

Digital Transformation of Indian Economy; Milestones and Challenges

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Abstract

India is leading the world in the digital revolution. Digitalization is recognized as the basis of all activities in the economy. Digital India has empowered people by making technology more accessible. The digital revolution is regarded as the development of better tomorrow. India's government has been taking active participation in bringing digitalization to the Indian economy by various measures. India is experiencing digital developments in areas like electronic payments, financial inclusion, digital inclusion, rural development, online education health, online agricultural market, etc. This paper briefly explains the transformation of the economy to digitalization in various sectors and the challenges and various opportunities in the future in the field of digitalization.

Keywords: Digital India, digitalization, digital illiteracy, infrastructure. education, MOOCs, NEFT, Internet banking, UPI, Artificial Intelligence (A I), Make in India Campaign, Agri Stack

Introduction

Digitalization is taking over the entire world. all countries are adopting digitalization in all sectors to foster economic development. India is the fastest-growing economy. India's transition to digitalization started on 1st July 2015 when the concept of digital India was first time introduced by the honorable Prime Minister Narendra Modi. Digital India is a flagship program of the government of India with the objective of transforming Indian society into a digitally empowered and knowledgeable economy. The main objectives are connecting rural areas with high-speed internet networking, providing digital infrastructure to the public, empowering citizens with the use of digital technologies, and increasing the digital literacy of citizens in India. India's digital economy grew 2.4 times faster than the Indian economy. Digitalization has been introduced to ensure easy access of government services to citizens electronically and enhancing digital empowerment in society. it aims to provide broadband facilities to gram panchayats and to provide Wi-Fi facilities in all educational institutions. The main objectives of digital India are:

- ❖ To facilitate e-governance and to provide e-commerce facilities to all citizens of India including farmers and people living below the poverty line.
- ❖ To reduce the import and increase the domestic production of digital equipment.
- ❖ To develop improved cyber security.
- ❖ To provide broadband connections in all schools and universities throughout the country.
- ❖ Online national agricultural market to enable the farmers to sell their agricultural products online.
- ❖ To connect 2.5 lakhs of rural sectors through optical fiber connections. Achievements of India in the digital transformations in the field of banking sector.

India introduced a united payment interface (UPI) to enable people to make transactions online which gives emergence to mobile banking. India also contributes considerable growth of digitalization in the education sector also. Massive open online courses are started in universities to enable students to join courses from anywhere in the world, and smart classrooms are started in schools and colleges to teach students with the help of led screens and projectors. Digi lockers are introduced for the benefit of students. India initiated Bharath Net telecommunication connects 2.5 lakh rural sectors through optical fiber.

Union budget of 2023 gives due importance to Artificial Intelligence. The proposal has been taking the budget to start a center of excellence for artificial intelligence with the motto of making artificial intelligence for India, making artificial intelligence work for India. India also proposing to introduce a digital library to create an information revolution in the economy. It is also proposed to set up 100 labs to develop 5G applications. Agri stack is proposing to introduce for providing a unified platform to create end-to-end services across the agriculture food value chain to customers. It is decided to bring MSME developments in rural areas to generate jobs. India is an economy where most of the income is derived from agriculture and taxation. digital inclusion is taken as the main agenda of India's G20 presidency. digital inclusion is the balanced growth of digital access to all segments of society. Kerala is the first state in India to achieve the objective of full digitalization in the banking sector. It is expected that with the development of artificial intelligence efficiency of industries and companies will increase which will help in boosting customer demand and generating more income and employment opportunities.

Objectives of Study

- ❖ To make a detailed analysis of the transformation of the Indian economy to a digital economy.
- ❖ To know about the different programs adopted by the government for the digital transformation of the economy.
- ❖ To suggest measures to increase digital literacy in the Indian economy.
- ❖ To make a detailed analysis of the digital growth rate of the economy from 2015 to 2023.

Statement of the Problem

Digitalization in the Indian economy is developing at a faster rate than any other developing economy in the world. With the creation of Artificial intelligence, India aims the overall industrial development that reduces unemployment, inequalities in income and wealth, and improves the standard of living. India set the target of becoming a developed nation by 2047. Digital inclusion is needed in more sectors of the economy. As a developing economy, India is facing a lot of issues like poor infrastructure, digital illiteracy, population density,

etc. The present study is conducted to understand what are the steps taken by the government to facilitate the digital transformation of the economy and what steps should be taken to achieve the objective of digital inclusion.

Research Methodology

The research design used for the study is descriptive and analytical in nature. The data used for the study is the secondary data collected from different sources like journals, articles, and websites.

Review of Literature

At present, a lot of studies have been conducted in the field of India's transformation to a digital economy. Some of them are:

Dr. Saikat Gochali (2020), conducted a study on digitalization and its impact on the Indian economy and discusses digitalization and its impact on the Indian economy particularly in the field of Agriculture, MSME, manufacturing, and service sectors. The study found that MSME is very key to the Indian economy facing the issue of financial access and there occurs a favorable shift of manufacturing industries towards digitalization.

Ms. Amita Rani (2021), conducted a study on the topic of the digital economy in India's opportunities and challenges discusses the concept of digital India programs and its significance and the problems and challenges faced by India in its implementation and concluded that for the success of digital India project massive awareness program and maximum digital connectivity with minimum cyber security risk is needed.

Results; Digitalization in Different Sectors of Indian Economy

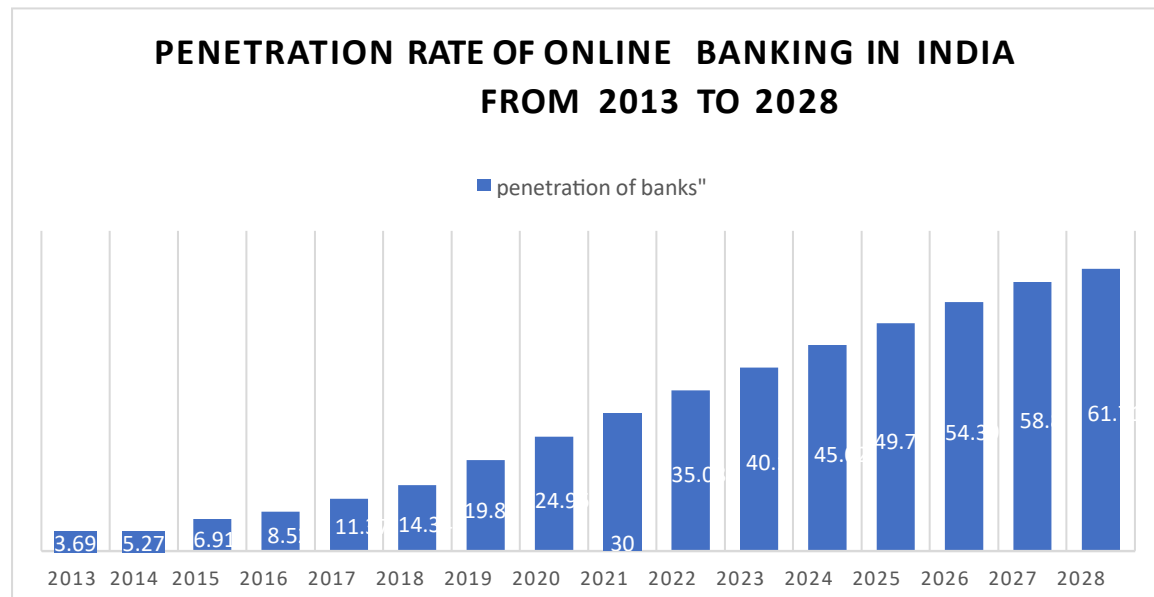
Banking Sector

Digital banking means conducting banking transactions online and the customer's physical presence is not required for conducting banking transactions. Banking is done through digital platforms. Banking services can be accessed through digital platforms. Banking services can be accessed through electronic devices from anywhere in the world. The digitalization of banking in India has been started four decades when the RBI appointed a committee under the chairmanship of Dr. Rangarajan to study the opportunities of computerization in the field banking sector. Thereafter commercial banks and private sector banks started using computers for storing transactions instead of traditional bookkeeping.

ATM, CDM, Debit Cards, Credit Cards, Net Banking, National Electronic Fund Transfer, etc. started by banks to facilitate easy settlement of transactions. The government of India introduced United Payment Interface (UPI), a banking system that allows people to transfer funds very easily from one bank to another bank. It gives emergence to mobile banking in India. Banks are looking to provide a fast, accurate, and quality experience of banking to customers. Digitalization becomes one of the top priorities of banks in India. Kerala is the first state in India to achieve a hundred percent digitalization of banks in India.

Penetration rate of online banking in India from 2013 to 2028

The chart table shows the penetration rate that is the rate of entry of new banks in the digital banking sector from the year 2013 to 2023 and the expected rate of entry of banks to the field of digitalization.



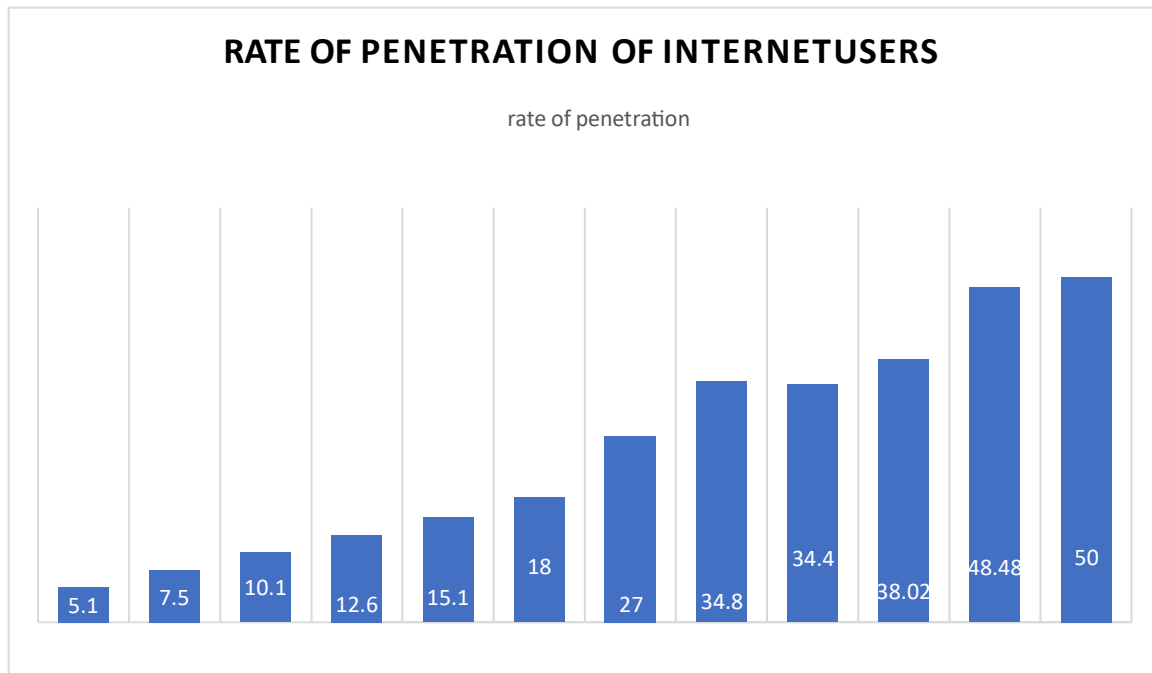
(Source; secondary data)

From the above chart, we can understand that in the year 2013, only 3.69 percent of total banks entered the pace of digitalization. Up to the year 2017, new entry of banks to the field of digitalization was increasing at lesser rate. After that, we can see a deep increase in digitalization in the field of the banking sector from the year 2019 to 2023. It's expected that the digitalization of the banking sector will increase to 61.7 percent in the year 2028.

Educational Sector

The digitalization of the educational sector focuses on the transition of traditional teaching methods to more interactive learning with the use of audio-visual communications. State and central governments are closely moving towards the betterment of students and society by emphasizing quality education. National Education Policy (NEP) introduced in 2020 by the central government aims at the holistic development of students. Digitalization measures taken in the field of education are smart classrooms replacing traditional blackboards with LED screens and projectors and teaching is made with the use of audio-visual communication which helps students to memorize lesson easily than traditional lecturing methods. Online teaching has been adopted by most educational institutions during the time of covid. Massive Open Online Courses are started at the university level enabling students to complete their studies online.

The below chart shows the internet penetration rate from 2009 to 2020



This chart analyses the rate of entry of users to the Internet from 2009 to 2020. Penetration rate of internet users increased to 10 times within the period from 2009 to 2020

Agricultural Sector

Digital technologies such as artificial intelligence, remote sensing, machine learning, and blockchain are transforming agricultural modernizing operations. Ministry of Agriculture and Farmers Welfare developed the following digital applications to boost agricultural production in India.

National Agricultural Market

It is launched in 2016. It provides a platform where farmers can sell their agriculture products directly without the involvement of any intermediaries.

Direct Bond Transfer (DBT) Central Agri Portal

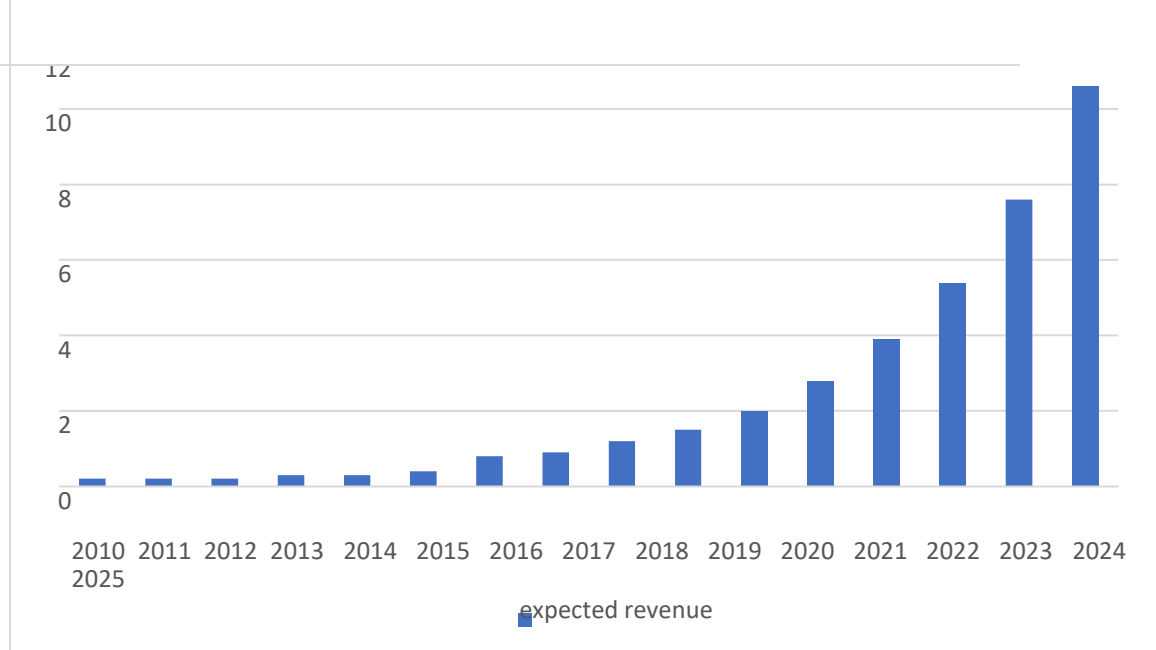
It was launched in 2013, a central portal that helps farmers to purchase modern farm machinery through subsidies from the government.

Agri stack

The government of India proposing to introduce an Agri stack a unified platform to provide services across the agricultural food value chain to farmers.

Digitalization in the Health Sector

Digitalization efforts of India in the field of health care include cloud-enabled data management platforms, telemedicine, artificial-assisted medical devices, and blockchain for some electronic health records.

DIGITALIZATION IN THE HEALTH SECTOR

(Source: Secondary Data)

Digitalization in the health sector is growing at a faster rate from 2019 to 2023 and it is expected to contribute 10 billion in 2025.

Digitalization in Public Infrastructure

Smart cities, broadband highways, around 120,000 post offices in rural areas are connected electronically, more than one lakh gram panchayats in India are connected through the Bharath Networking system, digitalization of rural areas through the distribution of solar lighting, LED assembly units, etc.

Digital Transformation of Indian Economy; Challenges

India is an economy where most of the income is derived from agriculture and taxation. Around 40 percent of the Indian population is living below the poverty line. As India is the second largest populated country in the world, there are huge imbalances in demand and supply of goods and services, and India is experiencing a poverty rate of 21 percent. India's rural population belongs to 64.61 percent. Even 2 percent of the Indian population does not have access to electricity. India's obstacles to digital inclusion are the use of digital services like computers, smartphones, and the Internet. Problems of the Indian economy towards digitalization are;

1. Poor Infrastructure

More than 50 percent of the Indian population doesn't have internet access. The majority of Indian people are not using the internet. It may be because of either low coverage of the internet or maybe digital illiteracy or priority of needs. Only a small portion of households in India have access to an internet connection. Most of the private and public broadband services have limited access to rural areas. 8.6 percent of the total population of India are living in tribal areas. They are very struggling to earn their livelihood. They are experiencing high poverty,

extreme hunger, lack of nutrition and physical and mental health, lack of adequate medical services, non-availability of proper shelter, transportation services, education facilities, etc. Digitalization in these sectors is a challenging role for the Indian economy.

2. Digital Illiteracy

The digital literacy rate is only 48 percent in India. That means the majority of people in India are digitally illiterate. It became a hindrance to India's growth towards digitalization. Most of people above 50 years of age are basically digitally illiterate even though they are using smartphones. They are not aware of making online transactions. This will affect the development of India towards digitalization.

3. Low internet speed

The high cost of the spectrum to the internet service providers causes reduced internet speed. Growing users of the internet also reduced the speed of the internet.

Digitalization; Future of Indian Economy

India proposing to introduce Skill India digital platform to enable the unemployed to become entrepreneurs and thereby generate employment opportunities. Union Budget 2023 is giving due importance to basic infrastructure development in the economy. Artificial intelligence is added to part of the Make in India campaign, for this artificial center of excellence will create in three parts of India. Various applications will be developed for different sectors like agriculture, health, education, etc. with the help of these centers. Proposed to introduce National Digital Library and also to establish libraries in panchayats and ward level to provide access to National Digital Library. For the encouragement of electric vehicles GST for electric vehicles was reduced from 12 percent to 5 percent.

Discussions

Digital transformation in the Indian economy is growing at a faster rate. The study finds out digitalization in the field of banking, agriculture, education, health, and public infrastructure make a significant contribution towards the digital transformation of the Indian economy. The study pointed out reasons for the growth of the country towards digitalization. Digital literacy can be improved by conducting free webinars at village levels about the usage and benefits of digitalization in agriculture and farming. Webinars should also be given to school teachers to learn and develop smart classrooms. Government should take initiatives for better investment in basic infrastructure and broadband connectivity in villages. Subsidized internet services should be given to people living below the poverty line and in rural areas. Digital literacy training should be given to all citizens above 50 years of age. Priority goals should be introduced in tribal areas and should provide the basic infrastructure that's included in the agenda of budget 2023. Union budget 2023 is giving emphasis on more investments in MSME in rural areas for promoting entrepreneurship and subsequent employment generation. The Artificial Intelligence Make in India Campaign will increase the future of India towards the digitalization transition of India from a developing economy to a developed economy by 2047.

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