

Digitization and its Impact on Economy

NEERAJ

Assistant professor

Department of Commerce

Pt. J.L.N. govt. college, Faridabad

Abstract

The waves of adoption and usage of ICTs (Information and Communication Technologies) have revolutionized our world by introducing distinct technology-enabled services in every sphere of our lives. There are various applications of ICT, digitization is one of them. Digitization is a process of converting the diverse forms of information, such as text, sound, image or voice into digitalized format. The digitization has a proven impact on economy and society by reducing unemployment, improving quality of life, and boosting access to knowledge and other public services. In recent years, digitization, the mass adoption of connected digital services by consumers, enterprises, and governments, has emerged as a major driver and enabler of socioeconomic benefits. Indeed, despite unfavorable global economic conditions, digitization can play a key role in assisting policymakers to spur economic growth and employment. Digitization improves productivity and has a measurable effect on growth; yet, it can lead to job losses. The process of digitization facilitates to preserve, access, and share an original document to the people worldwide that may only be available earlier to those who visit its physical location. A number of measures are taking in the field all over the world and in India, to conserve and preserve the knowledge of the past and present for the upcoming generations. This paper highlights the concept of digitization along with the social economic and environmental benefits of digitization of knowledge and information.

Keyword: Digitization, Economic impact, Employment impact, Social impact, Environmental impact.

Introduction

Digitization is the process of converting information into a digital (i.e. computer-readable) format, in which the information is organized into bits. The result is the representation of an object, image, sound, documents or signal (usually an analog signal) by generating a series of numbers that describe a discrete set of its points or samples. The result is called digital representation or, more specifically, digital information, for the object, and digital form, for the signal. In modern practice, the digitized data is in the form of binary numbers, which facilitate computer processing and other operations, but, strictly speaking, digitizing simply means the conversion of analog source material into a numerical format; the decimal or any other number system that can be used instead. Digitization is of crucial importance to data processing, storage and transmission, because it "allows information of all kinds in all formats to be carried with the same efficiency and also intermingled". Unlike analog data, which typically suffers some loss of quality each time it is copied or transmitted, digital data can, in theory, be propagated indefinitely with absolutely no degradation. This is why it is a favored way of preserving information for many organisations around the world.

By the help of digitization we can provide right information to the right user at the right time. Recent developments in the information and communication technologies, especially the Internet and the Web based technologies have brought significant changes in the ways the information generate, distribute, access and use. These technologies play an important role to minimize the problems in using information at its earliest. For a long time, we have been using printed information sources which are made available to us by the efficient efforts of publishers, booksellers, librarians and information scientists. But, with the introduction of information technology so many steps have been taken to reduce the efforts in accessing the information in a short span of time. One of the significant application of IT is the digitization of knowledge i.e., to convert the printed information in the digital form and made available for use with the help of computer networks. This has changed the whole scenario of information world.

Benefits of Digitization

The digitization process involves reading of an analog signal at periodic intervals which is known as sampling. It is also possible to convert these series of integers back into the original analog signal. The quality of digitization will vary depending on the type of sampling rates etc. The advantages of digitization are as follows:

- No physical limits for storage.
- Can be accessed via the Internet.
- 24/7 availability of access.
- Great saving of space.
- Preservation of old texts/ manuscripts.
- Easy retrieval of information using keywords.
- Integrated online resource sharing.
- Linking and networking possibilities.
- Any number of times digital files can be duplicated with exactness.
- Many can access a digital file at the same time.
- The documents can be viewed from anywhere, at any time of the day.
- The documents can be printed directly from the web.

Research Methodology

The data has been collected from secondary sources from websites, blogs, journals, magazines, newspapers etc.

Impact on Economy

In recent years, digitization, the mass adoption of connected digital services by consumers, enterprises, and governments, has emerged as a major driver and enabler of socioeconomic benefits. Indeed, despite unfavorable global economic conditions, digitization can play a key role in assisting policymakers to spur economic growth and employment. Its impact on countries and sectors strongly varies. Across developed economies, digitization improves productivity and has a

measurable effect on growth; yet, it can lead to job losses. By contrast, emerging markets tend to gain more from digitization's effect on employment than from its influence on growth. To better channel the outcome of digitization, policymakers need to plan for how they digitize specific sectors and encourage the development of capabilities and economic enablers to help achieve maximum impact.

Economic impact

Digitization could boost GDP up to \$12 trillion by 2025. It can play a key role in macro-economic factors such as GDP growth, employment generation, labor productivity, growth in number of businesses and revenue leakages for the Government.

As per the World Bank report, a 10% increase in mobile and broadband penetration increases the per capita GDP by 0.81% and 1.38% respectively in the developing countries. India is the 2nd largest telecom market in the world with 915 million wireless subscribers and world's 3rd largest Internet market with almost 259 million broadband users. There is still a huge economic opportunity in India as the tele-density in rural India is only 45% where more than 65% of the population lives. Future growth of telecommunication industry in terms of number of subscribers is expected to come from rural areas as urban areas are saturated with a tele-density of more than 160%.



Social impact

Social sectors such as education, healthcare, and banking are unable to reach out to the citizens due to obstructions and limitations such as middleman, illiteracy, ignorance, poverty, lack of funds, information and investments. These challenges have led to an imbalanced growth in the rural and urban areas with marked differences in the economic and social status of the people in these areas.

Modern ICT makes it easier for people to obtain access to services and resources. The penetration of mobile devices may be highly useful as a complementary channel to public service delivery apart from creation of entirely new services which may have an enormous impact on the quality of life of the users and lead to social modernization.

The poor literacy rate in India is due to unavailability of physical infrastructure in rural and remote areas. This is where m-Education services can play an important role by reaching remote masses. According to estimates, the digital literacy in India is just 6.5% and the internet penetration is 20.83 out of 100 Populations. The digital India project will be helpful in providing real-time education and partly address the challenge of lack of teachers in education system through smart and virtual classrooms. Education to farmers, fisher men can be provided through mobile devices. The high speed network can provide the adequate infrastructure for online education platforms like massive open online courses (MOOCs).

Mobile and internet banking can improve the financial inclusion in the country and can create win-win situation for all parties in the value-chain by creating an interoperable ecosystem and revenue sharing business models. Telecom operators get additional revenue streams while the banks can reach new customer groups incurring lowest possible costs.

Factors such as a burgeoning population, poor doctor patient ratio (1:870), high infant mortality rate, increasing life expectancy, fewer quality physicians and a majority of the population living in remote villages, support and justify the need for tele medicine in the country. M-health can promote innovation and enhance the reach of healthcare services.

Digital platforms can help farmers in know-how (crop choice, seed variety), context (weather, plant protection, cultivation best practices) and market information (market prices, market demand, logistics).

Environmental impact

The major changes in the technology space will not only brought changes to the economic system but will also contribute to the environmental changes.

The next generation technologies will help in lowering the carbon footprint by reducing fuel consumption, waste management, greener workplaces and thus leading to a greener ecosystem. The ICT sector helps in efficient management and usage of scarce and non-renewable resources.

Cloud computing technology minimizes carbon emissions by improving mobility and flexibility. The energy consumption can be decreased from 201.8 terawatt hour (TWh) in 2010 to 139.8 TWh in 2020 by higher adoption of cloud data centers causing a 28% reduction in carbon footprint from 2010 levels.

Employment impact

Digitization creates jobs, with a 10 point increase in the digitization score leading to a 1.02 percent drop in the unemployment rate.

Digitization had the greatest employment effect in constrained and emerging digitized economies. East Asia, South Asia, and Latin America received the most employment growth of all regions, with more than 4 million jobs created as a result of these regions' digitization improvements.

Conversely, digitization provided little employment growth in North America and Western Europe. "These advanced-stage economies realize fewer employment benefits because, as their digitization increases, their productivity improve; some jobs get replaced by technology; and lower-value-added, labor-intensive tasks go overseas to emerging markets. Digitization has more significant employment effects in emerging markets for three main reasons. First, the digitization gain in some emerging regions is higher than it is in the advanced. Second, some of these regions have large populations, which mean that a marginal improvement in the unemployment rate leads to a significant number of jobs. Finally, offshoring grows in tandem with digitization. As companies in digitally advanced countries improve their productivity thanks to digitization, they transfer jobs to digitally emerging countries.

Conclusion

Digitization is the social transformation started by the massive adoption of digital technologies to generate process, share and manage digital information. Digitization is an inclusive technique of preservation and access by which all the institution's assets are transformed into digital and creating high-quality copies in digital format. It provides advanced opportunities for preservation and access to knowledge contents, also it changes the ways in which collections are used and accessed. Emerging digitization initiatives and ways in which institutions are becoming digital are causing various effects on economy, society and academics as well. These radical and rapid changes make the information presentation and distribution more rapid, open, and global access to the information than has been available in the past. In addition, converting material from analog to digital format reduces some of the costs included in digitization operations for providing access to print sources at anytime and anywhere. For utilizing the full benefits from digitization, organizations should select the material carefully for digitization and digitize only those items that will provide the maximum benefit to both administrator and user. Because, successful digital projects are the outcome of careful evaluation of collections, and also, careful assessment of the institution's goals and priorities and development of

thoughtful strategies will assure that meaningful, high-quality digital versions are created, and that both original and digital assets are managed well over time.

References

- 1) <https://en.wikipedia.org/wiki/Digitization>
- 2) <http://whatis.techtarget.com/definition/digitization>
- 3) <http://www.managedoutsource.com/blog/2007/10/advantages-of-digitization.html>
- 4) <http://iasscore.in/national-issues/digital-india-programme-importance-and-impact>
- 5) https://www.strategyand.pwc.com/me/home/press_media/management_consulting_press_releases/details/52364755
- 6) www.timesofindia.in
- 7) www.indianexpress.com

