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## Technological Changes And Digitalization In Public Sector Banks

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**Abstract:** Resulting the developments within the information technology, the banking system has undergone an enormous change. Technology adoption has given new dimensions to the banking system. it's allowed banks to supply way more to the shoppers, like facilities of card and telephone access, anytime and anywhere banking through 24 hours of ATMs, credit cards, debit cards, POS (Point of Sale) access. In fact, the technology has given the shoppers to own fingertips access to their accounts worldwide. The digitalization of knowledge has facilitated the banking transactions very easy and convenient both to the bank and customer. Information technology will be accustomed develop products, services and other capabilities which will enable a bank to tug off strategic advantages. This research is aims to review the impact of technology adoption publically sector banks in India. Secondary data are collected from various sources like articles and websites by the researcher for the study. The study reveals that adopting technology publically sector banks comes up with both benefits and challenges. Cost effective, non- stop banking, new products and services, data warehousing, a sustainable banking are a number of the advantages experienced by Public sector banks from the adoption of technology. Cyber-crimes, customer response, choice of technology, data integration, shifting to alternatives and fraud are a number of the challenges in adopting the technology by Public Sector banks.

## INTRODUCTION

Information technology refers to the acquisition, processing, storage and dissemination of all kinds of knowledge using engineering and telecommunication systems. Information technology architecture is an integrated framework for acquiring and evolving IT to attain strategic goals. These technologies are used for the storage, input, communication and processing of data. Information technology includes ancillary equipment, firmware, software and similar services, procedures etc. Modern high throughput technologies provides vast amounts of sequences, functional data and expression for protein and genes. Recent developments of banking sector in India are Internet, Society for worldwide inter-bank financial telecommunications (SWIFT), cash dispenser Machine (ATM), Cash dispensers, Electronic clearing service, Bank Net, Chip card, Phone banking, Tele-banking, Internet banking, Mobile banking, Anywhere banking, Voice mail, E-banking Etc., the essential need of knowledge Technology (IT) in Banking Sector are Meeting Internal Requirements, Effective in Data Handling, Extending Customer Services, Creative Support for brand spanking new development, End-user Development of the Non-technical Staff. Emerging trends of knowledge technology in banking sector are Outsourcing, Integration, Distinctive Edge, IT as Profit Centre, Prospering in Down Market. Public sector banks are those banks where majority of stake (more than 50%) is held by a government. India nowadays 12 public sector banks after merger, including the merger and 1 payment bank, India Post Payment Bank.

## REVIEW OF LITERATURE

Many researchers have worked efficiently on role of data technology in financial institutions. Ahmadirezaei (2011) concluded that investment in technology leads to better facilitation of the customer and time saving of both customer furthermore as employees. Khajeh [2011) explained that banking system influenced by technology in three alternative ways which are level of competition, economy of scale and creation of various delivery channels. Technologies can only cause increased productivity or improve performance when combined with other resources effectively by human resources or when done effectively, and use technology productively and ethically (Dauda&Akingbade, 2011) advancement makes employees more practical and efficient (Lawless and Anderson, 1996). Technological advancement can improve firm performance yet (Li and Deng, 1999). The majority of the banks in Zimbabwe have adopted internet banking, usage levels have remained relatively low, as not many shoppers are using this innovation in Zimbabwe. Regarding all the challenges that are faced by banks within the adoption of IB, compatibility with existing legacy systems, cost of implementation and security concerns ranked high (Thulani, D., Tofara, C et al., 1970). The role of knowledge systems and infrastructural new trends in banking sector was studied. The committee stressed the difficulty of development in banking infra services which helps to mobilize the services and resources through various ways (Rangarajan, 1991). because the Indian banks position themselves as financial service providers, banking business is getting redefined. Technology is

unsettling the sooner business processes and customer behaviour is undergoing change. These have enhanced the forces of competition. Four trends are fundamentally altering the banking industry: consolidation, globalization of operations, development of recent technologies, and universalization of banking (K.V.Kamath, S.S.Kohli, et.al., 2003). the link between technology and banking is found challenges sooner than the industry. All use ATM's and other electronic mode to try and do banking transactions. Banks and Money related Foundations remain the unabated focuses of digital culprits within the most up-to-date decade. Prominently monetary profit is thus far the 000 inspiration driving most cybercriminal exercises and there's minimal shot of this changing soon. This paper centres round the specialized parts of various styles of cybercrimes concerning the ster smart advances of SBI range drastically from every enhance and there is also a growing trend except 2011-12 within the Total Advances of SBI. there's a fluctuating trend of rate in each total advance as a whole moreover as in each area. Advances (A.Thangam, S.Ganapathy, et.al., 2019). (Ganapathy and Rajamohan 2020) the researcher has adopted the ranking method and percentage analysis . As per the findings, a number of the results of technology related stress faced by respondents are: psychological and physiological, affects work and family environment, increase in absenteeism, changes in worker's attitude and reduce job performance. it's suggested that the bank employees should be made educated about technologies.

## **OBJECTIVE OF THE STUDY**

- To study the digital distruction in indian bank industry.
- To evaluate the benefits achieved by public sector banks for adoption of technology in India.
- To analyse the problems faced by public sector banks for adoption of technology in India.
- To offer suggestions to improve banking while adopting technology.

## **OPPORTUNITY AND CHALLENGES FACED BY PUBLIC SECTOR BANKS**

Dr. Rengarajan committee was entrusted to review the probabilities and stages concerned in mechanisation of banks and to arrange tips for constant within the year 1983. The report submitted by the committee within the year 1984 was called the primary Rangarajan committee Report. The objectives of the mechanisation of banks area unit to boost client service, higher cognitive process on productivity and profit.

the assorted stages of mechanisation were complete system, Multi user pc networking, Branch –level mechanisation and total branch automation. Next stage of mechanisation at Regional/ Circle / Zonal workplace acts in between branches and head workplace . The mechanisation at head workplace level activities area unit divided into completely different purposeful space like operations, planning, human resource development, international business and services etc.

Introduction of native space Network (LAN) and Wide space Network ( WAN) modified the banking

atmosphere hugely . The thought of LAN is extremely necessary for branch.

computerization whereas WAN typically accustomed interconnect branches with regional offices, and regional workplace to go workplace.

Another development in banking was introduction of core banking industry, contains a centralised branch mechanisation model wherever branches area unit connected to central host. It incorporates branch automation modules and on-line multiple delivery channels like ATM, ABB, Debit Card, Tele- banking, mobile banking, web banking etc.

**Online Banking:** on-line banking means that managing banking activities mistreatment either money institution's web banking web site or their mobile banking app for sensible phones. With on-line banking the client will read their account balances, create payments, transfer cash, and update your personal details together with your financial organization.

**Electronic Banking:** Electronic banking, additionally called electronic fund transfer (EFT), uses pc and electronic technology in situ of checks and alternative paper transactions. EFTs area unit initiated through devices like cards or codes that permit you, or those you authorize, access your account. several money establishments use ATM or debit cards and private Identification Numbers (PINs) for this purpose.

**ATM :** ATMs area unit electronic terminals that permit you bank nearly nearly any time. To withdraw money, create deposits, or transfer funds between accounts, you typically insert associate degree ATM card and enter your PIN. Some money establishments and ATM homeowners charge a fee, significantly if you do not have accounts with them or if your transactions exceed the prescribed limit set by the banks.

**Mobile Banking:** transportable will assist the person to conduct banking transactions any time and from anyplace. Use of transportable handsets as a payment device is well developed in India. Technology used for mobile banking should be secure and may guarantee confidentiality, integrity and legitimacy.

**Internet Banking:** Banks area unit mistreatment electronic and telecommunication networks for delivering a large vary of added product and services to their customers. The delivery channels embrace dial-up connections, non-public networks, public networks etc., and also the devices embrace phonephone, personal computers etc.

The following table shows transformation from traditional banking to modern banking:

S.No	Traditional Service	Alternatives	Medium	Services Available
1.	Brick-Mortor services	Automated Branches	PC and LAN	Instant deposit and withdraw money, getting statement ,DD, Calculation of Interest etc.,
2.	Branch Banking	Core Banking	PC and Internet	Instant deposit and withdraw money, getting statement, DD, cheque clearance and depositing, Stop payment etc.,
3.	Manual Count Note	Note Counting Machine	Electronic device	Instant note and bundle of notes counting
4.	Formal Cheque	MICR Cheque	MICR technology	Instant cheque clearance
5.	DD/MT/TT	EFT	Internet core solution(CBS)	Instant fund transfer
6.	On counter Cash withdraw	Debit card	ATM	Withdraw money, balance enquiry, account statement, mobile recharge, make donation, card to card transfer, utility bill payments.

7.	On counter Cash with draw	Debit card	Point of Sale(POS)	Mobile recharge, make donation, card to card transfer, utility bill payments.
8.	Letter of Credit	E-Money	Credit Card	Purchasing and payment of utility bill payments
9.	Branch Banking	Internet Banking	PC and Internet	Balance enquiry account statements, stop payment order, EFT, RTGS, purchasing and payment of utility bill payments
10.	Branch Banking	Mobile banking	Mobile phone, SMS, 3G, 4G	Balance enquiry account statements, stop payment order, EFT, RTGS, purchasing and payment of utility bill payments

T.R.Srilatha and A.Sudhakar(2018).

## DATA INTEGRATION

In India largest portion of population is connected to the banking sector. Data of clients are scattered, therefore collection of this data in an exceedingly systematic manner is incredibly indispensable. New Technologies should help Public sector banks to deliver strong and reliable services to their customers at lower cost. Besides this technology should also to get and manage information successfully. Information contains data collected supported principles of integrity, reliability and accuracy. Public Sector Banks are collecting enormous quantities and warehousing volumes of knowledge referring to customers and transaction. the knowledge is subjected to meaningful analysis, usage and creation of an information base with an objective to the diversified internal and external management system requirements.

## THE PROBLEM OF FRAUD

The issue associated with the safety has become one in all the most important concerns for Public Sector Bank. due to increasing users and new services in banking – productivity, efficiency and quality are essential to survive during this competition. an outsized group of shoppers refuse to settle on e-banking facilities thanks to fear of fraud, uncertainty and security concerns. Creating and maintaining trust is that the major hurdle to online banking for many of the purchasers. they need a perception that online or internet banking is risky thanks to which frauds and misbehaves can happen. So, it's an enormous challenge for bankers to form clients satisfied regarding their security issues. consistent with RBI report, fraud cases publicly sector bank were total of 3766 which is that the highest among other sectors of bank. As per the report the quantity of fraud cases was increased by 15 percent on year on year basis. the subsequent is that the statement showing number and amount of fraud cases publically sector Banks for the past 10 years.

**Number and amount of fraud cases in Public Sector Banks for the past 10 years :-**

<b>Year</b>	<b>of Cases offraud</b>	<b>Amount in ₹ crores</b>
2009-10	4003	13672.46
2010-11	3530	14748.5
2011-12	3910	20210.86
2012-13	4504	24819.4
2013-14	4359	21542.03
2014-15	4269	23694.65
2015-16	4207	16779.42
2016-17	3927	25883.98
2017-18	4228	9866.23
2018-19	2836	6734.65

Data belong to the period from 31<sup>st</sup> March 2010 to 31<sup>st</sup> March 2019.

**CHOICE OF TECHNOLOGY**

Without any doubt, advent of technology in banking sector saves a lot of time. Every bank in India, especially public sector banks are updating themselves by adopting various technologies. But problem arises when adopts the wrong choice of technology due to insufficient control processes and inappropriate system design. This wrong selection of technology may lead to a loss in terms of financial losses well as loss of brand image as well as goodwill (Laroiya, R. 2002). Due to this reason, many banks rely on third party service provider for banking technology, which may incur high costs.

**CYBERCRIME**

Cybercrime could be a major challenge for banks which adopts technologies. Nowadays various incidents per theft of private information and abuse of ATM's is occurring everywhere. the subsequent are various forms of cybercrime.

## **HACKING**

Hacking could be a system to extend unlawful and unauthorised access to a PC or system so on take, degenerate, or erroneously see information.

## **PHISHING**

Phishing could be a procedure to get private data like usernames, passwords, and charge/Master card subtleties, by imitating as a reliable material in an electronic correspondence and replay similar subtleties for harmful reasons.

## **VISHING**

Vishing is that the criminal routine with regards to utilizing social designing through phone framework to access private individual and budgetary data from the final population with the top goal of monetary reward

## **E-MAIL**

**SATIRIZING E-mail** Satirizing may be a procedure of concealing an email's real place {to begin} by shaped the e-mail header to look to begin from one real source instead of the important beginning source.

**SPAMMING** In Spamming, undesirable and spontaneous messages typically sent in group, trying to constrain the message on individuals who may not generally dig are alluded to as Spam Messages.

## **DENIAL OF ADMINISTRATION**

This attack is described by an express attempt by aggressors to anticipate real clients of an administration from utilizing that benefit by "flooding" a system to ban real system traffic, upset associations between two machines to deny access to an administration or keep a particular individual from about to an administration.



## ADVANCED CONSTANT DANGER (ACD)

ACD is portrayed as plenty of intricate, covered up and progressing PC hacking forms, frequently that specialize in an exact element to interrupt into a system by keeping faraway from location together delicate data over a critical timeframe. The assailant generally utilizes some reasonably social designing, to access the focused-on system through authentic methods.

## ATM SKIMMING

ATM Skimming could be a suggests that of commerce off the ATM machine or POS frameworks by introducing a skimming appliance on the machine data input device to point out up as AN actual keypad or appliance that was created to be mounted to the cardboard pursuer to be kind of like a bit of the machine. additionally thereto, malware that takes Visa info specifically will likewise be introduced on these gadgets. Effective execution of skimmers causes in ATM machine to assemble card varieties and individual distinctive proof number (Stick) codes that square measure later recurrent to finish pretend exchanges. To avoid these cybercrimes, many security measures to be adopted for his or her documents like, facts machine and client deliverable instruments. it's conjointly obligatory that shopper personal records and completely different info accessible with banks is secured adequately to make sure tha fraudsters don't longer get admission to that. All safety measures should be at a lower place continuous review for additionally strengthening. there's a requirement for comprehensive system Security policy has got to be place in neighbourhood via the bank for safeguarding the sensitive info of shoppers.

## RESEARCH METHODOLOGY

The research is solely supported secondary data. For this study the information has been collected from the banking company of India circulars and bulletin, business dailies like The Economic Times, Financial Express, Business Standard and various other journals, magazines and websites which constitute the secondary sources of information.

## CUSTOMER'SRESPONSE

Consumer response on adopting technology by public sector bank is another punctuation mark as majority of Indian population deals with Public Sector Bank. Any change within the regular practise in banking operations might affect the stakeholders. So, customers' responses to the adoption of technology are a significant challenge. Bank customers should understand the merits and demerits of varied products. Banks must educate the consumers regarding the utilization of technological products, which successively are going to be a positive impact on bank performance. the complete institution of banking is made on consumer trust. It helps not only in retaining the present customers but also attracts new customers. This activity will automatically improve the standard in banking services and development of banks.

## CONCLUSION

Information technology may be a means for increasing productivity and efficiency in operational levels. Banking, which is primarily a industry becoming more and more technology dependent. the foremost visible impact of technology is reflected within the way the banks respond strategically for creating its effective use for service delivery. With the introduction of technologies, the transactions of banking and delivery of banking merchandise will grow to be an additional customer friendly. To cope up with the fast modifications within the technology, legislation and market space, banks should constantly innovate and take a look at to stay beforehand of the curve. The study reveals that adopting technology publically sector banks comes up with both benefits and challenges. Cost effective, nonstop banking, new products and services, data warehousing, a sustainable banking are a number of the advantages experienced by Public sector banks from the adoption of technology. Cyber-crime, customer response, choice of technology, data integration, shifting to alternatives and fraud are a number of the challenges in adopting the technology by Public Sector banks. Since today's world is digitalized, strength of protection is very important.

