

Research Article

**Information Technology Based Services and Operational Controls In Banks**

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**Abstract**

This paper provides a view on the role of IT in the application; and level of control affected by identified these services. For identification of application of IT based services, data from 80 bankers was collected by the way of questionnaire. Although IT functions enhance productivity in banks, but research on assessment of the problems with regard to time taken to solve these problems was not identified. Technology allows banks to run on the concept of 24 X 7 working which has been made possible by the use of Tele banking, ATMs, Internet banking, Mobile banking and E - banking. Considering the importance of IT in banking it is highly important to access their usage and the level of control affected by them. Findings of the study were: Core banking services are inferred to be closely associated to control and are also considered critical to the bank. These services are also sensitive in nature and cannot be ignored while establishing control functions, but they pose little threat on the overall functioning. Thus, they should be timely checked for making betterments. Expected banking services reflects that facility for card payments have a strong relationship with control. Therefore, banks should make necessary plans to check the security issues regarding card. Some of the Augmented banking services are closely associated to control. For growing potential services are closely associated to control services and have some or little level of control. This justifies that they have influential effect on existing control system.

**Keywords:** Credit cards/Debit cards, Mobile banking, Internet banking and Fund transfers.

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**Introduction**

The financial sector of any economy, with banking sector at its core, plays an integral part in its development, growth and progress. Thomas (1995) opined that the banks are not simply vendors in cash yet truth be told sellers being developed. Business analysts have communicated an assortment of assessments on the viability of banking frameworks in advancing and encouraging monetary turn of events. On one hand, where Cameron (1977) has termed bank as a monetary foundation, which is required to be all the more straightforwardly and all the more decidedly identified with the presentation of the economy.

Similarly, banks in India have played a pivotal role in mobilization of savings and have helped in stimulating the economic development. Today, the bank has shifted from brick model to click model. The functions like micro financing, financial inclusion, venture capital, involvement management, online banking etc. has actually transformed the pace of the growth of the economy.

The main field of investigation is information control. Reilly & Finnegan (2003) viewed Internet banking as an operational rather than a competitive instrument. Santouridis, Trivellas & Reklitis (2009) found that the nature of data was a urgent measurement driving the client goals for web banking future use. Dorociak (2007) established a positive relationship between business to information systems strategic alignment and performance for small banks. Hayale & Khadra (2006) found that banks need the use of other Control System measurements including Physical access, Logical access, Data security, Documentation standard, Disaster Recovery, Internet, correspondence and E-Control and Output security controls. Particularly in India, studies like Kaur (2012) opined that IT improves branch productivity. Singh & Kaur (2012) suggested online portals should be more secure, informative and user friendly. Highlighting the impact of IT on risk Malhotra & Singh (2009) argued that internet banking had a significant and negative association with risk profile of the banks. Kumra & Mittal (2004) concluded that headways in data innovation had not just opened new vistas of business for investors; they had additionally empowered brokers to play out their current administrations all the more effectively. The review suggests that the Indian banks' site offer variety of features but they lack security features and are not informative. Nature of data was seen as pivotal measurement during the client aim for web banking utilization. So the present attempts to examine the IT control system in Indian banks by studying variables like Tele Banking, Mobile Banking, Credit Card/ Debit Card, E-commerce, NEFT and RTGS etc.

### **Methodology**

Broadly study aims at identification of application and level of control affected by identified information technology based banking services, data from 80 bankers (40 from public sector banks and 40 from private sector banks) working at operational level was collected. Both primary and secondary sources of data were used for this purpose, secondary data was collected from sources such as annual reports, statistical tables, etc. The Research instrument used in the collection of data to measure role of IT based services in Indian banks was questionnaire. In total 20 banks (10 private sector and 10 public sector banks) are selected on market capitalization as on 31 March 2020 (table 1). The sampling process began with the preparation of list of banks falling in two categories-Public sector banks (on the basis of Nifty PSU Bank Index) and Private sector Banks (on the basis of Nifty Private Bank Index).

Table 1

## Information Technology Based Services and Operational Controls In Banks

List of banks selected on market capitalization as of 31 March 2020

Sr. No	Public Sector Banks	Private Sector Banks
1	Canara Bank	Kotak Mahindra Bank
2	Indian Bank	Axis Bank
3	Punjab National Bank	HDFC bank
4	Bank of Baroda	ICICI Bank
5	Central Bank	IDFC first bank
6	Bank of India	RBL Bank
7	Union Bank	Bandhan Bank
8	UCO Bank	Federal Bank
9	State Bank of India	City Union Bank
10	Indian Overseas Bank	Indusind Bank

The loop of banks as per Nifty PSU Bank Index and Nifty Private Bank Index on the basis of market capitalization 31 march 2020. Operational level bankers (designated as managers, assistant mangers, deputy managers and officers) levels of bankers were contacted to collect the desired data by the means of questionnaire. Percentage analysis and Independent t-test were used to analyze the data. The delimitations of the study were that it extended its wings to 20 Indian banks and samples were collected from the bankers who have worked at head office level in their respective banks.

### The Dimensions of Information Technology Based Services in Banks

Considering all these three control work points of view bank gets a companywide oversight over its IT administration, measures behind it and territories that need improvement. It is normal that by surveying IT administration by this model and focusing on key zones for activity banks can accomplish manageable long haul development and benefit and minimization of dangers which implies that bank is acting both monetarily and socially mindful towards its customers, representatives and partners.

Thus, it can be inferred that the adoption of information technology in the banking sector has halted the linguistic barriers to qualify effortless and cost friendly reporting throughout transaction, to promote relationship with customers, escalate patron content, functional productivity, lower expenditure, shrink proceeding time, offer banks fierce margin, impart soundness to capitalist and fostering fintech. This muddy environment imparts fruitful basis for the analyst to inspect the contribution of IT in banking sector, specifically its impression on the operational efficiency of the banks. Information Technology based services were further classified as: 1) **Core banking services**, 2) **Expected banking services**, 3) **Augmented banking services**, and 4) **Growing Potential services**. **Core banking services** as defined are fundamental banking services that are offered by every Indian bank, while **Expected banking services** are prevalent as routine nature of services that are looked forward to be offered in banks. Addition to above, **Augmented banking services** enlarge the scope of the information technology services and **Growing Potential services** give an opportunity to the banks to increase their market share.

Table 3

## Dimensions of Information technology-based services in Banks

S. No.	Services
1	Core banking services
2	Expected banking services
3	Augmented banking services
4	Growing potential banking services

**Analysis Of Dimensions Of Information Technology Based Services In Banks**

For the purpose of analysis, hypothesis of the above mentioned services (on basis of primary data collected from Indian Bankers) are portrayed in trail. Null hypothesis for Level of Control Affected by Application of Technology Based Services cover: There is no significant difference in level of control affected by technology based core banking services( $H_{0(1)}$ ), in level of control affected by technology based expected services( $H_{0(2)}$ ), level of control affected by technology based augmented services( $H_{0(3)}$ ), in level of control affected by technology based growing potential services( $H_{0(4)}$ ) in public and private sector banks. Alternate Hypothesis for Level of Control Affected by Application of Technology Based Services cover: There is significant difference in level of control affected by technology based core banking services ( $H_{1(1)}$ ), level of control affected by technology based expected services( $H_{1(2)}$ ), level of control affected by technology based augmented services( $H_{1(3)}$ ), in level of control affected by technology based growing potential services( $H_{1(4)}$ ) in public and private sector banks. For Discussion of Results of Application and Level of Control Affected by Technology Based Services in Bank-Independent t test was conducted to analyze the difference of level of control affected by technology-based banking services by public and private sector banks.

**1. Core Banking Services in Banks**

Since the significance level of ATM'S/POS Terminals, Internet Banking, Mobile Banking, Issue of Credit Card/ Debit Card, Online Fund Transfer Enquiry, Cash withdrawal, Online Payment of bills, and RTGS, is less than 0.050 (refer to table 3). This lends supports to  $H_{1(1)}$  and establishes that there is a significant difference between level of control affected by application of core banking services by public and private sector banks. It shows that bankers in public sector banks considered impact of these services on control function differently than the managers of private sector banks, while for rest of the services they have same opinion.

Therefore, the bank's management never ignores the services (mentioned above) having strong and close association to control while identifying and strategizing the control functions of the bank.

Contradictory, respondents reported weak loop of association with control for services like: 1) Inter-bank mobile payment service (IMPS) and 2) Facility to report loss of plastic cards/ Cheque book. No doubt, these services are also sensitive in nature and cannot be ignored completely while establishing control functions, but they pose little threat on the overall functioning. Thus, they should be timely checked for making betterments.

## Information Technology Based Services and Operational Controls In Banks

In the course of discussions with the bankers and from the existing literature, it was also found that the services are very closely associated to the controlling aspect. Since banks are continuously expanding their networks through the extension counters (for ATMs, Tele banking services, Internet Banking, Mobile banking, Credit cards), it has become the obligation of banks to provide instant resolutions to the problems closely related to control. In a situation when Indian banks affronted the biggest-ever security breach (as reported by Thomas Reuters (dated 9<sup>th</sup> November, 2016)), in over 32 lakh debit cards, banks considering their obligation to secure customer transactions recalled these debit cards in September 2016, while many banks blocked debit cards, furthermore, requested that their clients change PINs (individual recognizable proof numbers) as a careful step. For protecting the security of transactions, Indian Banks are working on the proposal for introduction of biometric ATMs.

Another commendable move made by banking sector was purchase of banking software, which ensures flexibility and accuracy of banking activities and has also automated clearing systems for NEFT and RTGS transactions (for example: *BaNCS* used by State Bank of India & its Associate Banks, *Finacle* used by ICICI Bank, Axis Bank, and *Flexcube* used by Yes Bank, and many more). In addition, it has also been noticed that banks establish activity controls (expected outcome and exclusive detailing on everyday basis, 7 days basis and 30 days basis), and operational control (mostly spotlight on limited entry to unauthorized users, physical limitations, Customer care services and dual custody) for ATMs, Tele banking services, Internet Banking, Mobile banking, Credit cards, etc.

Table 3

### Independent t-test on Level of Control Affected by Banking Services

Core Banking Services	t-value	p-value	Expected Banking Services	t-value	p-value	Augmented Banking Services	t-value	p-value	Growing Potential Banking Services	t-value	p-value
<b>ATM'S/POS Terminals</b>	4.788	0.000*	Request for Net Banking password	1.679	0.097	Printing of Mini statements	4.956	0.000*	Facility to deposit through ATMs	1.363	0.177
<b>Tele Banking</b>	1.996	0.076	Stop payment instructions	3.010	0.004*	Facility of Insta alerts	0.363	0.717	Online loan payment	2.259	0.027*
<b>Internet Banking</b>	5.965	0.000*	Online enquiry about Product	3.402	0.001*	Facility to Pay Taxes using ATM	1.617	0.110	Transfer funds between accounts linked to the same ATM/ Debit card	1.113	0.269
<b>Mobile Banking</b>	3.088	0.000*	Enquiry about cheque status	4.082	0.000*	Facility for request to Issue cheque book	3.615	0.001*	M Commerce	2.327	0.023*
<b>Issue of Credit Card/ Debit Card</b>	2.663	0.000*	Enquiry about Fixed deposit	2.544	0.013*	Online Utility bill payments	2.343	0.022	Facility to cash at shop	0.897	0.372

Online Fund Transfer Enquiry	3.499	0.001*	Recording Biometric attendance	2.845	0.006*	Online ticket booking	1.715	0.090			
Balance enquiry	1.208	0.231				Service for Demat Enquiry	0.19	0.849			
Cash withdrawal	2.890	0.005*				Facility for Visa/Mastero card pay	5.105	0.000*			
Facility to report lost plastic cards/ Cheque book	0.330	0.742				Online customer grievance handling system	3.040	0.003*			
Shop Online	1.004	0.318									
Inter-bank mobile payment service(IMPS)	1.309	0.194									
E- commerce	1.246	0.217									
Online Payment of bills	2.445	0.017*									
Online Ticket booking	0.618	0.539									
NEFT	1.468	0.146									
RTGS	2.557	0.013*									

Note: \*denote p-values significant at 5% level.

## 2. Expected Banking Services in Banks

Results of independent t test are reflected in table3 showing the difference in level of control affected by expected banking services in public and private sector banks. It shows significance level of Stop payment, online enquiry about Product, Enquiry about cheque status, Enquiry about Fixed deposit, and Recording Biometric attendance, is less than 0.050. This lends supports to  $H_{1(2)}$ ,  $H_{1(2)}$ ,  $H_{1(2)}$ ,  $H_{1(2)}$ , and  $H_{1(2)}$  and establishes that there is a significant difference between level of control affected by application of expected services by public and private sector banks. This shows that both public and private sector banks consider the importance of these services in relation to control differently, so difference in opinion is recorded regarding relation of these services to control.

This may be due to the reason that bankers do not relate the above mentioned services to sensitive issues of control. Practically speaking, part of these administrations have been clear from writing, which shows that with the execution of Total Banking Automation, banks began to offer the offices of select Customer Terminal, Single window exchange, on-line and off-site ATMs, Tele-Banking and so forth Improved data innovation in the assistance area lead to biometric creation and the executives of access plans, rules controlling worker admittance to limited regions, designated spots, and time and participation framework. Indian banks actually

come up short on the establishment of biometric time and participation framework. Another achievement in the advancement of data innovation administrations in Indian banks was the presentation of ATM's, Tele-banking, and Internet Banking, which facilitated the route for tolerating and tending to client demands. Indian banks have setup customer care cells to facilitate the customers and reduce the excessive burden on the bankers.

For holding the current piece of the pie in the business and improving something very similar, banks need to develop more customer oriented services. These services can be categorized as Augmented Banking services.

### 3. Augmented Banking Services

Significance value for Augmented banking services viz-a-viz Printing of Mini statements, Facility for request to Issue cheque book, Facility for Visa/ Mastero card pay and online customer grievance handling system, is less than 0.050. This lends supports to  $H_{1(3)}$ ,  $H_{1(3)}$ ,  $H_{1(3)}$ , and  $H_{1(3)}$  and establishes that there is a significant difference between level of control affected by application of technology based augmented banking administrations by open and private area banks. The justification critical distinction might be because of the extra highlights or enhancements executed over the long haul in the administrations given by the either area of banks. Augmented Banking services are profit yielders to the banks and banks should closely monitor these services as they have contribution towards effective controls. Banks should focus on providing these services to customers to make them feel convenient. Banks must specifically train 1-2 persons for small customer base branches and 3-5 persons for large customer base branches, in order to deal with such services. This will enhance the responsibility and accountability of the banker and strengthen the loose loops of control. To compete with other players in banking industry, banks should try to cash the potentials in the industry.

### 4. Growing Potential Banking Services

Significance value for Growing potential services viz-a-viz Online loan payment and M Commerce is less than 0.050. This lends supports to  $H_{1(3)}$ , and  $H_{1(3)}$  and establishes that there is a significant difference between level of control affected by the application of these services by open and private area banks. The critical contrast might be because of the explanation that these administrations are touchy to data innovation control.

Some of the selected Indian banks are not providing the Growing Potential banking Services, and other banks which are providing these services have a competitive edge. Bank's management should try to explore the areas where they can en-cash the opportunities to retain and grow customer base. These services need a regular monitoring as they lead to growth of banks productivity.

For strengthening the existing information control systems, the problems faced in banking activities and the time taken to resolve these problems were analyzed. The objective of this forgoing analysis is to bring a revolution for framework re-designing to empower characterized and carry out productive cycles to have the option to receive rewards of innovation to its fullest potential.

## Conclusion

In the improvement of Indian economy, banking area assumes a vital and significant part. Singhal, Choudhary & Biswal (2019) stated that examination on connection of swapping scale

with oil, gold costs and financial exchange development will advance extensive understandings to the focal bank for dealing with the cash rates that supplements the twin goal of boosting monetary development and keeping expansion limited under the ideal reach. With the progressions and expanded utilization of data innovation, there has been an increment in entrance, profitability and productivity of Indian. The center is moving from mass banking to class saving money with the presentation of significant worth added and altered items. Innovation permits banks to run on the idea of 24 X 7 working which has been made conceivable by the utilization of Tele banking, ATMs, Internet banking, Mobile banking and E - banking.

Keeping taking into account the significance of Information Technology in Indian banks, the Information Technology based administrations were arranged as: 1) Core banking services, 2) Expected banking services, 3) Augmented banking services, and 4) Growing Potential services.

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