



## E-Banking: Challenges and Opportunities in India

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### ABSTRACT:

*India is still in the early phases of the development and growth of electronic banking.*

*Over the past ten years, competition as well as shifts in technology and lifestyle have altered the banking industry. The modifications that have occurred enforce strict competition and compliance requirements on banks. This is a problem with the E-Banking scheme. The core components of banking in India are expected to face both unprecedented hazards and a plethora of opportunities as a result of e-banking. The concept of the scope of electronic banking is still developing, thanks to a number of initiatives by the Indian government and the Reserve Bank of India, which is the nation's central bank and has aided in the growth of e-banking in India. The purpose of this essay is to outline India's e-banking prospects and difficulties.*

**KEY WORDS** - E. Banking, Reserve of Bank of India, NEFT, State Bank of India

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### 1. Introduction

“At the time of nationalization in 1969, the Indian banking system was mostly focused on domestic business. The main goals of national policy, as determined by the banks, were to raise funds for financing public deficits, mobilize domestic savings, and lend money to particular economic sectors. From the days of back-office automation to today's online, centralized, and integrated solutions, technology in Indian banking has advanced significantly. Without the aid of technology, it is impossible to imagine ATM, Internet, mobile, and phone banking, or contact center services. The irony is that the majority of those products are less about banking and more about technology. Let's examine the ways in which the banking industry has evolved in the past ten years. After the recommendations of the Committee on Financial System (Narasimham Committee, 1991) were put into practice in 1991, the banking industry began using IT extensively. Among the committee's proposals is the unrestricted admission of foreign banks and the private sector. Private and international banks introduced innovative technologies and provided consumers with world-class, technology-based services like internet banking, credit cards, and ATMs—services that PSU banks had never ever dared to imagine. By providing top-notch services, these banks began stealing clients from PSU (Public Sector Undertaking) banks. These banks felt the pressure and understood they would quickly be forced out of the banking industry if they did not follow their lead.

In a short period, the banking sector underwent significant changes. This was also observed in the PSU banks. Consequently, the integration of technology in banking has led to the emergence of various service channels such as ATMs, telebanking, internet banking, mobile banking, and banking services accessible anywhere and at any time. The utilization of technology in banks has transformed banking from a labor-intensive, cost-variable industry into a capital-intensive, fixed-cost industry.

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### 2. E-Banking: The Concept

E-banking is the use of technology to provide banking services to clients at their home or place of business. According to Daniel (1999), electronic banking is the process by which banks provide their clients with information and services via various delivery platforms that can be utilized with a variety of terminal devices, including desktop or mobile software-equipped computers, digital television, and mobile phones. The term "e-banking" refers to a combination of services that include cash government services, Internet and mobile banking, ATMs, Fund Transfer Systems, Real Time Gross Settlement (payment and allotment systems), Credit/Debit/Smart/Kisan Cards, Data warehousing, Operational interpretation for MIS, and Customer Relationship Management (E tools 4 all).

E-based banking, which encompasses a range of financial operations that may be carried out from any location, is often referred to as cyber, home, and virtual banking (Dheendharyalan 2010). Examining the definition of e-banking as it is presented in the literature demonstrates that the term is a higher construct that refers to a variety of financial services provided via electronic media, including the internet, TV, PC, and phone. Therefore, RTGS, NEFT, ECS, credit and debit cards, ATMs, telebanking, internet banking, mobile banking, and check truncation are all included in the phrase "e-banking."

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### 3. LITERATURE REVIEW

Raghavan (2006) stated that currently, more than 85% of completed payment transactions are electronic, and the traditional branch-level banking holds little significance for electronic banking users. It is expected that by 2020, many banks, including PSU banks, will offer online ATMs, phone banking, virtual banking, e-banking, Internet banking, etc. Mohan (2006) observed that Indian banking is on the verge of a paradigm shift, and banks have made significant progress in providing a variety of new and innovative e-banking services to customers today, which was previously inconceivable.

Public sector banks, however, have not been able to fully capitalize on the advantages of computerization. According to Kamakodi et al. (2008), technology-based services in Indian banking are surpassing expectations, yet there remains a significant gap in human service. Uppal and Chawla (2009) discovered that while the patrons of foreign, private, and public banks in the Ludhiana district of Punjab are interested in using e-banking services, they also face obstacles such as poor network quality, inadequate knowledge, inappropriate location, misuse of ATM cards, and trouble opening an account. When Reeti Agarwal et al. (2009) looked at Indian customers' perceptions of e-banking, they discovered that the age group of 31 to 45 years old used e-banking the most frequently. The opinions of the respondents

The most common issue encountered was determined to be slow transaction speed, closely followed by server unavailability when utilizing e-banking. According to Sharma (2009), the move toward electronic delivery of banking goods and services is being driven in part by consumer demand and in part by a more intensely competitive global marketplace. Many reports of hacking and phishing attacks across India were noted by Kumar and Sinha (2009). Cybercrimes, they said, demonstrate that e-banking has a number of vulnerabilities that are easily exploited and that consumers should exercise extra caution while transacting online.

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### 4. OBJECTIVE OF RESEARCH

The objective of this paper is to comprehend the implementation of electronic delivery channels for banking transactions and the role of E-Banking in India.

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### 5. RTGS, ECS (CREDIT), ECS (DEBIT)

The Real Time Gross Settlement System (RTGS) is a system that allows money transfers between banks in both "real time" and "gross" amounts. The lowest amount that may be transferred with RTGS is Rupees Two Lakhs (3100 US dollars), and there is no upper restriction. RTGS allows for both customer-to-customer and interbank transfers between bank accounts. Between 2005–06 and 2009–10, RTGS volumes experienced an astounding 72-fold rise in volume, with an Average Annual Growth Rate (AAGR) of 146.34%. The years with the greatest growth rates were 2005–06 in terms of both volumes and value, and the lowest growth rates were 2007–08 in terms of volumes and 2008–09 in terms of value.

Nonetheless, over the specified period, RTGS transactions increased 9.7 times in value terms, with an annual growth rate of 66.43 percent. The quick increase in volume suggests that RTGS is becoming a more well-liked payment option for both banks and consumers. The Reserve Bank of India's clearing houses facilitate electronic financial transfers between bank accounts via the Electronic Clearing Service (ECS).

This is typically used for bulk ECS-credit and ECS-debit transfers from one account to numerous accounts, or vice versa. When an organization must pay out large amounts of money on a regular basis, such as dividends to shareholders, interest to investors, salaries and pensions to staff, etc., ECS (Credit) is utilized. When an institution needs to collect money from several clients on a regular basis—for example, for phone or power bills, property taxes, water taxes, loan payments, etc.—ECS (debit) is utilized.

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### 6. NEFT, Credit Card and Debit Card

Introduced in October 2005, the National Electronic Fund Transfer (NEFT) is a secure electronic payment system that allows money to be transferred between bank branches across the country. The maximum and minimum amounts that can be transferred via NEFT are both unlimited. There are eleven settlements from 9 am to 7 pm on weekdays and five settlements from 9 am to 1 pm on Saturdays for the hourly fund transfer. Using a credit card, a person can make purchases without having to pay cash right away. It gives cardholders the ability to obtain credit facilities from issuing banks without requiring any security for a predetermined amount of time. Similar to an ATM card, a debit card can be used to withdraw cash from banks and can be used in place of checks at retail establishments to pay for goods and services. The bearer of a debit card can only spend the amount in his account.

The year-over-year rise of NEFT, credit card and debit card transactions in volume and figure 4 in value terms are shown in Figures 3 and 4. NEFT transactions increased in value terms by 24 times with an AAGR of 80.23 percent, and in volume terms by about 83 times at an AAGR of 120.15 percent. The remarkable growth in volumes suggests that an increasing number of clients are choosing NEFT, a one-to-one fund transfer technology, for their money transfers.

Over the course of the six years, the number of credit card transactions has only doubled (AAGR: 16.17% compared to a nearly 4-fold growth in value, AAGR: 24.77%). Conversely, the amount of debit card transactions has increased by almost five times, with an annual growth rate of 29.39 percent; also, the value of these transactions has increased by five times, with an AAGR of 26.65 percent. The data shows that among consumers, debit cards are more common than credit cards.

**Figure 3: Growth Rates of NEFT, Credit and Debit cards in Volumes**

Source: compiled from RBI annual reports -various years

**Figure 4: Growth Rates of NEFT, Credit and Debit Cards in Value Terms**

Source: compiled from RBI annual reports -various years

**7. Automated Teller Machine (ATM)**

Automated Teller Machines are a significant technological advancement that have completely changed the banking industry's distribution system (ATMs). In 1987, HSBC became the pioneer bank in India to launch ATMs. Later, public sector banks also pursued the installation of ATMs around the nation, but new private sector banks took the lead in installing ATMs in a large way.

Before the general Indian population embraced ATMs, there was a period of inertia. For example, in 1998, there were only 500 ATMs in India; however, by March 2010, Public Sector Banks in India alone opened 28,039 ATMs, according to data from the Ministry of Finance.

Table 1 lists the total number of ATMs operated by Scheduled Commercial Banks in India. In India, there are 60,153 ATMs, of which public sector banks own 40,680.

Table 1: Number of ATMs of Scheduled Commercial Banks in India at the End of March 2010

Bank Group	On-Site ATMs	Off-Site ATMS	Total ATMs	Off-site ATM as percentage of total ATM
Public Sector Banks	23797	16883	40680	41.5
Private Sector Banks	8603	9844	18447	53.4
Foreign Banks	279	747	1026	72.8
Total of all Banks	32679	27474	60153	45.7

Source: Report on Trend and Progress of banking in India, 2009-10

When March 2010 came to a close, 32.7% of all ATMs in the nation were situated in rural areas. The fact that the population per ATM fell from 43,000 in 2007 to 19,700 in 2010 helps to explain why there has been an increase in ATMs in India. It fell from 1,25,600 in rural areas in 2007 to 43,500 in urban areas in 2010, and from 15,900 in urban areas in 2007 to 8,100 in 2010.

**8. Internet Banking (IB)**

The structure and nature of banking could be altered by the revolutionary technology advancement known as Internet banking (IB). With the recent rise of electronic commerce and business, an increasing number of banks are switching from their old "bricks and mortar" approach to a "clicks and mortar" one in order to maintain commercial competitiveness (Chau, et al 2003). The newest in a long line of recent technological marvels is IB. The supply of traditional banking goods can now be done efficiently through ATMs, Tele-Banking, Internet Banking, Credit Cards, and Debit Cards. Banks are aware that interest allows them to cross national and international boundaries and explore new opportunities (Mavri.M et al 2006).

The banking industry is seeing an increase in the use of the internet as a delivery method. The system that allows financial institutions, clients, individuals, or businesses to access accounts, conduct transactions, or get information on financial products and services via a public or private network, including the internet, is referred to as internet banking. Malik and Prakash (2008). ICICI Bank was the first bank in India to implement IB. It is the first bank in India to introduce internet banking together with a website. In 1999, ICICI Bank was followed by India Bank and HDFC Bank as the pioneers in adopting this technology.

According to a study on Internet users by the Internet and Mobile Association of India (IAMAI), 23% of online users in India prefer IB over ATMs, which are preferred by 53% of users. In India, 35 percent of the 6356 Internet users that were sampled use online banking services. This indicates that a sizable portion of internet users do not use IB, hence it is important to comprehend the motivations behind this (Geetika et al, 2008). People were either unaware of or not directly impacted by the technological advancements occurring in the banking industry prior to the invention of ATMs. Customers saw ATMs as a huge revolution since they made it possible to bypass the lengthy lines that existed in front of bank tellers. Additionally, it gave them the freedom to take out cash whenever and whenever they pleased (Sharma, 2009). According to an IAMAI study, people in India are not using bank websites

for financial transactions for a variety of reasons, including security concerns (43%), a preference for in-person transactions (39%), ignorance of online transfer (22%), poor user friendliness (10%), and lack of facilities at the current bank (2%) Ph.D., 2003).

## 9. Mobile Banking

IB is extended by mobile banking, or M-Banking. According to Pousttchi and Schurig (2004), mobile banking is any "form of execution of financial services in which the customer uses mobile communication techniques in conjunction with mobile devices." Stated differently, it refers to the practice of conducting banking and financial transactions via mobile phone devices. Mobile phones are a great way to reach banking consumers because their penetration rate in India is far higher than that of the internet. In India, 811 million people own a mobile phone, yet only 200 million have access to a bank account.

This means that out of the 1.2 billion individuals on the planet, 68% have a cell phone and just 17% have a bank account. The figures are self-explanatory. Mobile phone is the key to accessing the 'un-banked' and expanding financial inclusion for the wider populace (The Hindu, July 11, 2011).

**Table 2: Mobile Banking Transactions in India in Volumes and Value Terms**

Month / Year	Value (Rs. in thousands)	Volume
May -09	48542	52538
Oct - 09	69430	111623
Mar -10	236246	271920
Oct - 10	517689	556003
Feb -11	616191	707496
<b>Average Growth rate</b>		<b>120</b>

Source: Compiled from Reserve Bank of India, Mobile Banking Transactions statistics – [www.rbi.org.in](http://www.rbi.org.in)

According to Table 2, mobile banking is quickly becoming a well-liked e-banking option in India. In India, the volume and value of mobile banking transactions have surged thirteen times in the last almost two years. This demonstrates how Indian consumers' interest in mobile banking is expanding.

## 10. Top 10 Banks That Provide Best Internet Banking Facilities in India ([Http://Omgtoptens.Com](http://Omgtoptens.Com))

### Citi Bank: Ranked No. 10

One of the leading banks in India with the greatest net banking services and schemes is Citibank. Customers can improve their customer ratio by using a variety of services like online banking, text banking, mobile banking, tablet banking, online bill payment, online fraud protection, overdraft protection, and many more. This bank is among the greatest in India because of all these services in addition to its goods, which include credit cards, ATM cards, and other similar offerings.

### Union Bank of India: Ranked No. 9

One of India's biggest government banks is UBI. More than half of this bank's share capital is owned by the Indian government. All customers, both individual and corporate, use the Online Telebanking facility, which is the form of the Internet banking system. The bank maintains offices outside of India in the People's Republic of China, the United Arab Emirates, Shanghai, and Hong Kong. The bank's clients firmly believe that they are "Good People to Bank With."

### Canara Bank: Ranked No. 8

Basically, Canara Bank is a state-owned bank of Karnataka, India. It was founded in 1906 and has branches and ATMs all across India, numbering over 3,057. The bank has offices and branches not just in India but also in other nations, including Hong Kong, Doha, Shanghai, Moscow, London, and Dubai. The bank provides Internet Banking, Mutual Funds, Loans and Advances, Savings and Deposits, Consultancy Services, and Depository Services as its banking services.

### Bank of Baroda: Ranked No. 7

The Maharajah of Baroda, Gujarat, Sir Sayajirao Gaekwad III, formed this bank in 1908. The bank offers a wide range of customer-friendly products and services, including ATM/debit cards, credit cards, pre-paid gift cards, retail banking, wealth management, SME banking, mobile banking, Internet banking, and banking for rural and agricultural areas. Its 3,778 branches and 1,657 ATMs are dispersed throughout the nation.

### Punjab National Bank: Ranked No. 6

When it comes to online banking capabilities, PNB is rated #6. However, it ranks third among India's government commercial banks. Founded in 1895, this bank currently has around 5000 branches across 764 cities across the nation. This bank is one of the few government banks in India that provides older persons, members of the armed forces, students, and women with a variety of services and programs.

#### **Bank of India: Ranked No. 5**

In terms of online banking capabilities, Bank of India ranks as the fifth-best bank in India. The bank was established on September 7, 1906. Like many other banks, this one offers a wide range of services to make life easier for its clients, including Internet Banking, Online Tax Payment, Mobile Banking, Pay Bills, Online Share Trading, Ticket Booking, and many more. It boasts about 27 branches abroad in addition to its 3140 branches domestically.

#### **HDFC Bank: Ranked No. 4**

Since its inception in 1994, this financial service has offered excellent support. As a result, it is now India's fourth-largest bank and the country's second-best bank by market capitalization. It offers a wide range of services to its clients, including Net Banking, Online Remittances, Personal Banking, NRI Services, and several more. This bank won numerous awards in 2008 for being the best in the retail bank category and the best at using IT into services. The bank is regarded as one of India's top banks, with 1,5000 branches.

#### **Axis Bank: Ranked No. 3**

When it comes to private banks, the Axis Bank is the best. This bank was once known as Unit Trust of India, or UTI. This organization has been promoting this bank since 1994, when the government first permitted private banks. With 729 branch offices and 3171 ATMs, the internet banking offered by this bank has received positive feedback from customers.

#### **ICICI Bank: Ranked No. 2**

ICICI Bank is the second-largest bank in India. There are 1,419 branches of this particular bank overall. This bank provides premium services like mobile and internet banking, among others. In addition to operating in India, the bank has branches in over 18 other nations, including the UK, Canada, Russia, and more. Its main office is located in Mumbai, India. In addition to being the second-best bank for online banking, it offers investment banking, asset management, life insurance, and non-insurance, among many other services.

#### **State Bank of India: Ranked No. 1**

State Bank of India is the highest ranked bank in India. In the list of banks with the best online banking capabilities, this one is the oldest and comes in first place. Furthermore, it has the most votes across all metrics—profit, assets, revenues, etc. This federal bank is the second largest in the world and was established in 1806. This also accounts for twenty percent of the loans made by Indian Bankers, with a total of sixteen thousand branches and eight thousand ATMs.

#### **Computerization of Banks in India**

The newest buzzwords in international trade are e-banking and e-commerce. Electronic banking, sometimes known as e-banking, is the practice 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, the computerization process necessitates IT-savvy staff with extensive technical training. Thirdly, purchasing machines for computerization requires a significant financial investment.

Fourth, 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 listed above.

However, Indian banks have been embracing IT more against their will and mostly for transaction processing. 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.

In light of 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 their consumer education program, which will involve offering centralized banking solutions.

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## **11. Opportunity for Indian Banking Sector in Branch Computerization**

1. Networking in IT
2. Integration and Management of Systems
3. Applications for Customer Relationship Management (CRM)
4. Contact centers and back-office operations

## 5. Data mining and data warehousing

### 1. McKinsey India Personal Financial Service Survey 2011 (Business Standard, 2011)

According to a survey by global management firm McKinsey & Company, branch banking has declined by a whole 15 percentage points in India, but up to 7% of account holders use the Internet for financial activities.

According to McKinsey & Company India, "Use of the Internet for banking has seen a massive rise in the 2010-11 survey, taking the overall number of bank consumers who use the Net to close 7% of the total bank account holders, a seven-fold jump since 2007". At the same time, branch banking has decreased for the first time in the previous 13 years.

The survey was conducted one-on-one with about 20,000 Asian consumers, including the mass, mass-affluent, and affluent segments across 13 markets. Due to the market's extreme diversity, India accounted for the largest survey pool with 5,000 respondents.

The poll is based on how frequently respondents utilize the Internet or go to bank branches each week to complete transactions.

The number of times Indian respondents went to a bank branch in 2007 was 0.58, compared to 0.49 in 2011, indicating a 15-percentage point decline.

Between 2007 and 2011, branch utilization decreased by 27% on average throughout Asia, while Internet usage decreased throughout the Asia-Pacific region.

Regarding online banking, the survey indicated. "In terms of Internet and mobile banking usage, India is leading the boom in Asia. Although branch utilization decreased by 15% in this instance, Internet and mobile usage increased.

According to a McKinsey survey, the average number of banking relationships nationwide increased by 19% between 2007 and 2011, while the average percentage of people willing to shop around increased by 15%. These increases indicate that consumers are becoming more willing to engage with a wider range of financial institutions and vote with their feet.

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## 12. Conclusion

In India, e-banking is rapidly gaining popularity. A number of factors, including decreasing internet and mobile costs, dropping PC and phone prices, broadband available via cable and digital subscriber lines, etc., will undoubtedly contribute to the growth of e-banking in India. Based on the analysis, RTGS, ECS, and NEFT are the developing payment systems in India for big value transactions, bulk payments, and one-to-one fund transfers, respectively. Debit cards are more common than credit cards among card-based payment methods. Both internet and mobile banking are growing in popularity, but given how quickly mobile phones are becoming common in India, there is a lot more potential for providing banking services through mobile phones than there is for the internet. ATMs are becoming more common in India, especially in rural areas, and customers of all stripes are beginning to accept ATMs as a channel for banking transactions. However, it has been plagued by bad things like phishing and identity theft, which is why some customers are still hesitant to use electronic channels to transact banking business.

By using appropriate customer identification devices, information screening procedures, regular checks of compliance with various laws, learning about various national laws (relevant), and assisting customers with their cross-border transactions, legal and cross-border hazards can be avoided.

Technology related to information has been essential to the development of the banking sector. The banking industry's adoption of computerization has made it possible for Indian banking to reach every person. Not only has information technology made life easier, but it has also provided a great deal of comfort to those who need to access banking in an efficient manner but lack expertise in IT.

We can conclude that more IT introduction won't be enough to provide the desired competitive edge and performance increase; instead, clever people are needed to employ these tools. Marketing mix technology will be the difficulty in India, despite the fact that IT management would still be difficult in the future banking environment.

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