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Digital Revolution and Its Nature and Extent in the Contemporary World

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Abstract

The digital revolution is the major cause of technological evolution in recent times. The Digital revolution is the technological advancement that affects the social lifestyle of common people. It is also the cause of economic mobilisation in the 21st century as it changed the way of business around the world. The purpose of this research is to determine the nature of the digital revolution and its extent in the contemporary world. This research also focuses on the different factors of the digital revolution that influenced the digitisation process. This study also sheds light on the role of innovation in the digital revolution and also focuses on different innovations that affect the digitisation procedure. This research also describes the main factors of digital evolution and the global impact of the digital revolution.

A secondary qualitative design has been followed for conducting this research study that helps to understand the topic more prominently. Exploratory research type and interpretivism research philosophy are followed during the research study which enhances the effectiveness of the study and gives an insight idea about the topic. Thematic analysis in this context also helps to understand the topic deeply and makes research studies more effective and efficient.

Keywords

Communication, Digital Revolution, Digitization, Internet, Technology.

INTRODUCTION

Background

The digital revolution specifically illustrates the advancement of technology from electronic, analog as well as mechanical devices to digital technology that is available today. The digital revolution is sometimes termed the ***"Third industrial revolution"***. The development of the digital revolution basically depends on internet technology. The development of the digital revolution started in 1947 when the first transistor was introduced which influenced the development of advanced digital computers. Computers became familiar during the 1980s and that influenced the idea of digitisation globally. The invention of the world wide web (www) also played a significant role in developing the digital revolution. Mainstream internet technology became publicly accessible in 1991 which changed the way of industrialization. The growing rate of internet users also helped in the digital revolution and affected the modern world in different ways. In 2005 the total number of internet users worldwide was around 1.2 billion and in 2021 it became 4.9 billion [1].

This growing internet user base influences digitisation along with worldwide developments. Presently, the availability of 5G technology boosts digitisation and influences the digital revolution as well. There are four stages in the digital revolution which include *data processing, personal computing, network computing and cloud computing*. These phases of the digital revolution help to mobilise the way of digitisation and also helps to improve business and other activities around the world.

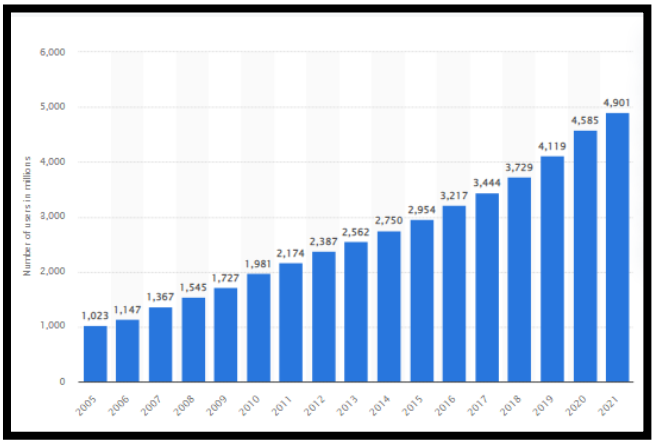

Figure 1: Number of internet users worldwide from 2005 to 2021 [1]

Aim and objective of the study

Digital revolution influences due to advanced technology that influences the business along with other activities globally. The aim of the study is to understand the nature and extent of the digital revolution in the modern world.

Objectives

- To understand the digital revolution and its nature in the modern world
- To identify the global impact of the digital revolution in contemporary days
- To determine the impact of the digital revolution and its extent in the modern world

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- To identify the role of innovation in a digital revolution

Relevance of the study

Digitisation of the digital revolution in the modern world is an important aspect that helps to mobilise businesses and industries around the world. The Digital revolution also influences the modern world in different aspects. Therefore, understanding the digital revolution and its nature is important for society. The digital revolution affects the lives of common people and also changes the way businesses tremendously. Digitisation has positive and negative impacts on different aspects. Hence, identifying the global impact of the digital revolution is very important in contemporary days. Innovation plays a significant role in the development of digitisation. Hence, understanding the role of innovation in the digital revolution is significant and these factors make this research more relevant.

MATERIAL AND METHODS

Research design

Research design is a framework or structural outline of a research paper that helps to perform research in a more efficient and effective way. Research design is required to sharpen the research method suitable for the study [2]. There are two types of research design in the field of research, one is qualitative and another one is qualitative. Quantitative research design focuses on data collection and statistical analysis. On the other hand, the main focus of the ***qualitative research design*** is generating ideas and developing a theory or hypothesis. This research follows the qualitative design that helps to summarise the topic more effectively and efficiently.

Research type

Research types refer to the fundamentals of logical and systematic research that help to reach research goals and objectives more prominently. The choice of the perfect research type is beneficial in research studies to improve the effectiveness of the study [3]. This research follows the ***exploratory research*** type that enhances the effectiveness of the study and also improves the understanding of the topic. The exploratory research type helps to understand the digital revolution and its nature in the modern world and also helps to find out the impacts of the digital revolution around the world.

Research philosophy

Research philosophy is very crucial and it is difficult to choose the proper research philosophy for a research project. Research philosophy is basically depending on the assumption that helps to reach the research objective effectively. Proper research philosophy is required to gain knowledge about the research topic and mobilise the effectiveness of the research. This research follows the ***interpretivism research philosophy*** that is beneficial for the study to analyse the topic by observing the social [4]. In this research, digitisation and the digital revolution affect society and the whole world. That is the main reason behind choosing the interpretivism research philosophy for this study.

Inclusion and exclusion criteria

Inclusion criteria

- Legitimate articles, websites and journals are considered for collecting data
- Journal articles published after 2018 are considered in this research to collect data
- Journal articles that are written only in the English language are considered in this research to collect data

Exclusion criteria

- Doctoral dissertations and conference papers are avoided for collecting data
- Journal articles published before 2018 are excluded here for collecting data
- Language other than English is excluded from selecting the journal articles that are used in data collection.

Data collection and data analysis

Data collection and analysis is the most crucial part of a research study. The overall result and decision-making in a research paper depending on the data collection and analysis. There are two types of data collection and analysis methods, one is quantitative data collection and another one is qualitative data collection. This research follows the ***qualitative data collection and analysis*** technique that improves the efficiency of the research and also helps to make analysis easier. The qualitative data analysis provides an insightful overview of the topic that makes the research study more understandable [5].

RESULTS

Theme 1: Digital revolution and its nature

The Digital revolution is considered the shift from analog electronic technology to digital advance technology. Digitisation or the digital revolution affects the world in negative and positive ways. The Digital revolution is sometimes termed the third industrial revolution as it evolves modern industries enormously. Digitisation or the digital revolution has made it easy for people to access data regardless. [6] People can now work from home and learn from their suitable places. Learning becomes easy for any age of people which improves productivity and manpower and helps the business. The Digital revolution made banking services easy by using online portals and it improved the overall banking experience for people. Different businesses worldwide are now able to maintain digital records of their stocks and that improves their entire business process more easily and effectively. Automation technology in manufacturing also helps to produce the bulk of the product and that helps to improve the revenue and which affects the overall economic development.

The advancement of GPS technology with integrated satellite technology has made business processes more easily.

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Different logistic services presently work with drones to deliver consignments to different places. That improves the supply chain of the company and also helps to grow the overall business. The digital revolution helps the environment from its beginning by reducing the waste production. The emerging 3D printing technology helps to develop models of different products that can make an individual's life easy [7]. Therefore, the digital revolution and digitisation of businesses have improved the lives of common people tremendously and it has the ability to make the world better in future. The digital revolution improves economic development, banking facilities, medical facilities, education and other services enormously and digital evolution has the ability to improve these facilities more in near future.

The Digital revolution links individuals and groups together and it also improves international communication easily, which is beneficial for the development of the business [8]. The digital revolution gives opportunity to new business startups, presently the entire business can be managed from a bedroom with the help of a single computer.

Theme 2: Global Impact of the digital revolution

The digital revolution refers to the technological advancement from analogue technology to digital technology. The process of digitisation affects the entire world in many aspects and most of them are beneficial for people. The digital revolution affects the way of businesses, industries, medical facilities and other social aspects [9]. The major impact of the digital revolution is it changes the way of business. Digital payment methods, digital agent for the purchasing process, collection of data for creating personalised offers, integration of mobile-based applications and "Artificial intelligence" improve the business process. Communication and information sharing has been expanded with new technologies that improve the overall business process globally. Digital transformation helps new business models to grow and also helps to make the business model profitable. Dynamic business processes, reduction in execution time, more efficient processes and the flexible adaptable organisational process are the key aspects that have been improved by digitisation and fostered all the business sectors positively [10].

The effect of digitisation and the digital revolution is enormous in the industrial field. The digital revolution and the advancement of new technologies improve the manufacturing process in industries. New digital technologies give an instant boost to productivity and allow projects to move faster. The Digital revolution is the greatest step towards the "Industrial Internet of Things (IIOT)". The IIOT technology refined the whole manufacturing process and it provided continuous feedback throughout the whole manufacturing supply chain [11]. In 2022 total spending on digital transformation was around 1.85 trillion and it is forecasted to reach 3.4 trillion US dollars by 2026 [12]. It signifies the digital revolution has an enormous impact on global industries and also influences the growth of the global economy.

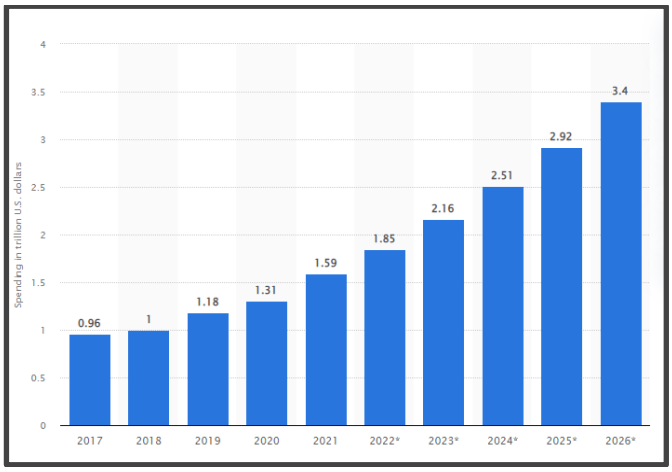

Figure 2: Spending on digital transformation technologies and services worldwide [12]

The digital revolution brings the 3D printing technology that is a huge advantage for the manufacturing units in product model designing. The digital revolution is driving a fundamental digital reconstruction in healthcare facilities [13]. Advanced technology and equipment make healthcare facilities more effective and efficient. Digital transformation of healthcare facilities goes beyond individual patients to the entire patient population. In the pharmaceutical sector, advanced technology plays a major role in research and development. AI technology is now used for drug discovery and performing clinical trials among patients. Robotics, imaging and navigation technology helps to improve the effectiveness of surgeries. Different hardware, software and wearable devices are becoming widely available to monitor patients health related issues and symptoms. Besides, the digital revolution has a huge social impact on people that affects their entire lifestyle of people. Greater interconnectedness and easier communication due to social media and other communication mediums make human life easy [14]. The digital revolution improves the exposure of information that was not accessible in the past. The digital revolution changed the way the education system helps in the overall development of human beings. Therefore, it can be stated that the transformation of the entire world is influenced by the digital revolution as it impacts each and every aspect of human life.

Theme 3: Impact of the digital revolution and its extent in the contemporary world

The Digital revolution is the technological advancement in the present world that changes the lives of people and business processes all over the world. The digital revolution has impacted each and every aspect of human life along with the overall business process all over the world. The digital revolution has changed human life in different aspects. It has changed the way education, health care, communication, and other social elements affect human life from different angles. On the other hand, the digital revolution is the main cause of ***economic mobilisation around the world***[15]. It improves the ***business process of organisations*** and becomes the cause

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of industrialisation. In another word, the digital revolution is termed the ***"Third industrial revolution"*** which signifies a revolution in technology that influences 0 the business process of industries and consequently increase economic development around the world.

Digital revolution and technological advancement have different positive impacts on humans or society globally. Digital resolution ***improves communication systems*** around the world. People now can share their thoughts with each other more easily which influences the overall improvement of society [16]. Nowadays people can communicate with different international groups and exchange ideas and knowledge that enhance their skills and productivity. With the improved communication system, performing a business is quite easy, it makes business dealing and product selling easier through different social media platforms. The digital revolution improves the ***educational system and overall learning process*** of people and that is a remarkable impact of digitisation [17]. Presently people can learn sitting at their home from different teachers and professors around the world.

Broadband and emerging 5G technology help learners to access a wide range of information and knowledge that are available free on the internet. Learners can learn different new skills any time from their comfortable locations. The digital revolution ***improves healthcare facilities*** all over the world. Medical facilities are more effective than before with the help of technology [18]. Advanced technology and advanced equipment are more capable of diagnosing different diseases and making treatment procedures more efficient. The pharmaceutical sector enjoys a huge push due to the digital revolution. The Discovery of new drugs and their testing is now easier with the help of artificial intelligence. Advanced digital technology ***changes the conventional agriculture method***. Presently with the help of digital technology and automated digital instruments farming is becoming easy. Farmers now can test soil parameters more effectively with the help of new digital equipment and this gives them an advantage in farming.

The Digital revolution also improves the ***governance of different countries***. With the help of new advanced technology, many countries launch different portals and mobile-based applications to provide common people with basic services. Some countries have now introduced digital technology in administration. With the help of these technologies, the government can track different aspects of administration to improve the law and order of the country [19]. Drones, tracking devices and CCTV cameras now help to maintain law and order and secure the public from crimes.

Theme 4: Role of new innovation in the digital revolution

The world is evolving due to the digital revolution around the world and innovation is important that have the potential to add new technologies to solve different problems of human beings. The changed behaviour of the new generation, and their expectations lead to new requirements. Therefore, innovation is the only way to meet the requirements of the new generation From the beginning, innovation plays a significant role in any revolution. Today every operation is going through digitisation and digital transformation. The process of the digital revolution started with the innovation of transistors and finally, it changed its way with the help of computers. Finally, it reached the optimum level with the innovation of the internet. The Digital revolution is the cause of scientific innovation around the world. Mobile technology plays a significant role in the digital revolution, presently people with the help of mobile phones can perform many jobs from their comfortable locations.

Mobile technology increases the speed and frequency of interaction between companies and customers and helps to improve the business. The innovative internet of things (IoT) also plays an important role in the digitisation process [20]. IoT can identify which data is useful and which can be safely discarded. Innovation in robotics technology is also significant to make digitisation possible. Robotics technologies now help to design different electronic circuits and devices. The innovation of Artificial intelligence is the path-changing digital transformation programme. With the help of Artificial intelligence, researchers are now able to develop complex technologies more easily and this AI technology and machine learning make the digital revolution easier. Innovation Augmented reality and virtual reality is one of the innovative digital technology that is used by organisations to produce different digital technology that can help in the digitisation procedure.Innovation of big data analysis techniques also influences the process of the digital revolution. Through big data analysis techniques, researchers get ideas about the requirements of people that help them to produce proper technology for the people [21]. Therefore, it can be stated that innovation and the digital revolution both are connected to each other. The digital revolution can not be possible without scientific innovation and advanced technologies.

DISCUSSION

The digitisation or digital revolution is considered as the shift from analogue technology to digital electronic technology. Digitisation is the main reason for business transformation and the change of lifestyle of common people around the world. The digital revolution is sometimes termed as the "Third industrial revolution as it evolves modern industries enormously. People can now work from home and learn from their suitable places. Learning become easy for any age of people which improves productivity and manpower and that can help businesses. Due to the digital revolution banking services becomes easily available using online portals. Different businesses worldwide are now able to maintain records digitally of their stock and inventories which improves the entire business process. Advanced GPS technology has made the business process easy, different logistic services now deliver their consignments with drones [22].

That improves the supply chain of the company and helps

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them in their business. The digital revolution influences the economic development of a country as it changes the way of business. Digitisation links individuals and groups together and it also improves international communication which influences the development of a business. Besides, the digital revolution gives the opportunity to a new startup business. Presently due to digital advancement, someone can manage a business from their bedroom with a single laptop. The Digital revolution also changed human life in different aspects. It has changed the way of education and the healthcare system. Now people can communicate with different groups all over the world and exchange ideas with others more easily. It improves skills and abilities that help them in their overall development. Digital technologies improve the education system and overall learning process of people [23]. Presently people can learn their desired course from their suitable locations. Broadband and new 5G technology globally help people to collect a wide range of information and that improves their knowledge. With the help of digital technology healthcare facilities all over the world evolves. New advanced diagnostic techniques and equipment make diagnosis procedures easy and that helps to give people healthy life. Digital technology changed the conventional agriculture method. Presently with the help of advanced digital instruments, farmers can test soils to know the soil parameters. This gives farmers an advantage in the farming procedure. Digitisation also helps the government to improve governance and administration [24]. Different governments worldwide now use different online portals and mobile applications to provide common people with basic facilities. With the help of different digital technologies, the government is able to track different aspects of administration. Police and other departments now use drones and different tracking devices to monitor unlawful activities and that help to maintain law and order and keep the public safe from crimes. The role of innovation is very important in the digital revolution. The Digital revolution is the cause of scientific advancement around the world. The process of the digital revolution started with the innovation f transistor and after that, it changes its way with the advancement of technology. The innovation of computers and the internet is the major cause behind the digital revolution. Mobile technology increases the speed and frequency of interaction among companies and people and it helps to improve the business model. Presently innovation of artificial intelligence augmented reality, virtual reality and big data analysis help researchers to make different new technologies that help digitisation procedures. The emerging 3D printing technology influences the designing of advanced equipment and makes research and development efficient [25]. Therefore, it can be stated that the digital revolution has a huge impact on the contemporary world and innovation is the key to access to the digital revolution innovation can improve the digitisation process by innovating new technologies.

CONCLUSION

The Digital revolution is the technological advancement that improves the overall business process along with the daily life of common people. The development of the digital revolution basically depends on internet technology and the growing internet user base influences digitisation along with worldwide developments. The digital revolution has an enormous impact on the business and social life of individuals. The digitisation process helps businesses to grow as technological advancement speed up the communication between companies and their customers. The digitisation process helps manufacturing industries to speed up production and also helps the company to develop their products. Digital revolution improves the education or learning process, healthcare system, agriculture process and governance and administration of a country. Therefore, it can be stated that the digital revolution evolves each and every aspect of life in an individual. From this research, it can be concluded that innovation plays a significant role in the digital revolution. The innovation of computers and the internet starts the revolution and presently the innovation of Artificial intelligence, big data analysis, 3D printing technology, augmented reality and virtual reality evolving the digitisation process.

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