blockers/Barriers to profitability and growth:** Banks must try to reduce its barriers. It must adopt technology that provides better facilities to ultimate consumer, which leads to profitability and growth of banks.
- **Search for a competitive advantage over competitors:** For many years the banks have enjoyed a certain level of protection from potential new competitors. From the existing competition, bank has to search for the advantages over competitors, so that customers must enjoy it. Discovery costs of new opportunities and identifying where your competitor is vulnerable and where your relative strength provides strategic advantages which can be exploited and magnified, can be quite high.
- **Need to comply with changing regulatory and social aspects that affect the bank:** Another barrier that protected the "old ways of doing business" was the fact that technology was expensive evens before that advent of computers i.e. the process of physical transfer of funds and documents were slower and more expensive. The larger banking organizations introduce innovations earlier, compared to smaller banks. In many cases, small institutions could not afford the large overhead costs of maintaining an advanced technology and had to pay for them in the form of more extensive Correspondent Banking relationship with larger institutions, since many of the check clearing transactions could have been done through the Federal Reserve or private clearing houses, with less deposits requirements than those which the smaller institutions had to maintain with their larger brethren in return for the technology assistance through the "Correspondent Banking relationship". (Samuel, 2004).

FUTURE LANDSCAPE OF INDIAN BANKING

Liberalization and De-regulation process started in 1991-92 which had made a sea change in the banking system. From a much-regulated environment, we have gradually moved into a market driven competitive system. Our move towards global benchmarks has been, largely, calibrated and regulator driven. The pace of changes gained momentum in the last few years. Globalization would gain greater speed in the coming years particularly because of expected opening up of financial services under WTO. Four trends change the banking industry world over, viz.

- Consolidation of players through mergers and acquisitions,
- Globalization of operations,
- Development of new technology
- Universalisation of banking.

With technology acting as a catalyst, we expect to see great changes in the banking scene in the coming years. The Committee has attempted to visualize the financial world 5-10 years from now. The picture that emerged is somewhat as discussed below. It entails emergence of an integrated and diversified financial system. The move towards universal banking has already begun. This will gather further momentum bringing non-banking financial institutions also, into an integrated financial system. The traditional banking functions would give way to a system geared to meet all the financial needs of the customer. We could see emergence of highly varied financial products, which are tailored to meet specific needs of the customers in the retail as well as corporate segments. The advent of new technologies could see the emergence of new financial players doing financial intermediation. For example, we could see utility service providers offering say, bill payment services or supermarkets or retailers doing basic lending operations. The conventional definition of banking might undergo changes.

Presently, Indian share in the global trade is just about 0.8%. The long-term projections for growth in international trade are placed at an average of 6% per annum. With the growth in IT sector and other IT Enabled Services, there is tremendous potential for business opportunities. Keeping in view the GDP growth forecast under India Vision 2020, Indian exports can be expected to grow at a sustainable rate of 15% per annum in the period ending with 2010. This again will offer enormous scope to Banks in India to increase their forex business and international presence. Globalization would provide opportunities for Indian corporate entities to expand their business in other countries. Banks in India wanting to increase their international presence could naturally be expected to follow these corporate and other trade flows in and out of India.

One of the concerns is quality of bank lending. Most significant challenge before banks is the maintenance of rigorous credit standards, especially in an environment of increased competition for new and existing clients. Experience has shown us that the worst loans are often made in the best of times. Compensation through trading gains is not going to support the banks forever. Large-scale efforts are needed to upgrade skills in credit risk measuring, controlling and monitoring as also revamp operating procedures. Credit evaluation may have to shift from cash flow based analysis to "borrower account behavior", so that the state of readiness of Indian banks for Basle II regime improves. Corporate lending is already undergoing changes. The emphasis in future would be towards more of fee based services rather than lending operations. Banks will compete with each other to provide value added services to their customers.

As Banks seek niche areas, we could see emergence of some national banks of global scale and a number of regional players. Corporate governance in banks and financial institutions would assume greater importance in the coming years and this will be reflected in the composition of the Boards of Banks. Concept of social lending would undergo a change. Rather than being seen as directed lending such lending would be business driven. With SME sector expected to play a greater role in the economy, Banks will give greater overall focus in this area. Changes could be expected in the delivery channels used for lending to small borrowers and agriculturalists and unorganized sectors (micro credit). Use of intermediaries or franchise agents could emerge as means to reduce transaction costs. Technology will bring fundamental shift in the functioning of banks. It would not only help them bring improvements in their internal functioning but also enable them to provide better customer service. Technology will break all boundaries and encourage cross border banking business. Banks would have to undertake extensive Business Process Re-Engineering and tackle issues like

- How best to deliver products and services to customers
- Designing an appropriate organizational model to fully capture the benefits of technology and business process changes brought about.
- How to exploit technology for deriving economies of scale and how to create cost efficiencies
- How to create a customer - centric operation model.

Entry of ATMs has changed the profile of front offices in bank branches. Customers no longer need to visit branches for their day to day banking transactions. E-banking and Internet banking have opened new avenues in "convenience banking". Internet banking has also led to reduction in transaction costs for banks to about a tenth of branch banking. Technology solutions would make flow of information much faster, more accurate and enable quicker analysis of data received. This would make the decision making process faster and more efficient. For the Banks, this would also enable development of appraisal and monitoring tools which would make credit management much more effective. The result would be a definite reduction in transaction costs, the benefits of which would be shared between banks and customers. With greater use of technology solutions, we expect IT spending of Indian banking system to go up significantly. One area where the banking system can reduce the investment costs in technology applications is by sharing of facilities. While dealing with technology, banks will have to deal with attendant operational risks. This would be a critical area the Bank management will have to deal with in future. Payment and Settlement system is the backbone of any financial market place. The present Payment and Settlement systems such as Structured Financial Messaging System (SFMS), Centralized Funds Management System (CFMS), Centralized Funds Transfer System (CFTS) and Real Time Gross Settlement System (RTGS) will undergo further fine-tuning to meet international standards. Needless to add, necessary security checks and controls will have to be in place. In this regard, Institutions such as IDRBT will have a greater role to play (Gupta, 2003).

The focus has on the introduction of new accounting and prudential norms relating to income recognition, provisioning and capital adequacy, and deregulation of interest rates & easing of norms for entry in the field of banking. Entry of new banks resulted in the paradigm shift in the ways of banking in India. The growing competition, growing expectations led to increased awareness amongst banks on the role and importance of the usage of technology in the banking industry as a whole. The arrival of foreign banks and private banks with their superior state-of-the-art technology-based services pushed the Banks in India to follow the suit by adopting the latest technologies for meeting the threat of competition and retaining their customer base. Indian banking industry, today is in the midst of an IT revolution. A combination of regulatory and competitive reasons has led to the increasing importance of total banking automation in the Indian Banking Industry

Chief technology officers will find it easier to balance competing requests for resources when each area of the financial institution has a better understanding of how it fits into the enterprise-wide system. Hence, in the era of awakening of the banking sector towards Technology implementation this study has been conducted to meet the challenge of competition and customer's expectations.

RESULTS AND ANALYSIS

TABLE 1: TECHNOLOGICAL SERVICES PROVIDED BY BANKS

S.No.	Technological services	Private Banks	Public Banks
1	Computerization System	10	10
2	Core Banking	9	7
3	Networking	9	9
4	Internet Banking	9	8
5	Mobile Banking	8	4
6	Phone Banking	7	6
7	Forex Services	7	7
8	Demat of Shares	7	3
9	Customer Relationship Management (CRM)	10	10
10	Closed User Group (CUG) Networks	1	4
11	Resource Management	4	4
12	Wireless Technology	1	3
13	Call Centers Services	7	2
14	ATM Service\Smart Cards	9	6
15	Issue of PAN Card Service	0	0
16	Electronic Return(E-Return) Service	5	3
17	All	0	0

Table 1 shows the number of technological services provided by Private and Public banks. It shows that Computerization System, Customer Relationship Management (CRM) Networking and Forex Services technologies mostly used by Private Banks and Public Banks both. Private Banks providing Core Banking, Internet Banking, Mobile Banking, Phone Banking, Demat of Shares, Call Centers Services ATM Service\Smart Cards Electronic Return (E-Return) Service more in comparison to Public Banks. Closed User Group (CUG) Networks, Wireless Technology are provided by Public Banks more in comparison to Public Banks.

TABLE 2.1: USAGE OF TECHNOLOGY BY PRIVATE BANKS

S.no.	TECHNOLOGICAL SERVICES	No	Low	Medium	High
1	Computerization System	0	0	1	9
2	Core Banking	1	0	4	5
3	Networking	0	1	0	9
4	Internet Banking	0	1	1	8
5	Mobile Banking	1	1	3	5
6	Phone Banking	1	2	3	4
7	Forex Services	5	0	2	3
8	Demat of Shares	5	1	1	3
9	Customer Relationship Management (CRM)	0	0	5	5
10	Closed User Group (CUG) Networks	7	1	1	1
11	Resource Management	6	0	1	3
12	Wireless Technology	7	2	0	1
13	Call Centers Services	1	4	1	4
14	ATM Service\Smart Cards	1	1	3	5
15	Issue of PAN Card Service	8	2	0	0
16	Electronic Return(E-Return) Service	6	2	0	2

Table 2.1 shows the usage extent of Technology by Private Bank. It shows the technology usage at four levels as no use, low level, and medium level and at high level. In Private Banks Computerization System, Networking and Internet Banking is used highly while Forex Services, Demat of Shares, Closed User Group (CUG) Networks, Resource Management, Wireless Technology, Issue of PAN Card Service, and Electronic Return (E-Return) Service are not so much in use.

TABLE 2.2: USAGE OF TECHNOLOGY BY PUBLIC BANKS

S.no.	TECHNOLOGICAL SERVICES	No	Low	Medium	High
1	Computerization System	0	0	3	7
2	Core Banking	3	1	1	5
3	Networking	1	0	2	7
4	Internet Banking	2	0	4	4
5	Mobile Banking	5	2	1	2
6	Phone Banking	5	0	2	3
7	Forex Service	2	1	0	7
8	Demat of Shares	5	4	1	0
9	Customer Relationship Management (CRM)	1	1	5	3
10	Closed User Group (CUG) Networks	5	3	1	1
11	Resource Management	5	2	2	1
12	Wireless Technology	7	2	0	1
13	Call Centers Services	6	3	0	1
14	ATM Service\Smart Cards	2	2	1	5
15	Issue of PAN Card Service	7	3	0	0
16	Electronic Return(E-Return) Service	7	1	1	1

Table 2.2 shows the usage extent of Technology by Public Bank. It shows the technology usage at four levels as no use, low level, and medium level and at high level. Computerization System, Networking, Forex Service is highly used while Mobile Banking, Phone Banking, Closed User Group (CUG) Networks, Resource Management, Wireless Technology, Call Centers Services, Issue of PAN Card Service, Electronic Return(E-Return) Service is not so much is used.

TABLE 3 : REASONS FOR OFFERING TECHNOLOGY

Reasons	Private Banks	(%)	Public Banks	(%)
Profit	8	80	9	90
Convenience	8	80	3	30
Competition	10	100	9	90
Retain Customers	9	90	9	90
New Customers	8	80	7	70
Customer's Request	3	30	4	40

CHART 1

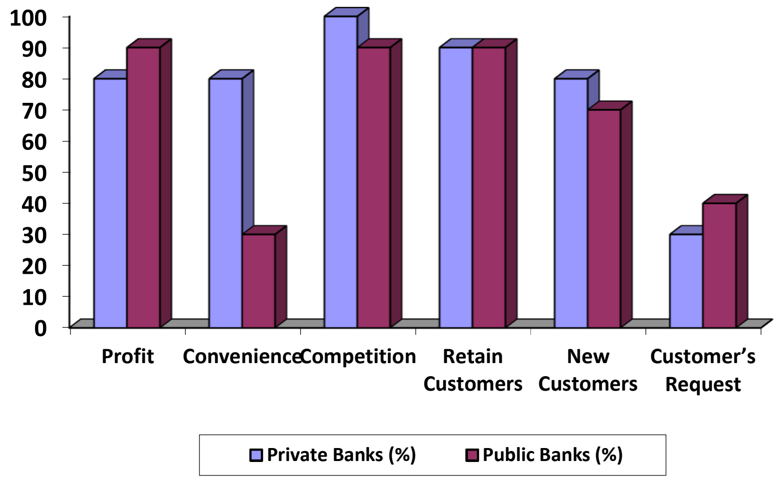

Table 4 shows that Banks are offering new technology because of following reasons:

- Profit
- Convenience
- Competition
- Retain Customers
- New Customers
- Customer's Request

Competition, Profit and Retain Customers are most important reasons for offering new technologies in both Private Banks and Public Banks both.

TABLE 4: MANAGEMENT OF DATABASE BY BANKS

Database	Private Banks	(%)	Public Banks	(%)
Manually	0	0	0	0
Technically	1	10	3	30
Both	9	90	7	70

Table 4 shows that 90 % Private Banks and 70 % Public Banks manage its database by using both ways i.e. manually and technically.

TABLE 5: COPE UP WITH NEW TECHNOLOGICAL INNOVATIONS

Time frame	Private Banks	(%)	Public Banks	(%)
Immediately	8	80	4	40
After some time	2	20	6	60
Never	0	0	0	0

Table 5 shows that 80% Private Banks immediately cope up with technological innovations and 20% after sometime. 40% Public Banks immediately cope up with technological innovations while 60% after sometime.

TABLE -6: INTRODUCTION OF TECHNOLOGY TO CUSTOMERS

Ways	Private Banks	(%)	Public Banks	(%)
Seminar	8	80	7	70
Phone	6	60	2	20
E-Mails	6	60	1	10
Fax	1	10	0	0
Pre-recorded audio	2	20	1	10
Personal Contact	10	100	10	100
Pamphlets	10	100	10	100

Table 6 explains that both Private Banks and Public Banks used Personal Contact and Pamphlets mostly for introduction of technological innovations to customers. Seminar, Phone, E-Mails are also used by private banks more in comparison to public banks.

CHART 2

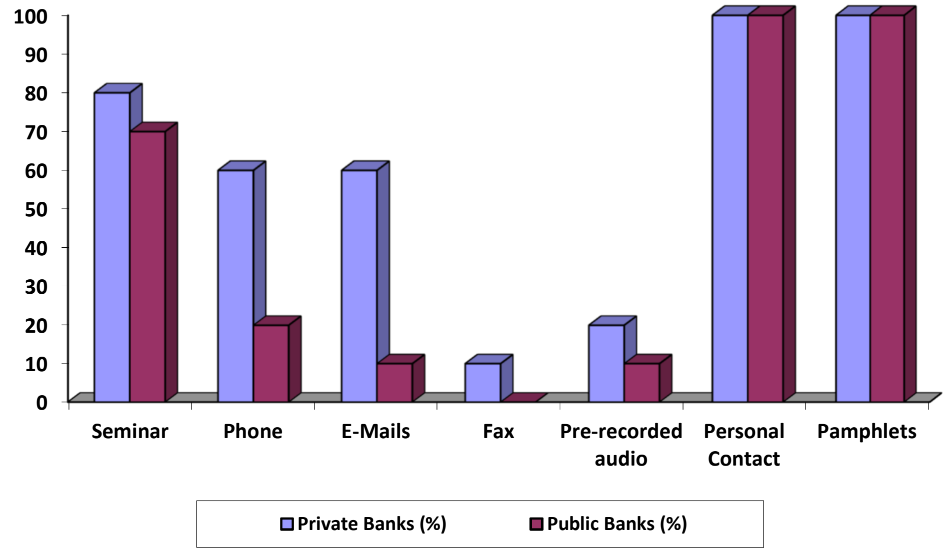

TABLE-7.1: BENEFITS OF USING TECHNOLOGY BY PRIVATE BANKS

S.No.	Benefits	Respondents	Ranks
1	Reduction in manual work	1.8	3.5
2	Saving in time	1.9	5
3	Establishing strong customer base	1.8	3.5
4	Increase in reputation	1.4	1
5	Meeting competition	1.6	2

Table 7.1 shows that because of technology Banks have number of benefits.

- Saving in time
- Meeting competition
- Reduction in manual work
- Establishing strong customer base
- Increase in reputation

However, saving in time is one of the most important benefits, which is enjoyed by private banks most. Reduction in manual work and establishing strong customer base are also enjoyed as benefits by private banks.

TABLE 7.2: BENEFITS OF USING TECHNOLOGY BY PUBLIC BANKS

S.No.	Benefits	Respondents	Ranks
1	Reduction in manual work	1.7	2.5
2	Saving in time	1.8	4
3	Establishing strong customer base	1.6	1
4	Increase in reputation	1.7	2.5
5	Meeting competition	2	5

Table 7.2 shows that because of technology Banks have number of benefits.

- Saving in time
- Meeting competition
- Reduction in manual work
- Establishing strong customer base
- Increase in reputation

Meeting competition and saving in time are the most important benefits, which are enjoyed by public banks most.

TABLE-8.1: CHALLENGES FACED BY BANKS IN USING TECHNOLOGY BY PRIVATE BANKS

S.No.	Challenges	Respondents	Ranks
1	Difficulty in use of technology	0.2	4
2	Additional training & development cost	.0.3	5
3	Administrative cost	.0.4	6
4	Customer dissatisfaction	-1.1	1
5	Tough Competition	-0.3	2
6	Grievances from customers	-0.2	3

Table 8.1 shows that administrative cost, additional training & development cost and difficulty in use of technology are the main challenges faced by private banks.

TABLE-8.2: CHALLENGES FACED BY BANKS IN USING TECHNOLOGY BY PUBLIC BANKS

S.No.	Challenges	Respondents	Ranks
1	Difficulty in use of technology	0.1	2.5
2	Additional training & development cost	.0.8	5
3	Administrative cost	.0.5	4
4	Customer dissatisfaction	-0.7	1
5	Tough Competition	1.5	6
6	Grievances from customers	0.1	2.5

Table 8.2 shows that tough Competition, additional training & development cost administrative cost are the main challenges faced by public banks

FINDINGS AND RECOMMENDATIONS

From my survey, I have found that employees in banks do not have much knowledge about technology using in banks. They are not aware about many technologies. New developments in technologies of banks have shaped the research environment in the last decade. Increasingly, highly educated experts in research institutes want more developed technologies. Banks will need to move away from the transaction-processing model to become the advisers of choice for their corporate. Best way for banks to maximize organic growth is to personalize the customer experience. Private Banks and Public Banks must prefer modern technology over traditional technology because of following advantages:

- Time saving
- Accurate
- Reduction in Manual Work
- Resulting in Cost Benefit

CONCLUSION

In view of this, technology has changed the contours of three major functions performed by banks, i.e., access to liquidity, transformation of assets and monitoring of risks. Further, Information technology and the communication networking systems have a crucial bearing on the efficiency of money, capital and foreign exchange markets. The Software Packages for Banking Applications in India had their beginnings in the middle of 80s, when the Banks started computerizing the branches in a limited manner. The early 90s saw the plummeting hardware prices and advent of cheap and inexpensive but high-powered PCs and servers and banks went in for what was called Total Branch Automation (TBA) Packages. The middle and late 90s witnessed the tornado of financial reforms, deregulation, globalization etc coupled with rapid revolution in communication technologies and evolution of novel concept of 'convergence' of computer and communication technologies, like Internet, mobile / cell phones etc.

The study based on Management of Technology in Banks survey through predesigned Questions suffers fear a basic limitation of different between what is recorded and what is actually happened, no matter how carefully the questionnaire has been designed and field of investigation conducted. The respondents may deliberately not give the correct answers and there is no way of checking back on respondents responses. I have tried to minimize such errors yet the possibility of an error creeping in, may be there. Further the lack of time and financial resources also prevented an in depth study of the problem. In addition, some other limitations regarding the validity of conclusion may be mentioned as following:

- The present study is confined to the city of Amritsar only. The findings of the study may not be applicable to the other parts of the country.
- The sample taken may not be fully represent able because the sampling Technique used was convenient sampling.
- Sample size is taken as 20 banks only.
- There were time and resource constraints prevailing
- The accuracy of conclusion and findings depends upon accuracy of the respondents.

REFERENCES

1. *A Conceptual Framework*", downloaded from http://www.cisco.com/en/US/netsol/ns640/networking_solutions_products3825.html
2. Bhaskar, V. P (2006), "*Banking–Rationalization of Norms*", downloaded from www.rbiindia.org.RBI/2006-2007/210DBOD. No. Dir. BC. 47/13.07.05/2006-2007.
3. Dhall, C.S. and Kumar, S (2001), "*Technology in the Banking System*", National Institute of Bank Management, Pune.
4. Friedman, A. E. and Stohr, E. (2006), "*Technology Management for Global Development:*
5. Gerard, H. G. (1996), "*Handbook of Technology Management*", McGraw-Hill Publishing Co. pp 4-6.
6. Gupta, C.S. (2003), "*Banking industry vision 2010*", downloaded from http://www.thehindubusinessline.com/2003/01/23htm
7. International Monetary Fund (2009c), World Economic Outlook Database, April.
8. Mishra K. A, "*Internet Banking in India-Part I*", downloaded from www.banknetindia.com/banking/ibkg.html.
9. Rao, B. M. (2007), "*Report on Indian Banking association*", IBA Newsletter, Mumbai downloaded from www.indianbanksassociation.org.
10. Reserve Bank of India (2006), "*Report on Trend and Progress of Banking in India*", Mumbai, pp 56.
11. Samuel, B. (2004), "*Some implications from technological developments affecting the commercial banking business: what happens when "blockers to busi ness" are overcome*", downloaded from http://www.researchgate.net/publication/4029647_A_conceptual_framework_for_technology_and_innovation.
12. Stamoulis, S.D (2002), "*How Banks Fit in an Internet Commerce Business Activities Model*", Journal of Bank Marketing, Vol. 8, No.2.
13. Stewart, M (1999), "CAM Module, ERP Module, SFA Module and CRM Module", U.K.

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