

Implications of Adopting Digital Technology: A Path to Gaining Fresh Understanding.

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ABSTRACT

The industrial age has been marked with a vast technological and industrial developments as a result of massive developments in the domain of science and technology. The combination of artificial intelligence, big data, cloud computing, mobile technology, and the Internet of Things entirely changed the situation and has become a new starting point. Previously, people could communicate through letters only and it could even take weeks and even months to get a reply. Nevertheless, it is no longer the case with the introduction of digital technologies. The significant changes in digital, mechanical, communication, manufacturing, and manufacturing technologies in the last decade have unveiled new fields in technology. The dotcom era has demonstrated how efficient management can be applied to the full extent by businesses to cut down on costs and enhance profitability and raise the performance of the firm at large. This involves start-outs and scaled-up companies. Technology enables connectivity of the world using some standard protocols that enable the businesses to expand and make changes in the new digital world.

KEY WORD- Digital Technology

1. INTRODUCTION: EMERGENCE OF DIGITAL TECHNOLOGY

The current perception of digital technologies in the past 10 years has been consistent with the business processes of the firms. The digitalization of the business infrastructure is changing in the last few years with more connections among products and services provided. Machine learning (AI), big data, cloud computing, and the use of blockchain technology are digital technologies that have an intrinsic ability to electronically transform any organization. The global industries and businesses are going through a heavy rebranding of corporate objectives, business operations, internal and external potential, products and services offered and more to data recoding systems. The chapter has divided it into four themes to cover the understanding of the digital technologies and its use on the business firms and help provide framework to the insights of the researches in the future. These four themes are as follows; (1) the reach of digital technologies; (2) its size; (3) its potential customers and (4) the issues surrounding the adoption of digital technologies.

After describing all these four themes, we write about the success measures and possible consequences of the special issue as a way to shed light on the digital approaches as well as provide a reason to conduct further research which will expand our knowledge of these spheres. The prospective research will guide the researchers and practitioners in their brainstorming which relates to the expansion of such an exciting stream to reveal information technology world.

Digital technologies in general are dramatically changing the conventional approaches and practices of business firms since it improves social connectivity, communication speeds, versatile working, process automation, information storage, editing etc. Moreover, it facilitates cross prospects of time, duration, and functionality to accomplish tasks. Modern technologies also provide different sorts of dynamic capabilities that are quite ideal for tumultuous situations (Mitchell et. al, 2013). With social networking and the platform it offers, digital technologies are also changing the nature of social relationships in both the household and commercial spaces (Cardinali et al., 2023).

As time goes on, digital technologies become more and more integrated into the products and services that are provided, making it harder and harder to distinguish them from the underlying IT infrastructures (Lundin and Kindstrom, 2023).

Industrial operations across the borders can be done with ease with the help of IT infrastructure. It has also led to the establishment of virtual world (Neschen, 2023). Although many studies concluded that the technologies are dynamic in nature which can pose certain challenges to firms.

Ultimately, the future generation will increasingly be offered services through digital platforms due to its enhanced capabilities of processing data, storage, bandwidth, and software applications. Artificial Intelligence (AI), cloud computing, automation of process etc. offer new insights and eventually uplift the performance of firms. In this way, the trends need to be examined comprehensively to identify the relevant technologies that can be implemented into the company strategy

by the business owners. Instead, it should be consolidated to form a larger phenomenon so that, the virtual market place will be formed. The application of digital technology definitely creates unequal business values that may enable the entrepreneurs to win the high ground in the global market.

2. RESEARCH DESIGN AND METHODOLOGY.

It is a theoretical analysis which is premised on secondary data. The statistical data was obtained in a variety of sources that included the resources in the journals and periodicals, the theses of the relevance that were found in Research Gate and Scopus. The researcher has also made access to online portal and Internet websites to gather related information and statistics. The main themes that this chapter of the book has touched upon are Digitalization, Digital Technology, Artificial Intelligence, Big Data Challenges, and Opportunities.

3. OBJECTIVES OF THE STUDY

The chapter targets mapping the background of digital technologies, and is more limited in context of embracing of technology by business firms. The primary objective of this study is to understand the overall role of digital technologies in business and to highlight the major aspect associated with it. The study aims to study the following objectives-

1. To review the scope of digital technology
2. To evaluate the scale of adoption of digital technology
3. To study the opportunities offered by digital technology in business firms
4. To identify the challenges imposed by the adoption of digital technologies

These objectives are studied under four specific themes for better understanding and clarity as mentioned in the next section (Section 4).

4. DIGITAL BUSINESS THEMES

The study has recognized specific themes to provide a base on digital technologies and provide a framework for the novel insights. The four themes in which this chapter is classified are- (1) *the scope of digital technology*, (2) *the scale of digital technology*, (3) *the opportunities of digital technologies*, and (4) *the challenges associated with the adoption of digital technologies*. This chapter intends to capture the key areas of digital technology and assist in articulating its core elements. It will also help academicians, scholars, entrepreneurs to seek better understanding of the nature, role, and emergence of technological know-how and the main drivers for the adoption of these digital technologies (Figure 1).

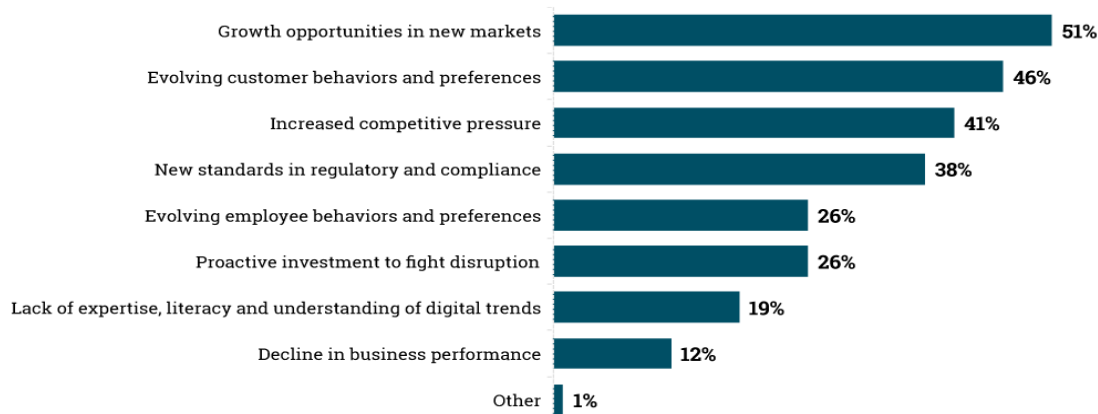


Figure 1: Digital Transformation Drivers in Business Firms

source: <https://www.marketingcharts.com/business-of-marketing-107115>

4.1 SCOPE OF DIGITAL BUSINESS STRATEGY

Modern technologies are being adopted and their breadth is expanding in the digital age. It encompasses both the operations that occur within a firm as well as the portfolio of goods and enterprises. As it has already been stated, the patterns of diversification and scope have an impact on the overall performance of the business. A variety of studies were carried out

to examine the question whether the best definition of the parameters of the digital technology and the classification of its reach. It is not difficult to observe how the heterogeneity of technologies can be applied to organizations, industries, IT infrastructure, the external environment within the framework of which the digital company planning it must adapt itself to various conditions better.

The digital management goal entails technology being employed to enhance the performance of the companies either through the production of new children products or the redesigning of the existing processes. It provides an overview of the strategy and performance, which a business will use to execute them and make use of technology to establish a new competitive edge. A survey that had been released in Forbes magazine indicated that 82 percent of the surveyed fell into the category of making purchases or carrying out research online. Companies have become more visible on the digital platforms and this has minimized the level of distance between the companies and the consumer base. The country which has the second-largest population and the rank of people, actively using internet, is India, where there is approximately 2 billion people. That is why it can be called one of the largest marketplaces, and the country can reach such magnitudes because the sky-rocketing demand of the market can be reached, due to the fact that the power of reason is in the hands of the one that has the necessary knowledge.

4.1.1 DIGITAL TECHNOLOGIES TRANSCENDS TRADITIONAL ACTIVITIES

Digital technology: Digital technology is defined as digital devices, systems, and resources used to develop, store, and manipulate data. Digital technology refers to the utilization of computers to manipulate information, and information technology (IT) is a subset of it. Undoubtedly, IT contributes to the digitalization of businesses. It is more than just digital technology as a typical IT infrastructure because it transcends the typical functional areas of marketing, logistics, operations, etc. It goes beyond functional departments such as order management and customer service. The factors involved suggest that digital technology is trans-functional in nature. The availability of digital platforms both internally and externally in firms enables the exchange of information at a high level, which is the cornerstone of all digital business strategies. This mechanism makes multifunctional plans and processes interconnected strongly. (Roth et al, 2023). Figure 1.

Digital revolution has been more pronounced, prevalent and integrated than any other revolution. In a bid to go digital, the world economy comes up with a number of rules to implement it. The role of artificial intelligence and Big data is therefore synonymous, and it has the potential to generate innovation into both local and international trade.

State of big data/AI adoption in organizations worldwide

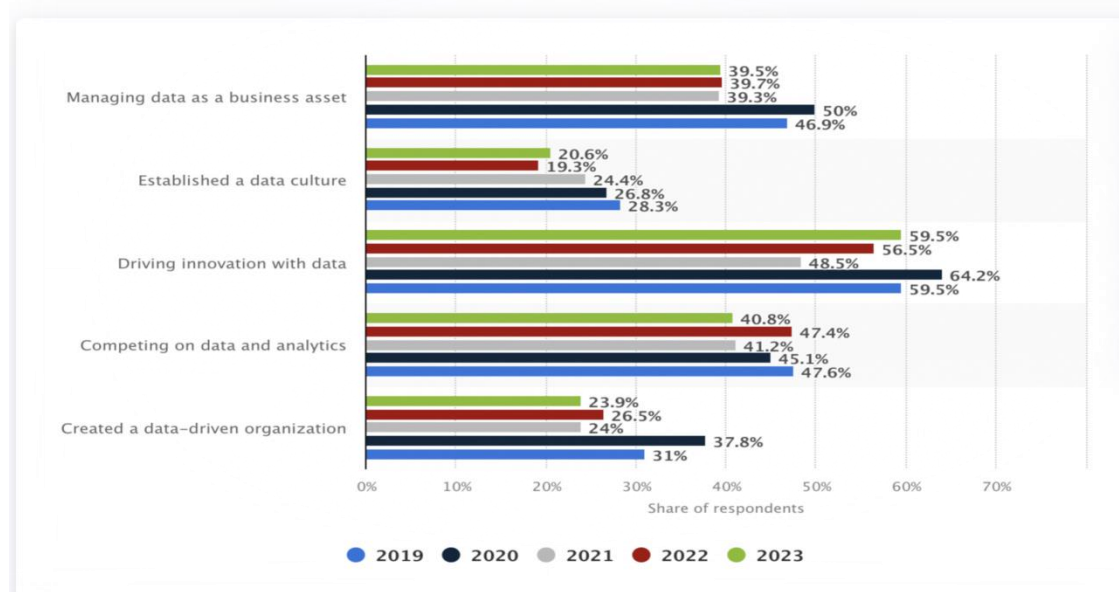


Figure 2: Adoption of Big Data and Artificial Intelligence in global organizations

Source: <https://www.statista.com/statistics/742993/worldwide-survey-corporate-disruptive-technology-adoption/>

Figure 2 depicts a crystal clear state of AI and the adaptation of Big Data in the global level organizations. According to the data, digital technologies do not only secure data as a business resource but also online, create a data culture, promote innovation, and build competitive strategies based on data and analytics (as indicated by the figure). Recently, its data has been revised. The trend towards AI and Big Data is evident in 2019-2023. About 39.5% of firms are currently using these technologies to manage their data in 2023. These technologies might affect knowledge properties depending on management decisions. e. At the workplace, workers will be driven to eventually oppose innovation because managers will focus on the deployment of functionality rather than solutions or ideas that technology can propose. Comparatively, the previous years showed a somewhat consistent percentage of 39.7, having also been previously claimed at 39.992, 2022 and 30 before 2020; 50 increase year-of-year being noted by the covid-19 epidemic. Business strategy in the digital age must not be viewed as a supplement to the variable used to develop the existing strategies, but as a unique dimension of business practice. Digital business plan will become business strategy someday as we are expecting industries and businesses will integrate more connectivity, information and ability to communicate to facilitate business development. By that time the digital organizations would not be forced to distinguish between company strategy and business strategy anymore.

4.1.2 Digital Technology facilitates Digitization of Services and Products

With the advent of technology, the whole scenario has changed. Digitalization facilitates dynamic changes. For instance, using digital resources to implement changes in corporate processes, product and service design, and their compatibility with other complementing platforms. Not only did participants experience techno-work engagement when educational technology permitted advancement, facilitated work, and provided novelty value, but they also experienced it when working in a collaborative and happy environment. New technologies are being introduced in fields such as artificial intelligence, 3D printing, and big data that have agentic capabilities never seen before (e.g., action selection and protocol creation). They might shift how employees operate since they have new skills that might be competing with human agency. This study is focused on looking into their introduction in job activities and the ensuing views of the work characteristics generated by the work design model. We provide a taxonomy of technological advances to conceptualize their interaction with work characteristics, building on the approach put forward by Murray et al. (2020). We conducted a theme analysis and spoke across a variety of employee types—experts, managers, and users—from a business that had begun a digitalization process in order to investigate the changes brought about by two digital technologies: drones and robotic automation procedures. If humans are going to handle exceptions, then they will need to gather information about the issue, use their knowledge and experience, and finish the scenario. However, because they require the performance of a regular procedure and infrequently result in skill growth, these monotonous jobs can also be uninteresting to the employee.

Many businesses are starting to realize how digital resources may be used to develop new skills and rethink long-standing goals and objectives. Notable examples include Amazon's cloud-based Web Services, which greatly extend the approach of a typical online store by incorporating cloud computing services as an essential digital resource. These indications imply that the autonomy of workers is not greatly affected by technologies devoid of these characteristics. When agents such as action selection or protocol development are built into technologies, employees might grow less autonomous as a result of their growing reliance on the suggested actions and judgments of the technology in lieu of their own. Technologies containing these two qualities replace human labor in tasks, which causes individuals in the supplanted roles to feel substituted and hence have an enormous decrease in autonomy.

This can also be exaggerated to other as corporations like Google, Microsoft, and Netflix continue to reap the benefits of technological improvements in hardware, software, and Internet access, they also need to adapt and improve the reach of their organizations. Digitized product introduced by Nike supported by Apple's iOS could be another example. The technology of digital era is *"more than just bits and bytes."* In general, the digital infrastructure is made up of certain procedures and guidelines that can be merged to provide businesses with the benefits of digitalization (Bharadwaj et al, 2013). Certain predetermined operations can be carried out autonomously by technologies that solely have the ability to choose actions. When a task is hard to program (i.e., has a lot of exceptions), humans always complete it. This may lead to a labor distribution where humans handle more complex, hard-to-program jobs while technology handles repetitive, straightforwardly programmed tasks. If humans are going to handle exceptions, then they have to collect information about the issue, use their expertise and education, and finish the scenario.

4.2 SCALE OF DIGITAL TECHNOLOGY

As market becomes more and more digital, there is a need to consider the scale of technology in both physical and digital dimensions. Higher the scale of adoption of technology in business; higher will be the profitability. Although the scale is likely to be affected by other factors too, such as size of the business firms, business strategies, dynamic policies and environment and so on.

4.2.1 STRATEGIC DYNAMIC CAPACITY OF QUICK DIGITAL SCALE UP/DOWN

Growing popularity and accessibility of technologies like blockchain, cloud computing, and artificial intelligence, among others, offer a strategic dynamic flexibility to scale up or down an organization's infrastructure. The ability to scale quickly becomes a strategic dynamic skill that allows the company to adjust to the changing demands of the digital marketplace when digital infrastructure and business strategy are integrated. Prominent cloud service providers like Google Cloud, Microsoft Azure, and Amazon Web Services (AWS) offer elastic resources for software, systems, and infrastructure that let their customers adjust their digital resources on the fly to meet competing demands.

4.2.2 FAVOURABLE OF IMPACT OF NETWORKS ON MULTI-SIDED PLATFORMS

As businesses move into the digital sphere, entrepreneurs need to take into account different network effects and multifaceted business models. Links between web sites on the demand side and digitally connected partner ships (such as those formed by Facebook and Google) on the supply side can be used to accomplish this.

4.3 OPPORTUNITIES OF DIGITAL TECHNOLOGY

1. **Labor of Hybrid Work Culture: Digitalization:** The engineer is also the provider of the opportunities to work at home. The digital transformation began a long time ago, but it turned out to be the life raft people all require as the COVID-19 trapped us in its endless poisonous net. In cases where much of the business had a lot to lose, the digitally furnished business all set their boat and sailed safe through this storm. Most of the employees were working at home and others were using the hybrid system i.e. WFH a.k.a work from home and WFO a.k.a work from office both. All the co-workers were connected with each other by using social media applications such as Zoom, Google Meet, Skype, etc.
2. **The digitalization process brought about a major change in the productivity of the business resulting in greater efficiency and productivity.** The most popular digital tools utilized in these purposes are automation processes and chat-bots. The idea of efficiency and working less harshly was developed by the company, whether to hire someone or work. Such digital tools are time-saving since they assist in streamlining back-office activities. It reduces the obstacles in ROI. Digitechs are highly efficient regarding time and accuracy, allowing workers to make good profits and spend considerable time.
3. **AI is believed to be gradually diminishing the employment opportunities of humans, according to a common belief.** In contrast, it provides workers with more leeway and a greater amount of time, freeing them from small or intricate tasks to demonstrate their abilities and achieve maximum results. Digitalization has resulted in the emergence of diverse career paths, particularly in IT. In the corporate sector, a new digital marketing department has been established.
4. **Upgraded Resources for firms:** The emerging concepts of Internet of Things (IoTs) and ICT have significantly changed the development graphs of entrepreneurs. The competition is increasing by every minute and the companies utilizing the digital tools to keep themselves updated on the resource tools and its management gain profit in their business to the highest. In simple words, the more tech-savvy, the more the profitability. Whether its operations or marketing, the digital tools help a company realize their strengths, weaknesses, and also their potential.
5. **Improved Customer Relationship Management(CRM) :** The people in the present era want easy and quick solutions to their problems. Customers seek rapid and accurate answers to their queries whether it is work-based or for leisure purposes. Through customisation, the businesses make the experience for their consumers more personal and suitable for their specific needs. Whether it is any product or service, digitization has proved highly advantageous for both the parties, i.e. the buyer and the seller. It is easier for marketers to understand what best caters to a customer's needs through various analytics programs in relatively lesser time.

6. Better Internal Communication among the Workforce: A company has different departments for different purposes and requires communication with each other from time to time for smooth running of business. In such scenarios, miscommunication happens, data gets lost, ideas are not well-putted for others knowledge, etc. can go wrong. Labor of Hybrid Work Culture: Digitalization: The engineer is also the provider of the opportunities to work at home. The digital transformation began a long time ago, but it turned out to be the life raft people all require as the COVID-19 trapped us in its endless poisonous net. In cases where much of the business had a lot to lose, the digitally furnished business all set their boat and sailed safe through this storm. Most of the employees were working at home and others were using the hybrid system i.e. WFH a.k.a work from home and WFO a.k.a work from office both. All the co-workers were connected with each other by using social media applications such as Zoom, Google Meet, Skype, etc.
7. The impact of digitalization that caused businesses to digitalize their workflow contributed significantly to efficiency and productivity. The most widespread digital tools used to these purposes are automation processes and chat-bots. It is what both employers and employees of business people thought about and believed in working smarter as opposed to working harder. This was a result of this. Digital tools are time-saving because they make back-office work easier. It breaks the barriers within the ROI. Digitechs can accomplish their tasks with great precision and with rapid completion thus providing the employees ample time to realise substantial profits.
8. AI is believed to be gradually diminishing the employment opportunities of humans, according to a common belief. Rather than that, it grants employees greater elbow room and provides them with ample time, free from any small or intricate tasks to demonstrate their abilities and produce superior results. The IT sector has experienced a rise in job opportunities due to digitalization. A new department dedicated to digital marketing has been established in the corporate sector



Figure 3: Resistance from Employees for the adoption of technology

Source: <https://www.businessprocessincubator.com/content/looking-to-evolve-your-business-read-this/>

5. CONCLUSION AND SUGGESTION

The process of digitalization of the business resulted in a drastic change of its productivity, making it more efficient and productive. To demonstrate, automation processes and chat-bots are the most frequently used digital tools in these purposes. The employers and employees both of the business people were of the opinion that they worked smarter rather than harder. This was a result of this. These online applications save time as they enable the optimization of back-office operations. This also removes roadblocks in ROI. Digitechs are very efficient both in time and accuracy that means workers can make good profits with lots of time. According to the usual interpretation, AI is eating up the job opportunities. Instead of that, it allows the employees more elbow room and gives all of them more time, where there are no little or complex tasks to show their skills and show the best output. Digitalization has led to the surfacing of various career opportunities, especially IT. There has been the formation of a new digital marketing department within the corporate world.

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