UNIT 3 SUPPORTIVE INFRASTRUCTURE

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3.1 INTRODUCTION
Support infrastructure comes as new technologies. New technologies set off a process of change. That, in turn, poses its own set of challenges to institutions as well as consumers. IT (Information Technology) is not yet a very comfortable choice for millions. Therefore, if we are to encourage IT proliferation, we must facilitate a change in the mindsets of the customers and their attitudes. To bring the change, awareness building is one method. But it is major challenge to the institutions. It must be addressed as a whole. As automation increases and products come with even more technology based components, bank customers must understand up front the pros and cons of various products. Banks have to share the responsibility of providing this education. It is not just about mere listing of all the terms and conditions on the agreement which banks and customers share. If banks and customers are honest, documents should clearly state the development of the technology and the customers are also should read this information. But do they? Beyond that, Customers should understand all the technical and legal language written in the document. But can they? Real education will lead to breakthroughs in understanding. Based on the above discussion, the present Unit will discuss the new technologies like IT and how it supports banking operation and whether customers get benefit out of it. What type of changes it brings in rural areas?

3.2 OBJECTIVES
After studying this Unit, you would be able to

- Define technology;
- Discuss the significance of technology in banking sector and its usefulness in providing inclusive fiancé in rural areas;
- Learn the different types of technology prevailing in banking sectors; and
- List the probable technologies may occupy in the future.

3.3 TECHNOLOGY AND BANK
More consumers would be more eager and willing to move towards use of technologically-enhanced products. In turn, this will act as a multiplier, with a positive impact on bank performance. Banks also must pass on the benefits of lower costs from technology-based products and services to their customers. We surprised to note that transfer of funds from one branch of a bank to another, both under the Core Banking System, entailed a service charge
for the remitting customer. It does not make sense that the charge for such funds movement within a bank is much more than for inter-bank funds transfers. The entire institution of banking is built on consumer trust. By imposing charges not commensurate with the cost of services provided, we risk losing this fundamental trust that underlies a banking relationship.

Security in an IT-based transaction processing environment is also critical. Adequate security controls must be in place. This includes the validation of transactions using the maker-checker concept, transmission of electronic messages over a network in encrypted form, due authentication by means of providing for digital signatures and storage of electronic records in conformity with the provisions of the IT Act, 2000 and amendment Act 2008. There is also the human element, and this is an issue as well. Studies around the world show that a significant proportion of IT frauds are the work of insiders. This underscores the need for ensuring that proper controls are in place and that they work properly.

We know that investments in newer technologies must be made to modernize existing operations, to face competitive challenges, and to meet customer expectations. Some of these investments will also be made with the goal of achieving cost savings, energy efficiency and environmental friendliness. In the years ahead, the ability of banks to harness new technologies to meet the demands of households and businesses will be tested. We should confident that banks and other financial institutions will meet these challenges head on, continue to find new and better ways to put technology to their and their customers’ best use, and that they will manage the technology and business risks associated with these investments.

### 3.4 TECHNOLOGIES AS COMPETITIVE EDGE

In this section we will learn definition for technology and the technologies used in the society in the current situation and technologies to be used in future.

#### 3.4.1 What is “Technology”?

Technology is innovating or making something new and using the same. In the process of using the new technology, knowledge on tools, techniques, crafts, systems or methods of organization is significant in order to solve a problem or serve some purpose. The term can either be applied generally or to specific areas: examples include construction technology, medical technology, and information technology.
3.4.2 Technology - Current and Future
Technology has affected society and its surroundings in a number of ways. In many societies, technology has helped to develop the economy more advanced and reduced the drudgery. This helped human beings to avail leisure time to innovate and to do things which they feel like to do. Many technological advances produce unwanted by-products, known as pollution, and deplete natural resources which are detriment to Earth and its environment. Various implementations of new technology influence the values in the society and new technology often raises new ethical questions. Examples include the rise of the notion of efficiency in terms of human productivity, a term originally applied only to machines, and the challenge of traditional norms.

Philosophical debates have arisen over the present and future use of technology in our society, with disagreements over whether technology improves the human civilization or worsens it. Neo-Luddism, anarcho-primitivism, and similar movements criticize the pervasiveness of technology in the modern world, opining that it harms the environment and alienates people; proponents of ideologies such as trans-humanism and techno-progressivism view continued technological progress as beneficial to society and the human condition.

3.5 IT AS FACILITATOR FOR RURAL GROWTH - IT AS NEED OF THE HOUR FOR RURAL GROWTH
It may seem paradoxical that modern information technology (IT), associated in our minds with developed country markets and capital-intensive methods of production, has any relevance for a country where many millions still lack basic needs. Nevertheless, there are many efforts underway in India and other developing countries to demonstrate the concrete benefits of IT for rural populations, and to do so in a manner that makes economic sense.

Information Technology is becoming as important as ‘roti’, ‘kapra, aur makan’ (bread cloth and house) today. People believe in secrecy of information in 1940s. But, new millennium, the concept of secrecy with regard to information is totally reserved. Now everyone likes to share the information. Information is thus emerging as powerful tool.

Computer and other information technologies can be used in many ways. Like one can distribute seeds and grains to the farmers and other using ICT and farmers can get the price of the particular commodity through ICT. This helps them to sell the product in a proper price. Price monitoring and fertilizer distribution are done through ICT in some places in our
country, where computer based information systems have been fully implemented. The following case study will explain the use of ICT in selling agricultural products and distributing seeds to the farmers.

Box 3.1: e-Choupal

**e-Choupal**

ITC e-Choupal is an innovative market-led business model designed to enhance the competitiveness of Indian agriculture. e-Choupal leverages the power of Information and Digital Technology and the internet to empower small and marginal farmers with a host of services related to know how, best practices, timely and relevant weather information, transparent discovery of prices and much more. e-Choupals not only connect farmers with markets but also allow for a virtual integration of the supply chain and create significant efficiencies in the traditional system. A business concept embedded with social goals, e-Choupal was designed to empower farmers and triggers a virtuous cycle of higher productivity, higher incomes, enlarged capacity for farmer risk management, and thereby larger investments to enable higher quality and productivity. These interventions have helped transform village communities into vibrant economic organizations, by enhancing incomes and co-creating markets. ITC’s e-Choupals serve 40,000 villages and 4 million farmers, making it the world’s largest rural digital infrastructure created by a private enterprise.

<table>
<thead>
<tr>
<th>e-Choupal</th>
<th>Now</th>
</tr>
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<tbody>
<tr>
<td>States covered</td>
<td>10</td>
</tr>
<tr>
<td>Villages covered</td>
<td>40,000</td>
</tr>
<tr>
<td>No. of e-Choupals</td>
<td>6,500</td>
</tr>
<tr>
<td>Farmers e-empowered</td>
<td>4 million</td>
</tr>
</tbody>
</table>


These systems are fairly complex in nature using optimization techniques and taking advantage of nationwide computer communication networks. Large irrigation projects which
are critical to development in agriculture sector are being closely monitored on an online basis through the use of IT. The role and application of Information Technology has expanded tremendously during the last decade in rural finance. It has contributed to faster cheque clearance in the banking systems, better book keeping and improved customer services, increased automation transaction through ATMs (Automated Teller Machines) in even small cities and villages. The fund movement has been made much faster through the setting up BANKNET in smaller cities and villages of India

3.6 IT INFRASTRUCTURE IN RURAL AREAS
We examine the potential for rural IT use, both from supply and demand perspectives. On the supply side, we examine the technical and organizational issues that arise for delivering IT-based services to rural populations in India. On the demand side, we examine the potential benefits that IT can bring to these populations, if the implementation is successful. We begin with the demand side, as a way of motivating the supply side issues. We examine the potential for rural IT use, both from supply and demand perspectives. On the supply side, we examine the technical and organizational issues that arise for delivering IT-based services to rural populations in India. On the demand side, we examine the potential benefits that IT can bring to these populations, if the implementation is successful. We begin with the demand side, as a way of motivating the supply side issues.

Reductions in communication and transaction costs are particularly beneficial where they can allow new markets to develop, in the sense that existing goods and services, otherwise restricted to urban areas, or to a very limited segment of rural populations, now can be offered to broad cross-sections of the rural population. Examples include financial services, particular types of education, health services, long distance communications, and expertise on a range of production-related decisions.

3.7 ROLE OF RBI FOR IT PENETRATION IN RURAL AREAS
In this section we will trace the development of banking services to the rural areas.

3.7.1 Background
The nation has been experimenting with various alternatives to reach the banking services to rural areas primarily credit by several initiatives. In this regard, early initiatives were taken by building an institutional framework beginning with the focus on the cooperative credit institutions followed by the nationalisation of major domestic banks and later the creation of the Regional Rural Banks (RRBs). Simultaneously, several measures were taken including establishment of the Lead Bank Scheme, directed lending for the Priority Sectors, banking
sector’s linkage with the Government sponsored programmes targeted at the poor, Differential Rate of Interest Scheme, the Service Area Approach, the SHG-Bank linkage programme and introduction of the Kisan Credit Card. Given the social responsibility to reach the rural areas and the poor, the banks and co-operative institutions with guidance from the Reserve Bank of India (RBI), the National Bank for Agriculture and Rural Development (NABARD) and other apex level institutions made serious efforts to meet the needs and demands of the rural sector. As a result, the outreach of Indian banking system has seen rapid growth in rural areas. So far, all the Scheduled Commercial banks (SCBs) including RRBs are providing service to the rural areas. It can be assessed that the informal/non-institutional finance was gradually declining during the 1960s, was very nearly broken during the 1970s, with the institutional agencies making steady inroads into the rural scene. The share of institutional credit agencies in the outstanding cash dues of the rural households at the all-India level increased from 29 per cent in 1971 to 61 per cent in 1981 and then the pace of increase was arrested rising to 64 per cent in 1991. During the following decade, the share declined by about 7 percentage points and reached 57 per cent in 2002. It seems that credit cooperatives, commercial banks, and other formal financial sector programmes in rural areas have not displaced informal sources of credit, altogether. The 2002 AIDIS survey revealed that 43 per cent of rural households continue to rely on informal finance, which includes professional moneylenders, agricultural moneylenders, traders, relatives and friends, and others. (All India Debt and Investment Survey, 1991 and Reserve Bank of India www.rbi.org accessed on 12th November, 2013).

However, there are continuous wide gaps in the availability of banking services in the rural areas although the Primary Agriculture Credit Societies (PACS) with about one lakh outlets have a deep and wide presence in rural India. Their impact in terms of extension of deposit and credit products has not only been minimal but concentrated in a few states only. The decline in productivity of the rural branches of the commercial banks, fragility of the co-operative credit structure and weakness of RRBs witnessed since early the 90s, have further accentuated the problem of inaccessibility of banking services for a large part of the rural population. Furthermore, as the banking sector has shown propensity towards the larger size accounts, the number of loan accounts of small borrowers with credit limit range of less than Rs.25,000/- has decreased from 5.88 crore in 1991 to 3.69 crore in 2003.
3.7.2 Role of RBI and Need for IT penetration in rural areas

The use of technology in expanding banking has been a key focus area of the Reserve Bank. Technological innovation not only enables a broader reach for consumer banking and financial services, but also enhances its capacity for continued and inclusive growth. An important development in the formal segment of the rural financial markets is the growing significance of non-banking financial companies, in particular, hiring, purchasing and leasing operations. They also finance traders of agricultural inputs and output. The NBFCs have only recently been brought under the regulatory regime of RBI. While their importance is recognised in financing diversified rural agriculture, its extent and scope of operations has not been adequately researched.

Table 3.1 Financial Inclusion- Phases and Steps Taken

<table>
<thead>
<tr>
<th>Process : Phases</th>
<th>Steps Taken</th>
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</thead>
<tbody>
<tr>
<td>1. 1950-70: Consolidation of the Banking Sector and Facilitation of Industry and Trade</td>
<td>Cooperative movement</td>
</tr>
<tr>
<td>2. 1970-90: Focus on channelling of credit to neglected sectors and weaker sections</td>
<td>Nationalization of Banks Setting Up of State Bank of India</td>
</tr>
<tr>
<td>3. 1990-2005: Focus on strengthening the financial institutions as part of financial sector reforms</td>
<td>Lead Bank Scheme RRBs</td>
</tr>
<tr>
<td>4. 2005 onwards: Financial inclusion was explicitly made as a policy objective</td>
<td>Service area approach Self Help Groups</td>
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Source: Author

Steps Taken by RBI - Credit Delivery Focus

- Public sector banks in India have been formulating Special Agricultural Credit Plans (SACP) with a view to achieve distinct and marked improvement in credit flow to agriculture from 1994-95 onwards.
- The Kisan Credit Card (KCC) scheme was introduced from 1998-99 onwards.
Credit innovations like microfinance have also evolved as socially significant and commercially attractive models of credit delivery.

The early 1990s saw the emergence of the concept of Self Help Group.

The pilot programme started by NABARD in 1992 and actively supported by the Reserve Bank saw the banks taking a key interest in promoting the programme.

The SHG-Bank linkage programme has so far become the largest microfinance programme in the country.

As on March 31, 2008, a total of 3.6 million SHGs with a total outstanding bank loan of Rs.17,000 crore were credit linked with the banks.

As on March 31, 2008, a total of 5.0 million SHGs were having savings bank accounts with the banking system of which the commercial banks had the maximum share (56.0 per cent) followed by the RRBs (28.0 per cent) and cooperative banks (16.0 per cent).

**Steps taken by RBI - Other Measures**

1. Facilitating Policy Stance –
   a. The Annual Policy Statement for the year 2005-06 states that RBI would implement policies to encourage banks, which provide extensive services while dis-incentivising those, which are not responsive to the banking needs of the community, including the underprivileged.
   b. Banks were urged to review their existing practices to align them with the objective of financial inclusion

2. No-Frill Accounts

3. Overdraft in Saving Bank Accounts

4. Relaxed KYC Norms

5. BC / BF Model -
   a. Banks were permitted to utilise the services of intermediaries in providing financial and banking services through the use of business facilitator and business correspondent (BC) models from January 2006 onwards.
   b. A Working Group constituted to examine the experience of date of the BC model and suggest measures, to enlarge the category of persons that can act as BCs, keeping in view the regulatory and supervisory framework and consumer protection issues.

6. KCC / GCC Guidelines.
7. Liberalised Branch Expansion.
8. Introducing technology products and services.
   a. Pre-Paid cards, Mobile Banking etc.
10. Financial Literacy Programmes.
11. Creation of Special Funds.
    - 100% Financial Inclusion – So far, 431 districts have been identified by SLBCs for 100 per cent financial inclusion and 204 districts in 18 States and 5 Union Territories have reported having achieved the target as on March 31, 2009.

By looking at the banks expansion and products, one can come to the conclusion that the need for IT penetration is inevitable. The following section further discusses the IT penetration in banks and its roles.

**Check Your Progress Exercise 1**

**Note:** i. Use the space given below to answer the question.
    ii. Compare your answer with the one given at the end of this unit

1. Define Technology

_____________________________________________________________________
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_____________________________________________________________________

2. What is the role of RBI for IT penetration in rural areas?

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3.8 Nature of Hi-Tech Banking Technology

We should recognise that the role of banks, which is central to formal credit in rural areas, is fast changing. Many non-banks are providing avenues for saving funds and providing investment options. Banks themselves are undertaking non-traditional activities. Banks are also becoming what we called as universal banks and are already providing a range of financial services such as investments, merchant banking and even insurance products. Similarly, non banks are also undertaking banking activities. At present, these are mostly confined to urban areas in India, but they will sooner than later spread to rural areas.
Another development relates to the gradual undermining of the importance of branches of banks. The emergence of new technology allows access to banking and banking services without any barriers to access the bank premises by the customer. The concept of Automated Teller Machines (ATMs) is the best example. At present, ATMs are city and semi-urban oriented in our country. It is inevitable that ATMs soon will be widely used, in rural areas.

The technology-led process is leading us to what has been described as virtual banking. The benefits of such virtual banking services are manifold. Firstly, it confers the advantage of lower cost of handling a transaction. Secondly, the increased speed of response to customer requirements under virtual banking vis-à-vis branch banking can enhance customer satisfaction. Thirdly, the lower cost of operating branch network along with reduced staff costs leads to cost efficiency.

Fourthly, it allows the possibility of improved quality and an enlarged range of services being available to the customers more rapidly and accurately at his convenience. It may not be possible to deny these facilities to rural areas in our country since, if banks do not provide them, some non-banks will do it.

Another development relates to the increasing popularity of credit cards, which are bound to reach rural areas. Many Public Sector Banks are already in credit card business. In fact, multipurpose cards could be a facility that IT could usher in for rural population. The potential can be illustrated with SMART cards. SMART cards – which are basically cards using computer circuits in them thereby making them ‘intelligent’ – would serve as multipurpose cards. SMART cards are essentially a technologically improved version of credit and debit cards and could be used also as ATM cards. They could be used for credit facilities at different locations by the holders. SMART cards could also be used for personal identification and incidentally for monitoring credit usage.

It is essential to have uninterrupted power supply and telecom connectivity to rural areas for the spread of virtual-banking and SMART cards facilities. The banks could, under such assured supply conditions acquire the required banking software and also put in place the necessary networking for providing anywhere banking facilities in rural and semi-urban areas also.

Indian banks will have to get interested in providing diversified range of financial products and services along with those that they are already providing, by using technological advances like banks in other parts of the world. As the level of education in rural areas rises and affluence spreads, customers will start seeking efficient, quicker and low cost services.
As the financial system diversifies and other types of financial intermediaries become active, in rural areas, savers would turn towards mutual funds or the savers themselves decide to deploy part of their financial surpluses into equities and debentures as also other fixed income securities. The bulk of bank deposits in the rural areas are currently longer term deposits and as these come down; there would be a distinct shortening of the average maturity structure of bank deposits with an increase in asset liability mismatches. The spreads that the banks now enjoy will progressively shrink making it more difficult for them to survive. As more and more intermediaries enter rural areas with greater level of technology, traditional banking business will come under pressure. In order to face the competitive pressures being exerted by the recently set up market savvy banks, banks which have extensive branch network in most of the existing and potential rich rural and semi-urban areas may have to provide such services.

3.9 NETWORKING OF BANKS THROUGH BANKING INFORMATION TECHNOLOGY SERVICES (BITeS)

3.9.1 The heightened role of Technology in delivering business objectives

In order to make banks run smooth and risk-free as possible, but financially successful too, appropriate consideration must be given to implementing innovative practices and processes, which are enabled by similarly innovative technologies. In the post-financial crisis world, technology plays an intrinsic and heightened role in delivering the aforementioned operational objectives.

There are several factors attributed to India’s high growth in the recent period - improved productivity, growing entrepreneurial spirit, and higher savings, to name the most important. But one factor usually goes unacknowledged – that is financial intermediation. It is believed that improvement in the quantum and quality of financial intermediation ranks along with other factors mentioned above as a key growth driver. And one of the factors that drove the improvement in the quantum and quality of financial intermediation is more widespread and more efficient use of IT.

IT also facilitates the introduction of new delivery channels - in the form of Automated Teller Machines, Net Banking, Mobile Banking and the like. Further, IT deployment has assumed such high levels that it is no longer possible for banks to manage their IT implementations on a stand-alone basis with IT revolution, banks are increasingly interconnecting their computer
systems not only across branches in a city but also to other geographic locations with high-speed network infrastructure, and setting up local area and wide area networks and connecting them to the Internet. As a result, information systems and networks are now exposed to a growing number. Technology Products are as follows:


Check Your Progress Exercise 2

Note: i. Use this space given below to answer the question.

ii. Compare your answer with the one given at the end of this unit

1. Name a few Hi Tech Banking Technologies available

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2. What are the Technology products available for Banking network?

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3.10 BANKING INFORMATION TECHNOLOGY SERVICES- A TOOL FOR RURAL AND URBAN GROWTH

Let’s briefly review the current status of IT in the financial sector. More than most other industries, banks and financial institutions rely on gathering, processing, analyzing and providing information in order to meet the needs of customers. Given the importance of information in banking, it is not surprising that banks were among the earliest adopters of automated information processing technology. The visible benefits of IT in day-to-day banking in India are quite well known. There’s ‘Anywhere Banking’ through Core Banking Systems, ‘Anytime Banking’ through new, 24/7/365 delivery channels such as Automated Teller Machines (ATMs), and Net and Mobile Banking. In addition, IT has enabled the efficient, accurate and timely management of the increased transaction volume that comes
with a larger customer base. It has also facilitated the movement from class banking to mass Banking.

We have also seen developments in the communication network and messaging system in India. THE This institute, the Institute for Development and Research in Banking Technology (IDRBT), set up by the RBI in 1997, implemented the Indian Financial Network – the INFINET – a ‘one-of-a-kind’ initiative for the banking sector aimed at sharing expensive IT resources so as to achieve economies of scale. One of IDRBT’s notable achievements has been the implementation of Public Key Infrastructure (PKI) - based electronic data transfer with very high security levels. The Institute also developed a messaging standard called Structured Financial Messaging System (SFMS) with security features superior even to SWIFT. Today INFINET has migrated to the latest MPLS technology in an effort to provide a state-of-the-art network.

IDRBT also set up the National Financial Switch for interconnecting ATMs. It’s interesting to note that at the turn of the century, there were only about 4000 ATMs in all of India, and today there are more than ten times this number, and all of them interconnected. These changes have enabled RBI to take two major steps in this area in recent months. First, ATM card holders can use any ATM in the country irrespective of which bank issued them the card; and second, use of ATMs has become free of charge since April 1, 2009. So, now a customer can go to any ATM and withdraw money free of charge regardless of which ATM is being used and which bank issued the card.

IDRBT also spearheaded research in the field of banking technology and has been the centre for excellence in training in this area. Over the years, the role of the institute has extended beyond research to providing various services to the banking community. Now, a committee headed by Dr C Rangarajan is looking into redefining IDRBT’s role. Information technologies and the innovations they enable are strategic tools for enhancing the value of customer relationship. They reduce the costs of financial transactions, improve the allocation of financial resources, and increase the competitiveness and efficiency of financial institutions. For instance, the potential of IT in extending banking services to under-served markets in rural and semi-urban areas is enormous. The use of Smart Card technology, mobile ATMs, coverage of post offices under electronic payments networks in out-of-reach areas – all could play significant roles in providing financial services to more people and thereby serve financial inclusion.
India is experiencing an explosion in the use of mobile communication technology. And this is a development that the financial sector can exploit. Mobile phone users belong to all strata of society, spread across metropolitan centres, towns and villages. Banks can take advantage of this expanded reach of telecom if they provide services through this medium. The phone’s integrated chip can function as a multi-application smart card, thus making banking services available to virtually every mobile phone owner. This holds substantial promise as the delivery vehicle of the future: there is huge potential and an exciting opportunity. However, the expansion of such capabilities must be accompanied by a minimum level of essential security features and continued compliance with established covenants relating to privacy of customer transactions.

### 3.11 ROLE OF INSTITUTIONS (IIBF/ IBA) FOR FORMATION/ PARTNERSHIP OF NETWORK FOR BANKING INFORMATION TECHNOLOGY SERVICES ACTIVITIES

The role that financial Institutions like IIBF, IBA, etc are very critical as they form the basis for understanding of banking information technology for the coming generations and it paves way for the advancements in the industry.

An economy that begins with a lack of financial institutions will thus suffer from a low savings rate. This low savings rate will lead to a low level of investment. Finally, this low level investment will result in slow or no economic growth, further retarding the growth of financial institutions. Then the pattern repeats its self.

The above explains why the financial institutes help and how critical they are in a growing economy.

### 3.12 FUTURE IT ADVANCEMENTS- UID, CORE BANKING ETC

The potential of IT for the near future also includes:

- Enabling differentiation in customer service;
- Facilitating Customer Relationship Management (CRM) based on available information, which can be stored and retrieved from data warehouses;
- Improving asset-liability management for banks, which has a direct bearing on the profits of banks;
- Enhancing compliance with anti-money laundering regulations; and
- Complying with Basel II norms.

Further advancements that are seen in the IT sector is the UID. Prime Minister, Mr Manmohan Singh handed over the first of the Aadhaar cards at T embhli village in September 2010. The Unique Identification Authority of India (UIDAI) has endeavoured a mammoth project to provide Indian residents with a unique 12-digit identification number that will serve multi purposes.

Yet another concept of IT that is prevalent in the Banking Industry is that of the Core Banking Solutions. Core banking solutions are banking applications on a platform enabling a phased, strategic approach that is intended to allow banks to improve operations, reduce costs, and be prepared for growth. Implementing a modular, component-based enterprise solution facilitates integration with a bank's existing technologies. An overall service-oriented-architecture (SOA) helps banks reduce the risk that can result from manual data entry and out-of-date information, increases management information and review, and avoids the potential disruption to business caused by replacing entire systems.

Core banking solutions is new jargon frequently used in banking circles. The advancement in technology, especially Internet and information technology has led to new ways of doing business in banking. These technologies have cut down time, working simultaneously on different issues and increasing efficiency. The platform where communication technology and information technology are merged to suit core needs of banking is known as core banking solutions. Here, computer software is developed to perform core operations of banking like recording of transactions, passbook maintenance, and interest calculations on loans and deposits, customer records, balance of payments and withdrawal. This software is installed at different branches of bank and then interconnected by means of communication lines like telephones, satellite, internet etc. It allows the user (customers) to operate accounts from any branch if it has installed core banking solutions. This new platform has changed the way banks are working.
Check Your Progress Exercise 3

Note: i. Use this space given below to answer the question.

ii. Compare your answer with the one given at the end of this unit

1. What is the role of Institutions in improving the networking of Banking Technology?

___________________________________________________________________________

2. What is Core Banking system and how does it help?

___________________________________________________________________________

3.13 FUTURE POSSIBILITIES
A list of future possibilities, many of which are already technically possible, can illustrate how banking might be radically different than it is today:

• Information itself will emerge as a new form of currency, and the industry will need to support this new paradigm, with the ability to store much more data than simple financial transactions and assets;

• Cloud banking will enable “micro credit unions” and other small, context-specific financial services with Google-style data center container, banking anywhere;

• Non-banks also have opportunities to play utility service provider roles in areas where banks no longer need to compete;

• Banks could become the repository of large datasets and the processing models to extract insights. Transparent banking and early warning systems is also place significant position in future;

• Opportunities exist to create privacy preserving techniques where security is no longer an issue since it is embedded into the process and data at the lowest level.

• International retail banking will become more important. Even as telecommunications reduce the need for physical travel, it increases opportunity for cross-national collaboration and commerce. The industry therefore must allow business to be conducted seamlessly and electronically across international frontiers.

• Opportunities exist to become the trusted centre point for opt-in marketing, promotion, and advertising.

• Dramatic reduction in the use of cash and the emergence of new virtual currencies is likely to occur. Systems support thousands of currencies, this including forms of loyalty points but other variations might be created.

• Nano-banking, micro-payments and macro-banking router requirements create still other opportunities that allow for complete integration with total autonomy. All messages become part of the repository for analysis.

• Total life-long financial management for individuals, the household, and the community, cost consequence tracking, beyond budgeting; behavioural decision making is another area of opportunity.
• Healthcare-related banking and DNA storage may become opportunities. This would extend beyond secure medical records to managing processes to help advice individuals on daily health management.

### 3.14 SUMMING UP

In this Unit, we have discussed existing scenario in banking sector with regard to inclusive fiancé and how Information Technology will enable the banks to provide services to the rural areas. We have also discussed existing technologies used by the bank as well as technologies may come up in future for banking transactions.

### 3.15 GLOSSARY

**IDRBT-Institute for Development and Research in Banking Technology**: During the first phase of reforms in the Indian Financial Sector, a need was felt to develop an Institute of Higher Learning, which would also provide the operational service support in Information Technology to Banks and Financial Institutions. The foundation for induction of Computer Technology in the Indian Banking Sector was laid by Dr. Rangarajan Committee's two reports in the years 1984 and 1989. Both the reports strongly recommended computerisation of banking operations at various levels while suggesting the appropriate architecture.

In the year 1993, the Employees’ Unions of Banks signed an agreement with Bank Managements under the auspices of Indian Banks’ Association [IBA]. This agreement was a major breakthrough in the introduction of computerised applications and development of communication networks in Banks.

In the following two years, substantial work was done and the top managements realised the urgent need for training, research and development activities in the area of Banking Technology. Banks and Financial Institutions started setting up Technology-based training centres and colleges. However, a need was felt for an Apex Level Institute, which would be the Brain Trust for Banking Technology and Spearhead Technology Absorption in the Indian Banking and Financial Sector.

In the year 1994, the Reserve Bank of India formed a committee on "Technology Upgradation in the Payment Systems". The committee recommended a variety of payment applications which can be implemented with appropriate technology upgradation and
development of a reliable communication network. The committee also suggested setting up of an Information Technology Institute for the purpose of Research and Development as well as Consultancy in the application of technology to the Banking and Financial sector of the country. As recommended by the Committee, the Institute for Development & Research in Banking Technology [IDRBT] was established by the Reserve Bank of India in March 1996 as an Autonomous Centre for Development and Research in Banking Technology.

3.16 ANSWER TO CHECK YOUR PROGRESS EXERCISE

Check your Progress Exercise 1

1. Technology is the innovation and making, use of knowledge, tools, techniques, crafts, systems or methods of organization in order to solve a problem or serve for purpose. The term can either be applied generally or to specific areas: examples include construction technology, medical technology, and information technology.

2. The nation has been experimenting with various alternatives to reach the banking services, primarily credit, in rural areas through several initiatives. Early initiatives in this regard were taken by building an institutional framework beginning with the focus on the cooperative credit institutions followed by the nationalisation of major domestic banks and later the creation of the Regional Rural Banks (RRBs). Simultaneously, several measures including establishment of the Lead Bank Scheme, directed lending for the Priority Sectors, banking sector's linkage with the Government sponsored programmes targeted at the poor, Differential Rate of Interest Scheme, the Service Area Approach, the SHG-Bank linkage programme and introduction of the Kisan Credit Card were taken. Given the social responsibility to reach the rural areas and the poor, the banks and co-operative institutions with guidance from the Reserve Bank of India (RBI), the National Bank for Agriculture and Rural Development (NABARD) and other apex level institutions made serious efforts in meeting the needs and demands of the rural sector. As a result, the outreach of Indian banking system has seen rapid growth in rural areas.

Check Your Progress Exercise 2

1. The emergence of new technology allows access to banking and banking services without physical direct recourse to the bank premise by the customer. The concept of Automated Teller Machines (ATMs) is the best example.
Another development relates to the increasing popularity of credit cards, which are bound to reach rural areas. Many Public Sector Banks are already in credit card business. In fact, multipurpose cards could be a facility that IT could usher in for rural population. The potential can be illustrated with SMART cards. SMART cards – which are basically cards using computer circuits in them thereby making them ‘intelligent’ – would serve as multipurpose cards

2. The top ten Banking Technology that improves in developing banking network technology are as per below:
   (1) Net Banking; (2) Credit Card Online; (3). One View; (4). InstaAlerts; (5). Mobile Banking; (6). NetSafe; (7). e-Monies Electronic Fund Transfer; (8). Online Payment of Excise & Service Tax; (9). Phone Banking; (10). Bill Payment

Check Your Progress Exercise3

1. The role that financial Institutions like IIBF, IBA, etc are very critical as they form the basis for understanding of banking information technology for the coming generations and it paves way for the advancements in the industry. An economy that begins with a lack of financial institutions will thus suffer from a low savings rate. This low savings rate will lead to a low level of investment. Finally, this low level investment will result in slow or no economic growth, further retarding the growth of financial institutions. Then the pattern repeats it’s self. The above explains why the financial institutes help and how critical they are in a growing economy.

2. Yet another concept of IT that is prevalent in the Banking Industry is that of the Core Banking Solutions. Core banking solutions are banking applications on a platform enabling a phased, strategic approach that is intended to allow banks to improve operations, reduce costs, and be prepared for growth. Implementing a modular, component-based enterprise solution facilitates integration with a bank’s existing technologies. An overall service-oriented-architecture (SOA) helps banks reduce the risk that can result from manual data entry and out-of-date information, increases management information and review, and avoids the potential disruption to business caused by replacing entire systems.
3.17 REFERENCES


http://www.sksindia.com/


http://www.bbc.co.uk/news/world-south-asia-11997571


3.18 QUESTIONS FOR REFLECTION AND PRACTICE

1. Discuss the pros and cons of IT enabled banking system in India.