

Impact of Digitalization on Indian Economy: An Analysis of Digital India Program's Contribution to Economic Growth

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Abstract

This research paper investigates the influence of the Digital India campaign on the Indian economy by analyzing its tenets and looking at how digitalization affects specific industries. The report points out problems and makes suggestions for solutions that may be used in the future. Digitalization has the potential to lower costs and boost production, productivity, and employment. But as the Digital India Program is still in its infancy, more information is needed to assess its potential economic effects. The paper contends that in order to execute the program for economic development at its best, its effects on the economy must be taken into account. Overall, the research shows how digitization has the potential to change the Indian economy, but in order to fully reap its rewards, the hurdles must be resolved.

Keywords: Digital India campaign, Indian economy, digitalization, implementation

Introduction

The Indian government's ground-breaking Digital India Initiative was unveiled on July 1, 2015. By giving residents access to electronic and virtual connection, it aims to enhance the nation's digital infrastructure. In order to provide even the most vulnerable segments of society with access to government services that are given more effectively and efficiently via electronic methods, the emphasis is on linking rural regions to metropolitan centers through network devices and services. The initiative intends to strengthen digital infrastructure, boost access to network devices and cutting-edge digital technologies, and raise population digital literacy in order to realize this objective. Additionally, these actions will result in more job possibilities. There must be a big technological improvement for the nation to become digitally linked. The initiative seeks to establish a digitally empowered economy that takes use of digitalization's advantages.

The Indian economy has grown rapidly, primarily as a result of factors including industrialization and automation, a rising population that expands the market, and fewer regulations and entry barriers that promote commerce. Agriculture, industry, and services are the three main economic sectors. The three pillars of the Digital India initiative are building digital infrastructure, providing government services online, and raising digital literacy. Through job creation, increased GDP and per capita

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income, and improved lifestyles, the initiative strives to promote overall and inclusive development across all facets of the Indian economy. Its main areas of interest include the creation of digital infrastructure, electronic government, and the empowerment of people via digital literacy. Digital locker, e-mandi, e-education, e-hospitals, e-banking, e-government, and e-sign are a few of the services offered by this initiative.

Objective of Study

1. The Digital India Campaign's impact on the Indian economy is to be highlighted.
2. The emphasis is on identifying the crucial pillars necessary for the program's execution to be effective.
3. The purpose of the research is to look at how digitalization has affected different Indian economic sectors.
4. The investigation will also look at the difficulties experienced while putting the Digital India initiative into practice.

Digital India programme

In order to increase openness and efficiency in government agencies, the Indian government has been widely deploying citizen-centric and service-oriented e-governance services from the mid-1990s. Early initiatives to digitalize government, nevertheless, had little real effect on the economy. The government introduced the National e-Governance Plan (NeGP) in 2006 to address these issues and quicken the digitization process, but results were mixed. In order to create information technology, infrastructure that is enabled by digital technology, and digital literacy and knowledge, the Digital India Programme was introduced in 2015. The initiative seeks to make the whole economy technology-driven and to enhance the quality of life of residents by offering services like e-governance, digital infrastructure, and digital literacy.

Pillars of Digital India

The government of India began the Digital India Programme in 2015 as a means of transforming the nation into a knowledge-based society and economy. The program's goals include ensuring that individuals have access to government services online and facilitating nationwide access to digital services and infrastructure.

The Digital India Programme is centered on 9 pillars or main areas of attention in order to accomplish this goal:

1. Internet Highways: This pillar aims to provide all residents in both urban and rural regions of the nation access to internet connection. The National Information Infrastructure (NII), Broadband for all - Urban, and Broadband for all - Rural make up this pillar.
2. By filling up the gaps in the connectivity infrastructure, this pillar aims to give mobile connection to all of the nation's residents.

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3. Program for Public Internet Access: The Public Internet Access Program aims to provide residents access to the internet via post offices and Common Service Centers (CSCs), which offer a variety of services.
4. E-Governance: This pillar focuses on re-engineering and reorganizing government operations utilizing technological and IT capabilities to increase productivity and transparency. Government operations must be sped up and made simpler in order to make them more effective and technologically sophisticated.
5. E-Kranti: The goal of this pillar is to improve the effectiveness of providing government services and the simplicity of access by offering online access to services at all levels of governance. The objective is to bring the populace and the government closer together and within easy reach.
6. All People Have Access to Information: This pillar attempts to provide all people with information through electronic or network-based resources. For effective e-governance, regular communication between the government and its constituents through social media platforms or web-based programs is crucial.
7. Electronics Manufacturing: This pillar's objectives are to encourage the production of electronic equipment in India, draw investment to the industry, and lower imports.
8. IT for Jobs: The goal of this pillar is to teach young people in the IT industry to improve their employability skills and increase their chances of finding a decent job in the rapidly changing digital workplace of today.
9. Early Harvest Programs: This pillar consists of initiatives that have a certain amount of time in which to be accomplished. The duration of these programs is brief, falling within a 3-year window. It includes initiatives like biometric attendance, wireless access at all colleges, secure email inside the government, the conversion of textbooks to e-books, and a national site for missing and found children, among others.

Impact of digitalisation on the Indian economy

Key elements that have contributed to the expansion of the Indian economy. The Indian economy has seen a significant transition with the introduction of digitalization. The following methods may be used to analyze how the Indian economy has been affected by digitalization:

1. Productivity growth: By saving time and effort, digitalization has helped the Indian economy become more productive. Businesses have been able to simplify their processes and boost their efficiency, which has raised total production.
2. Employment creation: The expansion of the digital economy has increased job possibilities, notably in the information technology and allied industries. Data analysts, software

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engineers, and specialists in digital marketing are just a few of the new career positions brought about by digitalization.

3. Efficiency gains in the agriculture sector: Real-time data on weather patterns, market pricing, and crop yields are now accessible to farmers because to digitalization. As a result, production and efficiency in the agriculture industry have increased.
4. E-commerce development has been helped by digitalization, which has led to India's e-commerce being a significant economic contributor. E-commerce has made it possible for companies to connect with clients in far-flung regions and for customers to have easier access to a variety of goods and services.
5. Financial inclusion: Greater access to banking and financial services has been made possible by digitalization, which has enabled financial inclusion. People in rural locations may now use internet and mobile banking to obtain financial services.

Digitalization has had a favorable effect on the Indian economy. It has boosted efficiency, created jobs, and raised production across a range of industries, including e-commerce and agriculture. To guarantee that everyone can benefit from digitalization, there are other obstacles as well, such as the digital divide, which must be overcome.

Research Methodology

This research work uses a secondary data analysis methodology and focuses on the Digital India Programme and its effect on the Indian economy. The study uses a variety of reliable government sources and academic articles to inform its findings.

Impact of digitalisation on each sector of the Indian economy:

- **Agriculture Sector:**

Digitalisation has the potential to improve the efficiency and productivity of the agriculture sector. Digital tools such as precision agriculture, remote sensing, and weather forecasting can help farmers make better decisions about crop management, irrigation, and fertilization. This can lead to increased yields and better quality crops. Additionally, digital platforms can help farmers access markets, obtain credit, and connect with buyers, which can help to increase their income and reduce dependence on middlemen.

Highlights of the sector

- India is the world's leading producer of milk, jute, and pulses.
- In terms of producing rice, wheat, sugarcane, cotton, and groundnuts, India comes in second.
- In terms of fruit and vegetable production, India ranks second.
- India is both the world's second-largest producer and consumer of silk.
- India is the world's biggest exporter of cashew nut juice and kernels.

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Impact on the agriculture sector in India

1. Precision agriculture: Digital technologies such as geographic information systems (GIS), remote sensing, and drones have enabled precision agriculture. Farmers can now use these technologies to map their fields, monitor crop growth, and identify areas where irrigation, fertilisation or pesticide application is needed. This has led to better yield, reduced input costs and improved environmental sustainability.
2. Improved access to information: Digital technologies have made it easier for farmers to access relevant information related to weather patterns, market prices, government policies, and best practices. Farmers can now use mobile apps, websites, and other online platforms to get the information they need to make informed decisions.
3. E-commerce platforms: The rise of e-commerce platforms has enabled farmers to sell their produce directly to buyers without going through intermediaries. This has led to better prices for farmers and increased transparency in the market.
4. Financial inclusion: Digitalisation has enabled better access to financial services for farmers. With the rise of mobile banking, farmers can now access loans, insurance, and other financial products without having to visit a bank branch. This has led to increased financial inclusion and improved access to credit for farmers.
5. Agricultural extension services: Digital technologies have made it easier for agricultural extension workers to reach farmers and provide them with the information they need. Extension workers can now use mobile apps, video conferencing, and other digital tools to provide guidance on crop management, pest control, and other agricultural practices.

- **Industrial Sector:**

Digitalisation can help the industrial sector in India to become more efficient and competitive. Digital tools such as automation, robotics, and artificial intelligence can help to streamline production processes, reduce costs, and improve quality control. Digitalisation can also help to increase the speed and flexibility of manufacturing processes, which can enable companies to respond more quickly to changes in market demand. Furthermore, digitalisation can help companies to collect and analyze data about their operations, which can help to identify areas for improvement and optimize decision-making.

Highlights of the sector

- India is the 6th largest manufacturing economy in the world based on current US Dollar value of output.
- Based on inflation-adjusted US Dollar value of output in 2005, India's manufacturing sector ranks 9th in the world.

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- These rankings reflect the size and importance of India's manufacturing sector on a global scale.

Impact on industrial sector

1. Ease of purchase and inventory management - Digitalization enables effective raw material procurement at affordable rates, and automated inventory control systems like JIT and EOQ assist in lowering inventory management expenses.
2. Greater market reach and customer base - The ubiquitous nature of the internet has increased the market for industrial products by enabling manufacturers to quickly connect with consumers across the globe through corporate websites and online shopping portals.
3. The industrial sector is turning its attention to FMCG and technical goods, which has resulted in the creation of new products that integrate both physical and digital qualities. New product mix and product innovation.
4. Competition and trade relations Trade ties between suppliers, producers, consumers, labor-management, and intermediaries become more unified as trade transparency increases. Globalization, privatization, and other forms of liberalization have improved efficiency and competition from outside, which is good for consumers.
5. Variations in employment - Digitalization has two effects on employment. On the one hand, it causes unemployment as robots take the place of laborers, but on the other, it results in the creation of new jobs as the industry grows and expands, changing the nature of work criteria.

- **Service Sector:**

The service sector in India has been a key beneficiary of digitalisation. The rise of digital platforms such as e-commerce, fintech, and online education has opened up new opportunities for businesses to reach customers and expand their operations. Digitalisation has also led to the growth of new industries such as app development, digital marketing, and IT services, which have created jobs and contributed to economic growth. Additionally, digitalisation has helped to improve the efficiency and quality of services such as banking, healthcare, and education, making them more accessible and affordable for consumers.

Highlights of the sector:

- India ranks 7th in the world based on nominal GDP.
- India holds the 3rd position in the world when measured based on Purchasing Power Parity.
- The IT and BPO sectors have played a major role in India's economic growth with a growth rate of 33.6% in revenue from 1997-98 to 2002-03.

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- These two sectors also contributed around 25% to the total exports of India in 2007-08.

Impact on service sector

1. Information technology and business process outsourcing: India's capacity to provide high-quality, reasonably priced services is a major factor in the development of its IT and BPO industries. These services have increased the number of job possibilities and contributed significantly to the nation's economic prosperity. Different procedures have been automated to increase the effectiveness and efficiency of these services, which has led to their expansion.
2. Aviation: The aviation sector has been significantly impacted by digitalization. Online ticket purchasing, online passport applications through Passport Seva Kendras, price breaks for advance reservations, FDIs, increased tourism as a result of online tour package marketing, lower ticket prices as a result of increased competition, etc. have all contributed to the aviation sector's unexpected growth.
3. Banking and Finance: The banking industry now has better future development prospects because to the advent of different digitalized services like mobile banking, NEFT, internet banking, etc. Due to the sector's digitisation, getting loans and financial aid has also become simple and affordable.
4. Retail: Following digitization, the retail industry also saw substantial development. The retail industry has expanded as a result of online bill payments made by card swiping, online shopping sites and websites, online marketing, price reductions on certain cards, etc.
5. power industry: The power sector has profited from automated meter readings, online bill payment, refunds, and more. It has reduced the amount of paperwork, labor, time, and costs. People no longer have to wait in line to pay their bills, and the procedure has been made more effective.
6. Infrastructure: The emergence of digital technology has accelerated the construction of infrastructure while reducing the amount of paperwork, labor, and costs. The improvement of the infrastructure will advance the economy as a whole.
7. Education: The use of digital techniques in the classroom improves student learning processes, instructor ease of use and experience, and overall learning procedures. A more educated society and higher level of life result from easier access to information and knowledge.
8. Industry of entertainment: The industry has benefited from the internet accessibility of a wide range of entertainment media assets. But technology has also given rise to problems like piracy, hacking, leaks, etc.

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9. Telecommunications: The sector's future growth prospects have been improved by the introduction of new technologies such as smartphones, tablets, iPads, Android and Windows operating systems, among others, as well as a variety of online applications and phone-based internet connectivity.
10. E-commerce: Since the whole industry is built on digital tools, procedures, and methods, it is expanding quickly. The availability of a broad variety of goods, including food, clothes, jewelry, electronics, home furnishings, etc., as well as cash on delivery and simple returns, has increased consumer interest in online shopping.

Challenges of Digital India Programme

- Providing accessible and dependable high-speed internet connection to all sections of the nation, especially distant and rural areas, is one of the main issues. The success of several digital endeavors, including e-governance, e-commerce, and e-education, depends on this.
- The difference between individuals who have access to digital technology and those who do not is called the "digital divide." The key causes of this digital gap are socioeconomic position, education, and geography. To guarantee that everyone benefits from the digital revolution, this gap must be closed.
- Cybersecurity: As digital technologies are used more often, there is also a rise in cyberthreats including hacking, identity theft, and data breaches. The government must take action to protect the privacy and security of people' financial and personal data.
- Digital literacy: The nation's levels of digital literacy are relatively low, particularly in rural regions. Citizens need to be made more aware of issues and given training, particularly in areas like e-commerce, internet security, and digital payments.
- Language barriers: The linguistic and cultural origins of India are quite varied. Because English is the language that most digital material is accessible in, there is a language barrier for individuals who do not speak it. This barrier may be removed and a larger population can use digital technology by offering material in regional languages.
- Infrastructure: The nation still needs proper infrastructure, particularly in the areas of data centers, high-speed internet access, and electrical delivery. The development of digital projects may be hampered by this, hence steps must be taken to bridge the infrastructural gaps.
- Privacy worries: As more and more personal information is gathered via digital channels, people' privacy worries are growing. To safeguard people' privacy and stop the exploitation of personal information, the government must pass rigorous data protection legislation.

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Findings

The whole economy can change if people are educated and empowered about digital technology. The automation of the economic sectors will boost their productivity and growth, which will affect the economy's growth rate. Digitalization will result in cost savings, higher production, improved employment, greater productivity and literacy, among other benefits. Digitalization will aid in the improvement of all processes in the industrial and agricultural sectors, including employment, product research & development, buying, selling, inventory management, and trade relations. By making it easier to obtain and provide services, automation in the service industry will contribute to the sector's development. Increased consumer reach and services that are tailored to each client's needs help to increase demand for services. A digitally empowered economy grows considerably more quickly, effectively, and efficiently thanks to greater capital and human resource use. And India, a nation with such abundant human resources, may attain an extraordinary development rate and overtake the industrialized economies if its resources are used well.

Conclusion

Through e-governance, digitalization improves the efficacy and efficiency of work while also improving residents' quality of life. Additionally, it decreases the time and money needed for different tasks and may broaden both the market and profit margins. Automation in the industrial and agricultural sectors may enhance product design and competitiveness while lowering uncertainty. The digitalization of services may boost client satisfaction and open up new business prospects. However, it may also have an effect on employment in the nation. India must push and increase digitization while reducing barriers if it is to become a developed economy. The Digital India program's implementation may result in higher agricultural and industrial yields, better service quality, and more openness across all systems and procedures.

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