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Role of It in Banking

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Abstract:
Up until 1990, Indian banks operated in a relatively safe and secure environment; however, economic policies have forced them into fierce competition. As technology advances, the banking industry in India is also attempting to awaken from slumber and become more proactive.
Banks have long used technology to enhance their offerings and operational effectiveness. These days, technology is altering not just the surroundings but also the interactions with clients. In addition to removing numerous barriers, technology has produced better goods and distribution methods. This has increased attention on customer relationships. It is also seen as a tool for cutting expenses and facilitating efficient communication between entities and individuals involved in the banking industry.

EXECUTIVE SUMMARY

This industry has been expanding steadily and meeting the demands of different societal groups ever since India's banks were nationalized. Usinginformation technology as a platform, the banking sector has been makingquick progress lately as it aims to reach new heights. This article looks atsome of the new and creative instruments that banks have been introducing lately.
Numerous foreign banks have drawn to India as a result of liberalization and information technology, opening up new markets, new products, andeffective delivery routes for the banking sector.
In the evolution of the Indian economy, the banking industry is a key player. Technology utilization has led to increases in efficiency, productivity, and penetration. It has improved cost effectiveness and contributed to the viability of small value transactions. It also expands options, opens up new markets, and boosts efficiency and production.
It has been observed that India's financial markets have shifted to being buyer's markets. In India, commercial banks are increasingly becoming into one-stop supermarkets.
With the advent of value-added and tailored products, the emphasis is moving from mass banking to class banking. Thanks to technology, banks may replicate a branch in the lobby of a building without hiring employeesto do manual tasks. The branches operate on a 24-hour basis, which is made feasible by the use of ATMs, Internet, mobile, and e-banking banking in addition to telebanking.

INTRODUCTION

Up until 1990, Indian banks operated in a relatively safe and secure environment; however, economic policies have forced them into fiercecompetition. As technology advances, the banking industry in India is also attempting to awaken from slumber and become more proactive.
Banks have long used technology to enhance their offerings and operational effectiveness. These days, technology is altering not just the surroundings but also the interactions with clients. In addition to removing numerous barriers, technology has produced better goods and distribution methods. This has

increased attention on customer relationships. It is alsoseen as a tool for cutting expenses and facilitating efficient communication between entities and individuals involved in the bankingindustry.

The improvement of the financial system's IT infrastructure has been given top priority by the RBI. For the banking industry, technology has created new markets, products, and efficient delivery methods. Additionally, IT offers the banking sector the structure it needs to overcome obstacles in the current competitive landscape. With IT, costs can be reduced for international money transfer.

Information processing, storing, and transport are all referred to as IT. It makes use of a telecommunication network, computers, and electronic devices like fax machines, mobile phones, and landlines. IT has transcended all geographic limitations. Information technology makes it possible to build complex products, improve market infrastructure, apply trustworthy risk management strategies, and assist financial intermediaries in reaching a variety of diverse and far-flung markets.

The internet has had a big impact on banks' delivery methods. The internethas become a crucial channel for financial delivery.

Goods and services. With a few keystrokes, users may monitor their accounts, obtain account statements, transfer money, and buy drafts.

Smart cards, or cards containing microprocessor chips, have given the situation a new angle. An explanation of "Cyber Cash": All financial transactions occur exclusively via "Cyber-books." It is now simpler to collect phone and electricity bills. The internet's upgradeability and flexibility have given banks previously unheard-of chances to connect with their clientele. Undoubtedly, there have been significant changes to financial services, and as a result, clients now have higher expectations ofbanks.

Over time, IT is gradually transitioning from a back office role to a key aide in raising a bank's worth. IT achieves this by making the most of proactive measures taken by banks, such as fortifying and standardizing the infrastructure of the banks with regard to security, communication, and networking; establishing inter-branch connectivity; transitioning to an environment of Real Time Gross Settlement (RTGS); and forecasting liquidity through the creation of real-time databases.

Among these are the use of imaging and magnetic ink character recognition technologies for clearing checks. The increasing sophistication of technology and the expanding popularity of the Internet have been the main drivers behind Indian banks' aggressive push into retail banking.

Customers' expectations are evolving as they transition from traditional banking to online banking. India's banking sector is currently seeing a revolution in information technology. The necessity of complete banking automation in this sector is growing due to a mix of competitive and regulatory factors.

In banking, information technology has essentially been applied in two ways. The first is connectedness and communication, and the second is reengineering corporate processes. Information technology makes it possible to build complex products, improve market infrastructure, applytrustworthy risk management strategies, and assist financial intermediaries in reaching a variety of diverse and far-flung markets.

The three main tasks that banks perform—transforming assets, managing risks, and granting access to liquidity—have undergone changes as a result of information technology. Furthermore, the effectiveness of the money, capital, and foreign currency markets is significantly impacted by information technology and communication networking systems.

HISTORY

When banks began computerizing their branches in limited ways in the mid-1980s, it is when the

Software Packages for Banking Applications in India first emerged. With the introduction of low-cost, high-powered PCsand services in the early 1990s, along with a sharp decline in hardware prices, banks began to purchase what were known as Total Branch Automation (TBA) packages. In addition to the swift transformation in communication technologies and the emergence of the innovative idea of convergence of communication technologies, such as internet, mobile/cellphones, etc., the middle and late 1990s saw a whirlwind of financial reforms, deregulation of globalization, etc.

Technology has always been crucial to the operation of banking organizations and the services they offer. Money transfers, draft issuance, investment opportunity investigation, draft lending, and investment provision exploration are all examples of managing public funds.

improve market infrastructure, apply trustworthy risk management strategies, and assist financial intermediaries in reaching a variety of diverse and Information technology makes it possible to build complex products, far-flung markets. The internet has had a big impact on banks' delivery methods. The internet has become a vital channel for the provision of banking services and goods.

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Over time, IT is gradually transitioning from a back office role to a key aide in raising a bank's worth. IT achieves this by making the most of proactive measures taken by banks, including establishing interbranch connectivity, bolstering and standardizing the bank's infrastructure in terms of security, communication, and networking, advancing toward the Real Time Gross Settlement (RTGS) environment, forecasting liquidity through the creation of real-time databases, and using imaging and magnetic ink character recognition technology for check clearing, to mention a few. Indian banks are making a major push into retail banking.

The Internet's expanding popularity and technological advancements havebeen the main forces behind the charge. Customers' expectations are evolving as they transition from traditional banking to online banking.

Methods of Research

"A careful investigation or inquiry, especially through search for new facts in any branch of knowledge," is how research is defined. Since research is a scholarly endeavor, it should be conducted in a technical manner.Research is viewed by some as a movement that moves from the known to the unknown. Actually, it's a journey of discovery.

Study objectives:

The following are the goals of the research:

1. To ascertain the state of computerization in each of India's public sectorbanks.
2. To examine banking developments following India's public sectorbanks' computerization.
3. To evaluate the development of ATMs in India's public sector banks.
4. To determine the obstacles to the adoption of IT solutions in India'spublic sector banks.

Sources of Data Collection

The secondary data gathered from many publications, periodicals, websites, and published data from several RBI issues and public sector banks served as the foundation for the current investigation. This study has also cited a number of other studies on the topic. In order to get the information needed for this study, direct communication has also been made with the heads and other functionaries.

Type of Research design

There exists two types of research. These types can broadly be classifiedas
Follows:

1. Exploratory.
2. Conclusive.

The goal of exploratory research is to formulate hypotheses and find new relationships. Conclusive research, on the other hand, is intended to assistin selecting from a range of viable options when making judgments.

Each of these type of research can be subdivided as follows:

EXPLORATORYRESEARCH	CONCLUSIVE RESEARCH
● Search of secondary data ● Survey of knowledgeablepersons ● Analysis of selected cases	● Descriptive research ● Case studies ● Statistical studies ● Experimentation

When there is little to know about a certain subject, exploratory researchis used. Their goal is to create correlations between two or more variablesthat will enable the formulation of particular hypotheses.

To choose the optimal option, they can be put to the test through thoroughinvestigation; this tends to be a cyclical process over time.

1. Consumers were directly questioned for this study, and research was performed because different consumers may have differing opinions about the same product.
2. Therefore, encouraging the respondent to share additional information about the overall scenario rather than just focusing on one or a few chosen components was simple.
3. It provided an account of the actual event or circumstance, andaccurate data was collected—possibly as a result of a lengthier,closer relationship between the researcher and the respondent.

Significance of the study

It is a fundamental truth that information technology is used in the bankingand finance industries in all its forms. The industry has made it possible for the banking sector to grow beyond its historical function and is currently taking on a more significant role in its primary operational domains, which include securitization, risk preference, and liquidity, among others, all of which greatly benefit from IT. It has reached such high proportions that banks are no longer able to handle their IT implementations independently.

As a result of the IT revolution, banks are connecting their computer systems more and more—not just among their branches within a city, but also to other regions—by establishing local areas and networks and connecting them to high-speed network infrastructure**.**

In comparison to their predecessors, today's clients are more tech-savvy and have higher expectations,

making them more demanding. They wantbanking services that are accessible anytime, anyplace.
Even though the Reserve Bank of India has developed numerous laws regarding the integration of I.T. into the general operations of commercial banks in the country, it is imperative that these concerns be addressed in order for Indian banks to remain competitive on a global scale. Therefore,it is imperative that we pay closer attention to this issue. This is where thecurrent study comes in very handy.

E-Banking:

An electronic bank, or e-bank, is a financial institution that offers online financial services to individual customers. The 1920s saw the advent of e-banking in the UK and the USA. It gains significant popularity in 1960 thanks to credit cards and electronic fund transfers. In the beginning of 1980, the idea of web-based baking emerged in both Europe and the USA.
E-banking is a relatively new concept in India. Historically, branch banking has served as the primary growth strategy. Non-branch banking services have only recently begun to take shape. That was in the early 1990s.
Over the past ten years, the rapid advancement of technology has had a remarkable impact on our economy as a whole, with a particularly notableeffect on the breadth and utility of financial products.
Even in recent years, information technology has enabled the global development, assessment, and exchange of complex financial products.
Naturally, among the many products that technology has inspired, derivatives are the most obvious. However, a significant improvement in our calculation power has allowed us to offer a range of other products and—most importantly—new approaches to risk unbundling.
The fact that there are no indications that the financial technology industry's acceleration process is coming to an end is truly quite remarkable.
We are advancing at an extraordinarily fast rate, driven by the improved mathematical applications generated by our continuously increasing computing power as well as our growing telecommunications capabilitiesand the corresponding significant expansion of our markets.
The unbundling and highly calibrated reallocation of risks is a contribution of all the new financial products developed in recent years toeconomic value.
The increasing proportion of finance in the business output of nations like India is an indicator of the economic value added by these new tools and methods' capacity to accelerate the process of wealth creation. Naturally,the rationale is that information is essential to assessing risk.
Future outcomes can be less accurately predicted and, therefore, more likely to be discounted the less is known about a market's or venture's current state.
In contrast to public sector banks, foreign and newly established private sector banks are hindered by a weak branch network. Without these networks, a number of cutting-edge services have emerged on the market as a result of these players using direct distribution methods as opposed to branch delivery. Home banking is a major "pull" factor used by all of these banks to lure clients away from well-established public sector banks.
Numerous banks have upgraded their offerings by incorporating computer and electronic equipment. The customer now benefits from the ease and flexibility that banking operations can offer thanks to the revolution in electronics. Customers can now say goodbye to massive paper bank accounts and account registers thanks to e-banking. The e-banks, also known as easy banks, provide their clients with the following services:

- Credit Cards/Debit Cards
- ATM
- E-Cheques
- EFT (Electronic Funds Transfer)
- DE MAT Accounts
- Mobile Banking
- Telephone Banking
- Internet Banking
- EDI (Electronic Data Interchange)

Functions of e-bank

The personal e-banking system now offers the following services:

1. **Account information inquiry:**

The client requests information about his own account, including the amount of the card or account, a complete history of transactions, and the report list.

2. **Transferring funds between card accounts:**

The client can transfer funds to another person's credit card in the same city as well as between his own cards.

3. **Transfer of funds between bank and securities accounts:**

The customer can transfer money between his credit card or bank savings account and his capital account in the securities organization. Additionally, the client has real-time access to the current balance inquiry.

4. **The foreign exchange transaction:**

Using the online exchange rate provided by our bank, the client can trade foreign exchange, cancel orders, and request information about the foreign exchange transaction.

5. **B2C disbursement via the internet:**

When a client shops on the designated website, they can conduct a real-time transfer and receive payment feedback from our bank**.**

6. **Client service:**

The customer has the ability to change their online e-bank login credentials, credit card details, and personal information.

7. **Account management:**

The customer has the ability to change the status and rights of their registered account in their personal e-bank. This includes changing their login password, canceling or suspending certain cards, and more.

8. **Reporting the loss of the account:**

If a client's credit card or passbook is lost, stolen, or both, they can report the loss locally, not nationally.

Types of e-banking:

1. Using an ATM to make payments for connected accounts, make withdrawals, and transfer funds across accounts;
2. utilizing debit or smart cards to make purchases and make payments instead of carrying cash or a checkbook;
3. Direct banking over the phone: checking an account's balance, transferring funds between accounts, and making payments across linked accounts;

4. Direct banking through computer use: checking balances, transferringmoney between accounts, and making payments to linked accounts

Advantages of e-banking

The following are the important benefits of e-banking:

1. Account Information:

A daily transaction summary and real-time balance information.

2. Fund Transfers:

Use our online fund transfer system to efficiently manage yoursupply-chain network. We have real-time control over money transfers between bank locations.

3. Request:

Send an online banking request.

4. Account Information:

At our terminal, we have access to the bank's whole database onour business. It gives us the following information:

1. Our account's current balance in real time.
2. The account's daily transactions.
3. Information about the amount used, drawing power, cash creditlimit, etc.

5. Account statements can be downloaded as text or excel files:

Your ERP system can be coupled with the statements to enable auto-reconciliation.

6. Fund Transfers:

Use our online fund transfer system to efficiently manage our supply-chain network. We have real-time control over money transfers between bank locations. The product makes it possible to:

A. Transfer money one-to-one between two linked accounts.
B. Bulk fund transfers: We upload a flat file with payment and collection details when doing bulk fund transfers. Our systems handle processing the full file, and after it is finished, we can interface it with our ERP to enable automatic reconciliation.

The net-based fund transfer module also has the ability to map real- world scenarios including tiered signatures and user-wise limitations. Both the user-wise cap on fund transfers and the quantity of permissionsrequired for each fund transfer can be specified. If not approved by the requisite number of signatories, the fund transfer will not occur.

By linking our dealers' accounts to our account through a Power of Attorney, we can conduct an online fund transfer and avoid the time andexpense of using check collection services. As an alternative, the dealer may use this channel to credit our account.

In a similar vein, we might likewise influence online vendor and otherpayments.

7. Clients may also make the following online requests:

Sign up to get email account statements on a daily, weekly, fortnightly,or monthly basis.

1. Cease payment of checks
2. Restock check books
3. Demand drafts and pay orders
4. Establishing a fixed deposit account
5. Establishing a letter of credit

The organization doesn't need to pay more to use these services. Internet access is all that is needed.

With all of the MIS at the touch of abutton, the software helps the business manage its cash flows more proactively and streamlines the reconciliation process.

8. Customer can integrate the System with his Own ERP:

The account statements are available for download by the customer in both text and excel file formats. He can get assistance from the bank in integrating his ERP system with the account statements and bulk payment files. The type of work done may determine a minimal cost thatthe Bank charges.

9. Using electronic banking to pay bills:

Thus, the idea of banking from anywhere at any time was made possible by the internet. The bank's electronic Bill Pay service can relieve the burdensome duty of the individual having to visit many locations to payhis service bills, such as those for electricity, water, and telephone.

10. The Electronic Shopping Mall:

The client can also pay for his purchases via the Bank's safe website, allowing him to shop online without worrying about security. The Bank can offer real-time online shopping mail services through partner shopping sites.

11. Making Personal Investments with Electronic Banking:

A customer may also make investments in stocks, mutual funds, and other financial goods through the bank's website.

12. Trading in shares:

Cash Trading:

This type of trading is delivery-based and typically done with the goal ofaccepting the delivery of shares or money.

Margin Trading:

The customer has the option to trade intra-settlement up to four times his available money. During this trading session, he can take long or short positions in equities with the goal of closing the position within the samesettlement cycle.

Spot Trading:

"Cash on Spot" can be the greatest solution for him when considering an instant liquidity source. When shares are sold using the "cash on spot" option, funds are credited to his bank account that same evening rather than on the exchange payout date. After that, you can take this money out of any ATM operated by the bank.

The customer can trade directly through his bank at the nation'srecognized stock exchanges.

13. Investing in mutual funds:

Customers who use electronic banking also benefit from hassle-free, paperless investing in mutual funds. Without having to worry about completing out application forms or other paperwork, he can invest in mutual funds. He doesn't need to give any signatures or identification to make investments. There are no manual processes once he submits a request to invest in a specific fund. His unit holdings are automatically credited or debited in tandem with the automatic debiting or crediting of his bank account.

14. Trade in Derivatives:

The following are included in the trade in derivatives:

Futures:

The customer can trade index and stock futures on the authorized stock exchange by using electronic banking. He engages in buy/sell positions in index or stock(s) contracts with lengthier contract terms, up

to three months, while trading futures.

Options:

A contract known as an option grants the buyer the right to purchase orsell shares at a given price on or before a designated date. In exchange,the buyer must provide the seller a sum of money known as the premium. If the buyer is not satisfied with the price, he is under no obligation to finish the deal.

He must put down a specific proportion of the order amount as margin inorder to take a buy or sell position on index or stock options. He is able to take far larger buy/sell positions using options trading than he could have in the cash segment, giving him more leverage over his trading limit.

15. Online Initial Public offerings:

Customers do not need to bother with filling out any paperwork or application forms in order to invest in initial public offerings online. Getin-depth information on upcoming new initial public offerings (IPOs) before they are released to the public. A few of the elements that assist aclient in staying up to date with the initial public offers markets are the calendar of initial public offers, recent listings of initial public offers, prospectus/offer materials, and initial public offer analysis.

The range of services that banks and other financial institutions can offervia the electronic channel is virtually limitless. In an attempt to attract customers, every institution is continuously trying to innovate and offer new items.

The advantage of using the Internet for customers is that it allows them to quickly learn about the many amenities offered by various institutionsand select the one that best suits their needs.

The employee receives an equally amazing benefit. He has evolved frombeing an incompetent employee who filled out forms and copied information from books to a regular service provider who attends to the needs of the client directly.

He used to manage certain processes, but these days he deals with customer demands, which are tasks for the bank or financial institution.

As a result, he now needs more knowledge resources, which he can obtain through improved training and other organizational developmentinitiatives like setting up functional teams and work groups, which combine the knowledge of individuals with various backgrounds and specializations to provide high-tech services and operations.

16. Additional advantages:

E-banking offers a few more advantages. They are :

1. Practicality.
2. Transaction completion speed.
3. Safety: conduct your banking at home.
4. Economics: online banking without going to the bank.
5. Lower service charges.
6. Intelligent Data Module, or IDM, integration with the currentenvironment that is seamless.
7. Extremely Marketable.
8. Simple Customization.
9. Lower Installation and Maintenance Expenses.
10. Autonomy of Platform.
11. Cross-border and round-the-clock availability.
12. Remote Authorization
13.

Perks Of Online Banking:

To the Customer:

- Anywhere Banking: regardless of the customer's location worldwide. It is feasible to make balance inquiries, servicerequests, instructions, etc. from any location in the world.
- The ability to manage funds in real time, seven days a week, andmost importantly, 24/7, is known as "Anytime Banking."
- There is always a huge psychological benefit to convenience.
- enables the consumer to reduce the "Cost of Banking" over time.
- Withdraw cash from any branch or automated teller machine.
- Online payment and purchase of products and services via theinternet.

To the Bank:

- Innovative strategy that tackles competition and positions the bankas a leader in technology within the banking industry
- Lowers consumer trips to the branch, which in turn lowers the needfor human interaction.
- Because interbranch reconciliation happens instantly, there is less opportunity for fraud and misappropriation.
- Online banking is a powerful tool for promoting the bank's numerous schemes and is considered a marketing medium.
- Tailored and tailored services are made possible by integratedclient data.

Limitations of e-banking:-

1. Safety problems near ATMs.
2. Fraudsters abusing bank cards at ATMs.
3. Risk of providing your card number when making an online purchase.

The banking industry has been greatly impacted by contemporary technologies. It gives end users sophistication and boosts the firms'competitive efficiency. To survive, it makes everyone the fittest.

Impact of IT on the Service Quality:

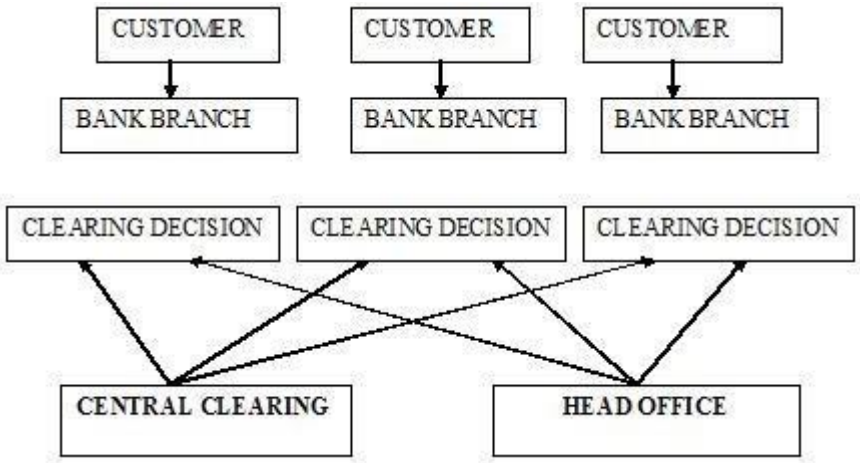
The most obvious effect of technology is seen in the way banks deliberately adapt to use it to deliver services more efficiently. Here's howthis affects service quality to sum it up:

- Automation has made service less of a competitive advantage forbig banks alone. By incorporating IT into their operations, small and relatively new banks with a restricted branch network are better positioned to compete with the big banks.
- Technology has led to the commoditization of many financial services. Consequently, banks must constantly strive to cultivate their relationship with consumers and maintain their loyalty, as they cannot take for granted a lifetime relationship.
- While technology can be an effective instrument for providing excellent customer care, it also has the unintended consequence of depersonalizing banking services. The impact on relationship banking is negative. A warm and straightforward handshake will probably never be replaced by ten years of computerization.
- Banks must automate regular consumer inquiries through self- service channels to lower the cost of service delivery. In order toaccomplish this, they must make investments in contact centers, ATMs, kiosks, Internet banking, and other customer-centric IT infrastructure.

IT's Effect on the Banking System:

Relationship banking is gradually replacing traditional banking in the banking sector. Through the network of branches, the bank and its clients have historically had a one-to-one interaction. Clearing and decision-making duties were centralized at the branch level when this was implemented. The branch network's growth, personnel training, and overall clearing network were all under the purview of the central office. The bank defined the guidelines for decision-making and kept an eye on the organization's performance,but the information that branch employees and their clients could access was restricted to a single area.

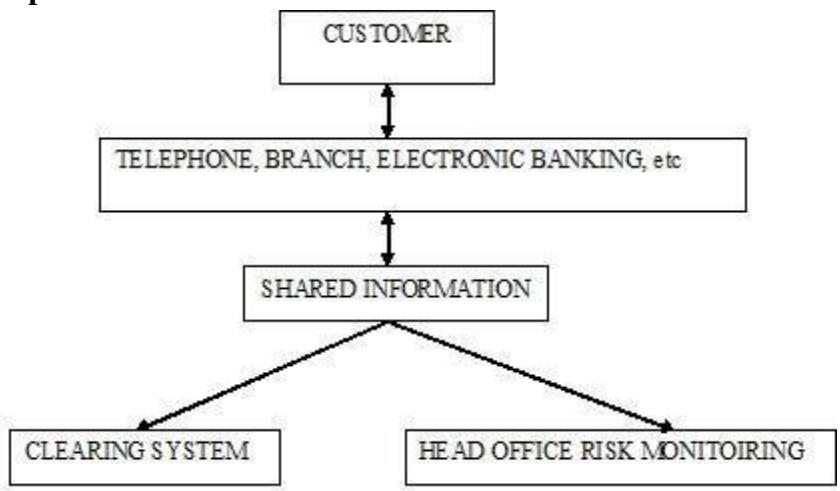
Conventional Banking Industry



The branch network of a modern bank is not sufficient on its own. Modern consumers want more convenient delivery methods, and services like online banking serve two purposes for the user. In addition to offering far better access to information about their account status and the bank's numerous other services, they offer standard banking services.In order to accomplish this, banks must build layers of account information that both clients and bank employees may access.

Customers may be able to learn more about the bank's services and about their personal financial status by using interactive electronic linksthat are accessible over the Internet.

The New Relationship Oriented Bank



Impact of IT on Privacy and Confidentiality of Data:

Data that was formerly saved on computers is now shown as needed via ATMs, mobile banking, online banking, etc. Due to all of this, concerns about data confidentiality and privacy have arisen. These include:

- People start to question whether their privacy is being scompromised due to the computer's fast throughput, integration,and retrieval capabilities.
- Everything appears to be in order as long as the individual data pieces are only accessible to individuals who are directly involved;nevertheless, privacy issues arise when data is cross-referenced to construct detailed individual dossiers.
- Consumers are suspicious of automated systems and feel frightenedby the banks' inadequate privacy protections regarding their transactions.

Apart from constitutional considerations, a lot of countries view privacyas a human right and hold those involved in computer data processing accountable for making sure that computer use does not progress to the point where various personal data can be swiftly gathered, combined, and retrieved. Making sure the data is only utilized for the intended purpose is another crucial duty.

Encouraging the Use of Electronic Payment Methods

(a) Fund Transfer:-

Because electronic payment methods are more efficient, secure, affordable, and safe than paper-based ones, theReserve Bank actively encourages their usage. The usage ofelectronic payments has expanded as a result of the system's greater safety, which is also made possible by the rules forintermediaries and the numerous security features in card payment systems.

The expansion of RTGS to 84,638 branches and NEFT to 86,449 branches as of the end of May 2012 highlights the effectiveness of numerous policy actions in this area. Furthermore, it is anticipated that banks would provide theirclients with more electronic payment options as a result of the rationalization of the standards governing access criteria, which includes the sub-membership option.

In March 2006, the Reserve Bank reduced processing fees to stimulate the expansion of the electronic payment system. To ensure that banks managing the operations and the destination bank receive sufficient remuneration, they have been reintroduced as of July 1, 2011, in the form of a service charge from the originating banks. In a similar vein,service fees were added to the RTGS system on October 1, 2011, with the goal of covering operating expenses and increasing overall system efficiency. Three sub-components have been added to the RTGS service charges:a monthly membership fee, a transaction cost, and a time- varying tariff. Member banks are only allowed to charge their clients the time-varying tariff.

Transaction volume under NEFT increased by 71% and value under NEFT increased by 91% between 2011 and 2012, reflecting these steps.In the fiscal year 2011–12, the RTGS gross transaction volume and value increased by 11.7% and 11.2%, respectively. Of the overall valueof non-cash payments made in 2011–12, the value of gross RTGS transactions made up 51%.

(b) Credit Card Transactions:

The Reserve Bank of India has made the usage of cards issued by Indian banks subject to an additional layer of identification. As a result, banks have applied the same for all online card-not-present (CNP) transactions, including interactive voice response, e-commerce, and m-commerce.By May 1, 2012, the mandate has been expanded to cover all standing orders, mail orders, and phone orders.However, there is a catch: if a customer complains about a transaction that was completed without the extra

authentication after the deadline, the issuer bank will pay the customer's loss without question.

The Reserve Bank established a working group on card present transactions in March 2011 as part of its efforts to reduce risk in thesetransactions. The group's goal was to examine and suggest a foolproofing plan of action for the system. Since then, the Reserve Bank has counseled banks and other interested parties to execute the required actions within the allotted period.

(C) India's ATM market is expanding:

Despite being designed primarily to dispense cash, ATMs can now perform a wide range of other banking-related tasks, including cash withdrawal, paying taxes and fees associated with routing bills,printing bank statements, transferring funds, buying goods online, booking train tickets, buying mall products, donating to charitable organizations, adding pre-paid phone credit or mobile phone advertising, and paying insurance premiums.

Table: Strength of ATMs as of March 31, 2011State-run banks: 49,487

banks in the private sector: 23,651; banks in the private sector: 4,126Banks abroad: 1,367

74,505 in total

In metropolitan and metro areas, there are roughly 70% of all ATMs. Rural communities are better served by public sector banks (SBI).

The use of electronic payments has grown significantly, which is partiallydue to a rise in technological adoption. The increasing number of ATMs suggests that customers enjoy using them for transactions. ATMs offer various services depending on the user. By the end of April 2012, there were 98,025 ATMs throughout the nation, including those operated by foreign, commercial, public, and cooperative banks. These ATMs are connected via the National Financial Switch. This information is based ondata provided by the National Payments Corporation of India.

(D) Internet banking for corporations:-

The worldwide banking industry is undergoing an electronic revolution thanks to the Internet. It has benefited from leveraging a range of bankingactivities due to its dynamic and adaptable nature as well as its widespreadreach. One of the main ways that banks in the United States and Europe now distribute their banking services and products is over the Internet.

Banks' corporate banking divisions provide to a wide spectrum of customers, from small to medium-sized regional enterprises with annual sales in the millions to massive conglomerates with billion-dollar sales and nationwide offices. Commercial banks provide businesses and other financial institutions with the following goods and services:

- Loans and other credit products: as previously said, this is usuallythe largest business segment in corporate banking and one of the main sources of both profit and risk for banks.
- Treasury and cash management services: these help businesses keep track of their working capital and foreign exchange needs.
- Equipment lending: commercial banks set up tailored loans and leases for a variety of equipment used by businesses in a variety ofindustries, including information technology, manufacturing, and transportation.
- Commercial real estate: banks provide services in this domain that include debt and equity structuring, portfolio evaluation, and real asset research.
- Trade finance: this includes factoring, bill collection, and creditletters.
- Employer services: Typically, specialized bank affiliates offer services like payroll and group retirement plans.

Commercial banks also provide similar services, like asset management and securities underwriting, to their corporateclients through their investment banking divisions.

Examination and Results

Computerization brought forth by technology has altered the face of the Indian banking industry. Even Nevertheless, at the moment, the foreign and private sector banks are more advantageous. However, public sector banks have also advanced significantly in this area. The following headings have been used to analyze the data gathered from differentbanks:

Bank Computerization

Numerous changes and difficulties were introduced by the 1990s reforms, which resulted in the growth, stabilization, and liberalization ofIndia's banking and financial industry.

Numerous foreign and private companies joined the Indian market withadvanced technologies, enabling them to provide effective customer service through various channels like internet banking and ATMs.

Conversely, Indian banks have been employing IT mostly for transactionprocessing and more as a matter of necessity. In order to reposition banks in the integrated financial services market, they must now implement IT.

The banking industry's adoption of IT will be primarily motivated by the need to increase efficiency, lower transaction costs, and provide better customer service. Given the fierce competition they face from both domestic and foreign banks, these factors are especially crucial for India's public sector banks.

IT can assist companies in transitioning from their current state of operating as separate islands to a centralized banking environment. In order to make the Indian banking sector globally competitive, IT and thefinancial community must collaborate to create tailored IT solutions.

The banking industry's embrace of IT will enable real-time transaction processing through a variety of channels. It would improve a bank's capacity for cross-selling, guarantee improved fund management, security, and safety, and boost productivity by integrating systems acrossmany sites.

Additionally, it would reduce transaction costs, guarantee effective management of non-performing assets (NPAs), improve the capacity todo in-depth financial research, and acquire business knowledge. Along with promoting wireless mobile banking and e-commerce, increased ITuse would also stimulate the use of the Internet to allow access for online bill payments, cash transfers, and e-statements.

In response to the increasing competition from overseas banks and financial institutions, public sector banks working with the Indian IT sector must prepare for the next stage of IT adoption by offering centralized banking solutions.

- **Opportunity for Indian banking sector inbranchcomputerization:-**

1. Networking for IT
2. Integration and Management of Systems
3. Applications for Customer Relationship Management (CRM)
4. Call centers and back office operations.
5. Data mining and data warehousing
6. Online and mobile banking.

- **sComputerization of Banks in India**

The newest buzzwords in international trade are e-banking and e- commerce. Electronic banking,

sometimes known as e-banking, is thepractice of completing financial transactions using computers and information technology (IT).

Labor unions in India opposed the computerization of banking operations out of concern for lost employment possibilities. Second, thecomputerization process necessitates IT-savvy staff with extensive technical training. Thirdly, purchasing machines for computerization requires a significant financial investment.

Fourthly, a significant number of bank branches located in rural areas must be connected in order for banks to be effectively computerized. Access to telecommunication facilities is slow in rural locations.

Computerization entered Indian banks slowly for the reasons outlinedabove.

- **Present position of computerization in banks in India:**

Banks began taking steps to computerize their varied activities after the Rangarajan Committee issued recommendations. Large or significant branches were the first to be identified by Public Sector Banks (PSU banks) for complete branch computerization.

Banks that had fully automated some of their branches began utilizing satellite systems or leased phone lines to link their computerized branches together. In addition to guaranteeing that their clients receive complete service, this allowed banks to have more centralized management over their branches.

Banks began allocating substantial sums of money for the computerization of their operations during the third stage. It became necessary as a result of financial sector changes brought about by the recommendations of the Narasimham Committee in the early 1990s.

Additional liberalization and globalization policies implemented in the1990s permitted the establishment of new private sector banks and unrestricted access for international banks into India. This introduced banks to a brand-new and distinct operational environment.

Competition among banks was fostered by the Reserve Bank of India's deregulation of the interest rate regime, gradual reduction of the Cash Reserve Ratio and Statutory Liquidity Ratio, adoption of a universal banking system, approval to open new banks in the private sector, etc.

Due to these restrictions, Indian banks were forced to adopt cutting-edge IT and services and products such as "tele-banking" and "anywhere banking." Effective Management Information Systems (MIS) were thought to be crucial for strong client connections, database upkeep, and operation control at the same time.

Because of this, banks currently handle a wide range of tasks involving IT and computers, including decision-making, branch control, performance monitoring, interbranch transactions, filing statutory returns to the RBI, reconciling outstanding entries in multiple accounts, funds transfer, credit-related information, investment management, treasury operations through the money market, futures market, and securities market, employee personal data, and numerous other tasks.

Nonetheless, each bank may have a different degree of computerization.We may claim that 80 percent of banking activities in urban areas are now computerized. The procedure is accelerating, even at the level of rural branches.

As of today, more than a million computers were being used by Indian banks. There are almost 2000 ATMs in existence.

(a) Banking Innovations

In addition to monetary notes, we also have computerized payment systems these days. The financial sector in India is heading toward a future in which it will be able to access new instruments in addition

to safety and liquidity. switching from a payment method based on cash andchecks. The following factors have made the use of an electronic fund transfer system essential:

1. High transaction volumes
2. Exorbitant expenses associated with handling and storing paperinstruments.
3. A typical characteristic is a delay in realization.
4. The finality of payment takes time since it is difficult to physically carryhuge volumes of instruments from branches to the clearing house and organize them by bank branch at the center.

The following are the two most often utilized technologies forelectronic payments:

(i) NEFT, or the National Electronic Fund Transfer:

It is a nationwide payment network that makes one-to-one money transfers possible. Individuals, businesses, and corporations may use this scheme to electronically transfer money between any bank branch in the nation that is a participant in the scheme and any other individual, business, or corporate that has an account with that bank branch. A bank branch must have NEFT activated in order to participate in the NEFT money transfer network.

(ii) Real Time Gross Settlement :

Real Time Gross Settlement is referred to by the term RTGS. TheReal-Time Gross Settlement (RTGS) technology facilitates real- time, gross-basis money transfers between banks. This is the banking channel's fastest feasible money transfer system.

Real-time settlement eliminates the need for a waiting period in payment transactions. As soon as the transactions are processed,they are settled. When a transaction is settled "grossly," it indicates that it is settled one to one and is not combined with anyother transactions. Since the money transfer is recorded in the Reserve Bank of India's records, it is assumed that the paymentis final and cannot be reversed.

Twice in March 2012, the volume of RTGS transactions exceeded 0.3 million, prompting the allocation of additional resources to manage theelevated volume of transactions. The Reserve Bank is replacing the current RTGS with NG-RTGS, which offers more functions and capacities, in light of the rising volumes as well as other business requirements. It is anticipated that the NG-RTGS will implement the new messaging protocols.

Conclusion

The fierce rivalry and rising client expectations have caused commercialbanks in India to become more knowledgeable about information technology.

Commercial banks in India have also been obliged to use new technology in their daily operations due to the entry of international andnew private sector banks with their superior technology-based offerings. One of the main areas of attention for commercial banks and policy makers alike is the use of technology to expand the banking sector in India. Information technology is being used by Indian banks to enhance client services and facilities in addition to streamlining internal operations.

The effective use of technology has made it possible for banks to manage the higher transaction volumes that come with a larger customerbase in an accurate and timely manner. The global IT revolution is very beneficial to the Indian banking sector. It made it possible to design complex products, improve market infrastructure, put into practice trustworthy risk-control strategies, and assist financial intermediaries in reaching out to a variety of geographically remote and diverse markets.

The creation, transmission, and retention of electronic or magnetic data that can be accepted as genuine evidence in court has also been given the much-needed legal recognition it deserves thanks to the

Information Technology Act of 2000, with the exception of certain areas that are still subject to the provisions of the Negotiable Instruments Act of 1881.
With the goal of delivering "delightful customer satisfaction," banks reach out to their clients by creating and providing straightforward, secure technologies. In actuality, information technology in India has been successful in establishing a condition where all parties involvedbenefit.

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QUESTIONNAIRE

- AGE:
- GENDER:
- EDUCATION:

On a scale of 1 to 5, with 5 representing the greatest factor affectingyour decision, respond to the following questions:

- Do you concur that the field of health care administration offers guidance and leadership to an organization?
- To what extent do you agree that nearly everyone needs healthcare management in order to maintain company discipline?

- Do you believe that knowledge is a system that facilitates access to, sharing of, and updating of business information by people?
- Do you think that a competent health care manager ought to communicate well with his peers?
- Do you concur that decision-making abilities are facilitated by knowledge management?
- How much do you believe that knowledge management promotes learning organization by establishing routine learning?
- Do you think that innovations and cultural shifts are encouraged byknowledge management?
- Do you agree that clinical decision-making in health care is supportedby knowledge management?