

The Impact of Information Technology Adoption on the Customers of Bank of India, Bangalore Urban – An Evaluative Study

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Abstract: *Today, banking is becoming increasingly complex and banks which fail to use technology to take their services to the common man and tap the potential of the rural sector will stand to lose. Ultimately, technology would be the key enabler and differentiator in accomplishing this objective. When we look at technology, the scope for innovation is immense – in the field of financial inclusion itself, right from biometric based systems to mobile based to simple Interactive Voice Response based applications. But it cannot be a one-size-fits-all approach. Recent years have witnessed phenomenal transformations in the operations of many businesses due to the immense advances in Information, Communication Technology (ICT). Banks have accordingly introduced web-based services, appropriately called Internet Banking. Many studies have looked at different aspects of this phenomenon, and their impact on the banking sector. In this context, an attempt is made to examine the impact of Information Technology (IT) adoption on the selected bank customers of Bank of India, Bangalore Urban. The study is carried out with the help of a structured questionnaire administered to 100 selected customers and with the help of their responses analysis is made thereafter, which is followed by findings of the study with few suggestions.*

Key Terms: *Information Technology, Internet Banking, Mobile Banking, Banking Technology, Banking services*

I. Introduction

Information and Communication Technology is playing a vital role across many industries and sectors, resulting in a positive impact on economic development cutting across the geographical barriers. It is important to note that the financial sector in general and banking sector in particular was one of the very first to utilize information technology way back in 1960s, and has thus the record of influencing the development process through technology. The banking sector is an example in which information technology infrastructures have had implications on the economic development of many nations across jurisdictions. Studies show that information technology coupled with knowledge management hold much potential for propelling the development process (Okpaku, 2003).

Computers are getting more sophisticated. They have given banks a potential they could only dream about and have given bank customers high expectations. The changes that new technologies have brought to banking and their impact on officers, employees, and customers of banks are enormous. Advances in technology are allowing for delivery of banking products and services more conveniently and effectively than ever before - thus creating new bases of competition. Rapid access to critical information and the ability to act quickly and effectively will distinguish the successful banks of the future. The bank gains a vital competitive advantage by having a direct marketing and accountable customer service environment and new, streamlined business processes.

The adoption of Electronic Payment Systems such as the National Electronic Fund Transfer (NEFT) and Real Time Gross Settlement System (RTGS) has also enhanced efficiency of banks. In terms of volume, the share of electronic transactions, as a percentage of total transactions, was 40% in March 2010, as compared to 32.8% in March 2009. By transaction value, this share increased to 89% in March 2010, over 83.9% in March 2009. The number of RTGS transactions that the Reserve Bank of India (RBI) settles per day has increased from 6,000 in 2004–05 to 100,000, currently. The number of NEFT transactions that the RBI settles per day has increased from 270,000 in 2005 to 4,000,000.

- Currently, 98% of public sector bank branches are fully computerized, IT adoption continues to grow at a rate of nearly 14.2% in the period 2011- 2012 was driven primarily by the implementation of core banking, financial inclusion projects, guidelines on operational automation mandated by RBI and other niche applications like centralised pricing management, global risk management, analytics and mobility-driven applications.

- The current level of IT spend by an Indian bank ranges between 0.2% to 5.0% of its total annual revenue depending on its size, banking segment and category of classification.
- IT spend by an Indian bank has been calculated to be typically close to 20% of Information Technologies total expenditure in 2011. Nationalized banks which form chunk of the banking sector continues to spend approximately 62% of the total spend on technology (when all banks are calculated together).
- The current times are set to witness momentous developments in terms of IT automation of co-operative and rural banking segments, extension of banking facilities to the remotest villages and increased penetration ratios of bank branches and ATMs across the span of the country.

II. Review of Literature

Review of a few important works is made in the following paragraphs with an important objective to identify the research gap that exists at present.

Rahmath Safeena et.al, (2011)¹ in their work *Internet Banking Adoption in an Emerging Economy: Indian Consumer's Perspective* analysed the factors influencing the consumer's adoption of internet banking in India and hence investigates the influence of perceived usefulness, perceived ease of use and perceived risk on use of Internet Banking. Rahmath Safeena et.al, (2012)² in his study *Technology Adoption and Indian Consumers: Study on Mobile Banking* identified that the evolution of e-banking started from the use of Automatic Teller Machines (ATMs) and telephone banking (tele-banking), direct bill payment, electronic fund transfer and the revolutionary online banking transformation from the traditional banking to e-banking has been a 'leap' change. Tavishi and Santosh Kumar, (2013)³ in their study *An Empirical Study on Technology Adoption by Indian Banks* studied the factors influencing the customers for the adoption of internet banking and mobile banking in India and hence investigates the influence of perceived usefulness, perceived ease of use and perceived risk on use of internet banking and mobile banking. Sabita Paul, (2013)⁴ in his work *The Adoption of Electronic Banking (E-Banking) in Odisha, India* described the current and prompt technological revolution altering the whole world which has crucial impact on the banking sector based on data, collected from customers of different commercial banks of Odisha.

Rupanjali Nath et.al, (2013)⁵ in their research paper *Factors influencing IT Adoption by Bank Employees: An Extended TAM* described the Factors influencing IT Adoption by Bank Employees: An Extended TAM Approach. The TAM model identifies perceived usefulness (PU), and Perceived Ease of Use (PEU) as impacting attitude towards IT and behavioural intention. Jamila et.al, (2013)⁶ in their work *Info-Tech Adoption in Banks in Yemen: A Case Study of YBRD* investigated the general impact of Information Technology (IT) on the banking industry in Yemen and discusses the response of Yemeni banks to these technological developments. Yogesh Jain (2013)⁷ in his work *Mobile Banking: A Study on Adoption and Challenges in Southern Rajasthan, India* identified that the Information technology has basically been used under two different avenues in banking vi., communication and connectivity and other is business process. Prema C., (2013)⁸ in her research article *Factors Influencing Consumer Adoption of Internet Banking in India*, examined the process of internet banking services and stresses that marketing experts should emphasize these benefits and its adoption provides and awareness can also be improved to attract consumers' attention to internet banking services. Mohamed Gamal Aboelmegeed et.al, (2013)⁹ in their study *Mobile Banking Adoption: An Examination of Technology Acceptance Model and Theory of Planned Behavior* investigated the adoption of mobile banking through integrating Technology Acceptance Model (TAM) and Theory of Planned Behavior (TPB). Analyzing survey data from 119 respondents yielded important findings that partially support research hypotheses. The results indicated a significant positive impact of attitude toward mobile banking and subjective norm on mobile banking adoption.

Like this a number of studies are carried out in India and abroad focusing on various aspects of technology in banks

III. Statement of the Problem and Need for the Study

The use of Information Technology (IT) in the banking sector has seen a phenomenal growth in India. The adoption of the information technology by banks has strongly affected the bank customers and the rapid advancements in communication and information technology have changed the functional scenario of the banking sector significantly. For its effective use and implementation, employees' acceptance and the consequent use of IT are important. The usage of information technology (IT), broadly referring to computers and peripheral equipment, has seen tremendous growth in service industries in the recent past. The most obvious example is perhaps the banking industry, where through the introduction of IT related products in internet banking, electronic payments, security investments, information exchanges, banks now can provide more

diverse services to customers with less manpower. Seeing this pattern of growth, it seems obvious that IT can bring about equivalent contribution to profits. In this context, it is necessary to examine the impact of Information Technology Adoption on bank customers. Hence, an attempt is made to analyse and examine the impact of IT on the selected bank customers of Bank of India, Bangalore Urban.

Objectives of the Study

- To examine the Information Technology adoption by Bank of India, Bangalore Urban
- To analyse the Impact of Information Technology on the selected customers of Bank of India, Bangalore Urban

Scope of the Study

The study aims to investigate and evaluate the impact of Information Technology adoption on the selected banks customers of Bank of India (BOI) in Bangalore Urban.

Sources of Data Collection

Primary data for the study are collected from BOI customers, Bangalore Urban through structured questionnaire. **Secondary data** are collected from books, journals, research papers, newspapers, on-line sources, Reports of RBI, Indian Banks' Association, Indian Institute of Banking and Finance, Institute for Development and Research in Banking Technology.

Hypothesis of the Study

H₀₁: There is an association between Information Technology adoption and customer Services of BOI

Sample Design

The Simple Random Sampling method is used for the present study in the selected area of BOI. The sample size taken for the study is 75.

Period of the Study

The study covered a period of one year from 2012 to 2013

Statistical Tools and Techniques

The present study has used frequency distribution and correlation for the analysis and interpretation of data.

Testing of Hypothesis

H₀₁: There is an association between Information Technology adoption and customer Services of BOI

Table – 1

Correlation						
Description	Correlation	Internet Banking	Mobile Banking	Core Banking Solution	Plastic Money	ATM Services with Bio-Metric Facilities
Internet Banking	Pearson Correlation	1	.797**	.931**	.869**	.897**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	150	150	150	150	150
Mobile Banking	Pearson Correlation	.797**	1	.903**	.957**	.632**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	150	150	150	150	150
Core Banking Solution	Pearson Correlation	.931**	.903**	1	.960**	.841**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	150	150	150	150	150
Plastic Money	Pearson Correlation	.869**	.957**	.960**	1	.760**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	150	150	150	150	150
ATM Services with Bio-Metric Facilities	Pearson Correlation	.897**	.632**	.841**	.760**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	150	150	150	150	150

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

Source – Survey Data, 2013

The value of Pearson correlation arrange from -1 to +1 with negative numbers representing a correlation (as one variable increases, the other variable decreases) and positive numbers representing a positive correlation (as one variable increases, the other also increases). The closer the value is to -1 or +1 the stronger

the association is between the variables. The hypothesized a positive relationship between the Information Technology adoption and customer services of BOI. Since the Pearson and correlation value was (0.797) for types of banking services, (0.931) for the investor, (0.869) for Information Technology adoption and customer services of BOI. (0.867) for the bank services and it is significant, so we can save that the data (A) support our hypothesis.

Analysis and Interpretation

The present study which is focused mainly on the impact of the IT Adoption on the BOI Customers in the Bangalore urban region with the help of collected data is presented here.

(a) Socio Economic Profile of Respondents

01. 29% are male and 21% are female, 32% are Private sector employees and only 2% are agriculturist and Retired employees.
02. 34% of the bank customers have between the monthly income of 20,000 - 30,000 and 2% are between the monthly income of 50,000 - 1, 00,000.
03. 34% of the respondents are graduates and 8% are qualified up to SSLC
04. 50% of the respondents between the age group of 20 – 30 and 2% of the respondents are between the ages of 60 and above
05. 72% of the customers are savings bank account holders and 28% are current account holders.

Table – 2: Benefits of IT services to the selected customers of BOI, Bangalore Urban

Sl. No.	Description	Rating									
		1		2		3		4		5	
		No.	%	No.	%	No.	%	No.	%	No.	%
01.	Customer Relationship Management (CRM)	17	34	20	40	02	04	06	12	05	10
02.	Demand Draft	14	28	25	50	01	02	09	18	01	02
03.	Easy Deposit and Withdrawal	03	06	12	24	04	08	22	44	09	18
04.	Fast, Quick Transaction with perfection	07	14	21	42	02	04	18	36	02	04
05.	Information Security	10	20	32	64	03	06	04	08	01	02
06.	Reduce the time in the Collection of Cheques	08	16	22	44	01	02	13	26	06	12

Source: Survey Data

(Note: 1 - Strongly Agree 2 – Agree 3 - Neutral 4 -Disagree 5 – Strongly Disagree)

Above table – 3 indicates the benefits of IT in the selected Bank. It reveals that 84% respondents Strongly Agreed and agreed for the benefits of Information Security, more than 75% for the benefits of Demand Draft, followed by a total of 74% for Customer Relationship Management, while 62% of the customers disagreeing the benefit of Easy Deposit and Withdrawal (only 30% agreeing) 40% disagree for Fast, Quick Transaction with perfection followed by reducing the time in collection of cheques (38%) From the results, it is observed that maximum customers of BOI are enjoying the benefits of IT adoption.

Table – 3: Usage of specific IT Services of the selected customers of BOI, Bangalore Urban

Sl. No.	Description	Rating									
		1		2		3		4		5	
		No.	%	No.	%	No.	%	No.	%	No.	%
01.	Check the Bank Balance	13	26	33	66	02	04	02	04	-	-
02.	Easy Accounts maintenance	11	22	22	44	02	04	11	22	04	08
03.	International transactions	12	24	31	62	03	06	04	08	-	-
04.	LIC Premium transfer or payments	11	22	25	50	06	12	04	08	04	08
05.	Online shopping	03	06	13	26	02	04	17	34	15	30
06.	Online Trading and payments	16	32	24	48	04	08	03	06	03	06
07.	Payment of LPG or Electricity Bill, Telephone Bill, School/College fee payments	-	-	02	04	03	06	25	50	20	40
08.	Quick Settlement	21	42	28	56	01	02	-	-	-	-

Source: Survey Data

(Note: 1 - Strongly Agree 2 - Agree 3 – Neutral 4 - Disagree 5 – Strongly Disagree)

From the above table – 4, it can be observed that out of specific IT services, 98% customers strongly agreed and agreed the usage of IT for quick settlement, 92% for checking the balance, more than 85% for the usage of International transactions, followed by 80% for online trading and payments. On the other side, it can also be found that 90% of customers disagree for the usage of IT services towards the payment of LPG or

Electricity Bills and 64% disagreeing IT for online shopping. On the whole, it can be concluded that maximum customers accepted the usage of technology for their specific requirements in their day to day transactions.

Table – 4: Information Technology (IT) adoption among the selected customers of BOI – Bangalore Urban

Sl. No.	Description	Rating									
		1		2		3		4		5	
		No.	%	No.	%	No.	%	No.	%	No.	%
01.	Core Banking Solution (CBS)	19	38	21	42	05	10	03	06	02	04
02.	Electronic Clearance System (ECS)	05	10	09	18	08	16	14	28	14	28
03.	Electronic Payment System (EPS)	04	08	09	18	10	20	16	32	11	22
04.	Internet Banking	06	12	12	24	07	14	15	30	10	20
05.	Mobile Banking (MB)	07	14	20	40	04	08	13	26	06	12
06.	National Electronic Fund Transfer (NEFT)	23	46	21	42	05	10	01	02	00	00
07.	Plastic Money (PM)	09	18	16	32	02	04	12	24	11	22
08.	Real Time Gross Settlement (RTGS)	14	28	20	40	09	18	05	10	02	04
09.	Virtual Banking and E – Money	10	20	22	44	06	12	05	10	07	14

Source: Survey Data

(Note: 1 - Strongly Agree 2 – Agree 3 – Neutral 4 -Disagree 5 – Strongly Disagree)

From the table it can be observed that out of respondents, a total of 88% strongly agreed and agreed to use the NEFT followed by 80% customers agreed for the adoption of CBS, 68% strongly agreed and agreed for the RTGS services. A total of 56% disagreed for ECS and 54% for the EPS. It is clear from table - 2 that selected customer’s attitude towards the adoption of the IT is positive and highly acceptable by them.

Limitations of the Study

The present study has certain shortcomings which are enlisted as follows:

- This paper examines only the impact of IT adoption on customers of BOI
- The scope covers Bangalore urban area;
- The study is based on available primary and secondary data; and
- This study is confined to the sample size of 100.

Major Findings of the Study

The following are few findings of the study which are presented below:

- 76% of the respondents opined that the IT adoptions benefits and it strongly affected their routine life style;
- 84% of respondents agreed that IT adoptions helps the bankers in reducing the work their manpower and support in providing the best and quick services to the customers;
- 94% of the customers agreed that Time Saving was the most important benefit in Internet banking whereas 11% of the only agree that IT implementation will improve the banker customer relationship;
- 86% of the respondents were strongly accepted that convenience was most influencing factor in IT adoption
- 68% of the BOI customers were frequently using the Internet Banking transaction and IT services provided by the banks, whereas 6% of the respondents never used the Internet Banking transaction.
- 66% of the respondents used the IT services of Electronic fund transfer in Internet Banking whereas 4% of the respondents only used the services of Secured transaction.
- 64% of the customers agreed that security was more benefited in traditional Banking whereas 12% agree that adoption of new IT will be benefited;
- 32% of the respondents were aware about IT adoption through advertisements whereas 18% of the customers are aware through their Bankers;

IV. Suggestions

- To initiate IT adoption more in their routine life style;
- To make available the best and quick services to the customers with the new banking technologies;
- Implementation of the new IT policies and regulations effectively by both the banker and customer;
- To encourage the customers to use internet banking service to reduce the time and additional manpower work; and
- To provide the best IT services of Electronic fund transfer in Internet Banking with the safe and security system.

V. Conclusion

To cope with the pressures of growing competition, emerging changes, challenges, opportunities, Indian commercial banks have adopted several initiatives and many facilities which include new banking services and technologies to benefit the customers which recently made a remarkable change towards the IT adoptions and financial behavior of the BOI customers in Bangalore Urban region. Information Technology is vital in banking today, it becomes imperative for banks to realize its impact on operational performance in order to justify capital investments. The objective of this work is to examine how the adoption of Information Technology affects the operations of BOI's customer's terms of effectiveness, efficiency, competitiveness, customer base and globalization of the bank. The design and simulation results of work revealed that Information Technology led to increase customer satisfaction, improved operational efficiency, reduced transaction time, better competitive edge, reduced the running cost and ushered in swift response in service delivery.

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