A Review on Improving Performance Through Digital Transformation: A study of Best Technologies and Key Success Factors

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Abstract

Digital transformation is enabling the organization to deliver on commitments to customers, partners, shareholders, and employees using technology to optimize every organizational interaction. However, organizations cannot be a success by only transforming to a digital environment. Success depends on many technologies and success factors. An analysis of the literature was conducted to identify a gap within published articles between the years 2015 to 2020 that are relevant to digital transformation. Many authors emphasize on the importance of digital transformation in improving organizational performance and indicated that the key technologies and key success factors that need to be followed in a digital environment. It is recommended that organizations should play an active role in ensuring that the implementation of key technologies and key success factors to triumph in digital transformation.

Keywords

Digital transformation, Organizational performance, Key technologies, Key success factors

1. Introduction

1.1 Background of the Study

Digital transformation is most common and must need a term for nowadays contemporary organizations. With the technological advancements, organizations are moving towards a must needed change to survive in the competition within and outside of the industries. Digital transformation is used for the organizations to give the change that organizations needed. “Digital transformation refers to the changes in the organization`s structure, processes, products or services, and business models caused by the adoption of digital technologies in order to radically improve its

performance" as defined by Dimitrios and Fotis, (2019). An enterprise's approach to digital can have an immense impact on the nature of work, the spectrum of jobs, or how people are managed (Deborah et al.,2016).

For organizations in the late 1990s it was the internet beginning of the first decade of this century it was social media, now it is digital transformation for the survive. According to a survey, no less than 40% of businesses will die in the next 10 years if they do not figure out how to change their entire organization to accommodate new technology. When digital technologies handle properly it will affect reducing human error, increasing productivity and profitability and it will efficient and effective for the organization. when the Commitment is there for digital change It will lead to success.

However companies cannot get success by only implementing digital technologies in their place, success depends on many technologies and success factors the technologies such as Artificial intelligence(AI), Internet of Things(IoT), Augmented Reality(AR), Virtual Reality(VR), cloud computing, robotics, machine learning, big data, 3d modeling, and data analytics.

Apart from that success depend on key technologies and key success factors. These are the technologies identified from research articles as the most effective and important technologies for the success of an organization are AI, data analytics, cloud computing, and IoT. AI enables human capabilities to be undertaken by software increasingly effectively efficiently and at a low cost. Implementing Data analytics into the business model means it can store a large amount of data and help to reduce costs by identifying effective ways of doing business. IoT is a significant driver of big data analytics in particular it can deliver a large amount of data in real-time through various IoT devices, it monitors companies' performance and improves operations. With cloud computing access to the data can be done from anywhere in the world it is ideal for nowadays remote works in the companies.

And there are many success factors that effective in digital transformation, these are key identified factors from studies, Leadership, Capability building, empower workers, Upgrading tools, and Communication. Leadership helps to maximize efficiency and achieve organizational goals it is based on managers they must-have traits of a leader. Capability building is a highly scalable approach that enables organizations to rapidly identify build and sustain targeted capabilities of digital knowledge needed to continuously improve performance. Empower workers as employees are given technologies and resources needed to succeed fully manage or lead the benefits of their own projects are endless and more productive, upgrading tools time after time helps to save money. To perform business functions continuously and share knowledge communication plays a massive role as a success factor.

The problem here is most organizations are failed when implementing the digital transformation. The reason for that is a lack of knowledge about technologies and leadership problems due to the changing nature of the environment the corporate leaders do not have enough time to give the awareness.

1.2 Rational and Scope of the Study

This research focuses to assess the performance of organizations with the best technologies and key success factors in the context of digital transformation. This research will only focus on the four most effective technologies and five key success factors to improve the performance of organizations' perspective with the digital transformation. Accordingly, organizations would be able to gain a sustainable competitive advantage in a digital environment in the information technology era.

1.3 Aims and Objective of the Study

Given that there is a limited understanding of the impact of technologies and success factors in digital transformation on organizational performance, the findings of this study will advance existing knowledge in technologies and success factors effect on organizational performance. Understanding the nature of technologies and success factors, and its relationship with improving the performance of the organizations, will assist the organization to make more success in the work environment.

2. Literature review

2.1 Digital Transformation

Digital transformation is happening all around us and there is rarely a single aspect of life that has not been affected. In a traditional sense, digital transformation refers to the use of computer and internet technology for a more efficient and effective economic value creation process. In a broader sense, it refers to the changes that new technology has overall on how we operate, interact, and configure, and how wealth is created within this system. Technology users as advancing through three stages: digital competence (in which a range of skills are gained), digital usage (in which these skills are used in an applied setting), and finally digital transformation (in which the application of skills leads to innovation and creativity) stated by Elizabeth, (2018).

As per Hecheng et al., (2020) Digital transformation has become the trend of societal, economic and industrial development; moreover, it has been actively conducted by enterprises. However, enterprises rarely succeed in implementing digital transformation and achieving favorable performance. The implementation has become a strategic management issue for companies. When there is an implementation, they need to look at changing the organizational structure, innovating the business model, integrating suppliers/ customers, and establishing an open ecosystem. And they are afraid of taking the risk.

Digital transformation is not affecting all industries at the same pace. On the one hand, some industries were hit early due to the arising digital competition. The music industry, for instance, adopted early to new digital concepts which emerged as new threats to traditional business strategies. On the other hand, some industries have yet to be affected by severe digital transformation. An example would be manufacturing which is an industry that traditionally reacts slowly to new changes. Other industries such as the insurance or retail sectors are somewhat in the middle of digital transformation implementation according to Julian, (2018).

2.2 Organizational Performance with Digital Transformation

It is evident from the real practices of corporate world that Digital Transformation brings more impact on organization's overall performance. There are instances where employees prefer technology-based culture and vise-versa. As per Muhammad, (2014) Employees performance is also related with commitment of employees with organization. High commitment results to high performance and low commitment leads toward low commitment. So, in simple when employees are so committed with organization, we will determine from that employee's performance is good. According to Yunus and Waidi, (2011) Internet and multimedia telephone and other communication systems have provided opportunities to all categories of employees to receive and send information from and to anywhere in the world. This has provided access to technical and non-technical solution to their individual and organizational problems and increase their efficiency and effectiveness. Engineers, technologist, technicians, craftsmen and artisan now use internet to search for solution, tools and materials that may help to improve performance and solve problems which have increased individual and team performance in many organizations.

The implications of the New Digital Workplace Divide research findings are evident. There is a significant and distinct difference in the attitudes, emotions and productivity of workers, depending on whether or not their employer is a technology leader or a laggard. Failure to adapt with an evolving digital workplace not only significantly increases an organization's risk of talent attrition, but also invites improper security hygiene, suggesting it's more important than ever to establish as a technology leader (Unisys, 2018).

With less time spent on manual processes, and more collaboration happening across teams, business apps improve employee performance making them believe that they are getting more done and that they are more productive towards the organization. Digital workspace employees report a significantly greater impact on personal productivity than on accomplishing more in a typical workday, with the help of business apps(Jean, 2018).

Aside from the commercial advantages, the continued transformation is probably going to vary the character of employment and physical lifestyles. Digitalization will change the traditionally rigid 8-5 work model and allow for more flexibility in terms of time and place for an increasing share of employed and self-employed people. In addition,

individuals will have greater work participation opportunities via crowdsourcing and crowd working platforms (Srinivas and Werner,2017).

There are more evidence to show that organizations benefited through digital transformation practices. As per Dimitrios and Fotis, (2019) organizational performance refers to the measurement of firm's ability to meet its aims and objectives in comparison to its competitors. The successful application of digital transformation could lead to superior performance.

Company must implement an integrated digital transformation strategy to enhance the company' performance and therefore increase the possibility of a sustainable long-term business for the company according to Shinta, (2020). Sabai Khin, (2018) explored that firms which are committed to embracing digital technologies and improve their capability to better manage the digital technology are more likely to develop innovative digital solutions that in turn improve their organizational performance.

Companies with digital workspace strategies are increasing their organization's overall performance and competitive differentiation. That's what more than 2,000 CIOs and frontline employees worldwide told (Jean, 2018). Yunus and Waidi, (2011) indicated that many industries embark on improving customer satisfaction by getting the latest technologies to improve their organizations performance, and they believe that acquisition of latest technology will improve operating practices and the quality and quantity of their goods and services. As per Srinivas and Werner, (2017) Digital transformation brings greater efficiency and effectiveness in the organization performance.

2.3 Key Technologies in Digital Transformation

There are major technologies that affecting the employee and organizational performance in the context of digital transformation. To prove that, as per Jean, (2018), Organizations with successful transformations deploy more technologies than others do. Digital technologies, tools, and methods currently used by organizations are Traditional web technologies, Cloud-based services, Mobile internet technologies, Big data, Data analytics, Internet of Things, Design thinking, Artificial-intelligence tools, Robotics, machine-learning, Augmented-reality and 3-D printing. Organizations with successful transformations are likelier than others to use more sophisticated technologies, such as data analytics, artificial intelligence, cloud computing and Internet of things (IoT).

Digital technologies encompass data analytics, traditional firms are slowly starting to transform their business due to several reasons. In data analytics, Analytics is changing the way companies can transform insight into action. New technologies allow companies to think ahead, i.e. use information gathered to improve forecasting. Knowing what happened and for what reasons is no longer sufficient. Organizations need to be kept informed about what is happening at the moment and what is likely to happen in the near future. the effects of digitalization are transforming firms and doing business will be subject to change in digital technologies according to Julian, (2018).

Ulrike et al., (2018) stated that Artificial Intelligence is part of computer science bringing human capabilities and characteristics to machines like understanding language, learning, reasoning, solving problems, etc. It has a major effect on how individuals are changing their way of acting within and outside organizations. The digitalization has shown that it has majorly changed the workforce population, the skill set needed, and the way to interact and collaborate as well as to communicate within an organization not only from employee's side but also from the leadership side and it has increased the organizational performance.

IoT is the connection from on and off switchable devices to the internet. They get a virtual presence and can connect to other objects and database data. Cloud is the provisioning of IT infrastructure (e.g., networks, servers, storage, applications, services) over the internet on demand / Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS). Within higher qualified jobs in the digitized world, a new working space is created that allows new collaborative working models due to cloud computing platforms. The software industry is one of the trendsetters regarding this working model which is based on agile development such as Scrum with principles of Lean Production. This new type of collaborative working on clouds permits quick development sprints which constantly and in real time allow managers\leaders to test the performance of each delivered work package. Furthermore, it

enables them to take decisions and direct work at a higher speed as well as to make the work performance of each team member transparent. Consequently, each team gains more empowerment based on a research by Ulrike et al., (2018).

IoT is not limited firms or sectors. They might potentially benefit all business entities to some extent. Unlike previous technological improvements, digital innovations are not bound to a firm's total assets, access to raw materials or resources. Recent developments seem to further justify the beneficial aspects of digitalization according to Julian, (2018).

Digital transformation is driven by a flood of software technologies. Embedded electronics such as microdevices with sensors and actuators connected through the IoT facilitate ubiquity. Cloud storage and services, machine learning, and AI are facilitating a convergence of IT and embedded systems. Underlying these, it has identified enabling methods, techniques, and tools as core technologies stated by Christof and Carlos, (2018).

It is important for the firms to cognizant about the mediation effect of innovation because many firms are not putting their best effort in digital innovation probably due to lack of assurance of performance outcomes of innovative digital solutions. This collection has followed the notion of which reported a significant connection of these factors with improved performance. These technologies can resolve technological challenges and may ultimately increase sustainable business performance. Moreover, they promote performance and exert significant effects on production and services. It is proven that these technologies have a positive influence on production and services, and it increases performance according to Mubarak et al., (2019).

2.4 Key Success Factors of Digital Transformation

Employee and organizational performance have also depended on many factors. As per Ivanenko and Artamonova, (2020), Digital skills mean the ability to localize, organize, understand, develop, create and disseminate information using digital technologies at different levels of competence. Understanding the driving factors and performance impact of digital innovation is important to the firms because they are the key providers of digital solutions that digitalize the firms in other industries and their innovation will further ignite the innovation in other industries based on a research by Sabai Khin, (2018).

As per Jean, (2018), there are five important factors helping to improve organizational performance. Those are, Leadership, Capability building, Empowering workers, Upgrading tools and Frequent communication.

Digital Leadership and educational material about leadership in a digital environment emphasize profound understanding and the use, as well as adoption of digital technology, and the ability to react on these technological opportunities. That is, scholars and leadership educators view optimal practices of Digital Leadership as ongoing, changing and procedural, resulting from constant interplay between digital technologies and human practices. While continuously adding practical implications to 'best practices' of Digital Leadership, research also needs to pay attention to how new 'digital discourse' will influence the ideal of a 'good leader' and 'good leadership'; how the digital era shapes leadership and how existing leadership values influence the development of digital technology stated by Janet, (2017).

Capability building is another major factor, developing talent and skills throughout the organization a fundamental action for traditional transformations is one of the most important factors for success in a digital change effort. companies with winning transformations have a better funded and more robust approach to talent than others do. Transformation success is more than three times likelier when respondents say their organizations have invested the right amount in digital talent founded by Jean, (2018). Firm's organizational culture is crucial for the implementation of digital technologies. This is also one factor why smaller businesses potentially profit more from digital innovations because they are less restricted with a leaner organizational structure. Additionally, smaller and fast growing enterprises can build their infrastructure with advanced ICT in mind, whereas established companies have to deal with legacy systems and overlapping IT infrastructure. Digital intelligence is one of the key drivers to a successful digital transformation Julian, (2018). Digital transformation plays a more nuanced role by mediating the influence of IT

capability and firm performance. Firms must recognize the importance of digital transformation and how to leverage the effect of IT capability in creating and fostering firm performance. Firms investing in digital transformation are able to align digital insights about customers with innovative processes and investments leading to improved customer experience and performance according to Joseph and Yaman, (2016).

New behaviors and ways of working through formal mechanisms, long proved as an action that supports organizational change. Another key is giving employees a say on where digitization could and should be adopted. When employees generate their own ideas about where digitization might support the business, respondents are 1.4 times more likely to report success. In an organization, key roles play parts in reinforcing change. Success is more likely when senior leaders and leaders who are engaged in the transformation all encourage employees to experiment with new ideas. These are factors under the employee empowering based on a research by Jean, (2018).

Also stated that Upgrading digital tools to make information more accessible across the organization, which more than doubles the likelihood of a successful transformation. The second is implementing digital self-serve technologies for employees, business partners, or both groups to use; transformation success is twice as likely when organizations do so. A third key, focused on technology in company operations, is organizations modifying their standard operating procedures to include new technologies. Beyond these factors, an increase in data-based decision making and in the visible use of interactive tools can also more than double the likelihood of a transformation's success in an organization. When communicating change stories, successful organizations tend to relay a richer story than others do. The elements with the greatest influence on success are clear targets for organizations' key performance indicators and clear communication of the transformation's timeline in the organization. The below table 1 indicates the key concepts and illustrations of the working study.

Table 1 Concepts and Illustrations

Concept	Illustration
Digital Transformation	Digital transformation refers to the changes in the organization`s structure, processes, products or services and business models caused by the adoption of digital technologies in order to radically improve its performance.
Organizational performance	With the implementation of technology an organization has achieved individual/employee performance and financial performance.
AI	Artificial Intelligence is part of computer science bringing human capabilities and characteristics to machines like understanding language, learning, reasoning, solving problems, etc. It has a major effect on how individuals are changing their way of acting within and outside organizations.
Data Analytics	In data analytics, Analytics is changing the way companies can transform insight into action.
IoT	IoT is the connection from on and off switchable devices to the internet.
Cloud computing	Cloud is the provisioning of IT infrastructure (e.g., networks, servers, storage, applications, services) over the internet on demand / Software-as-a-Service (SaaS), Platform-as-a-Service (PaaS), Infrastructure-as-a-Service (IaaS)
Leadership	Digital Leadership and educational material about leadership in a digital environment emphasize profound understanding and the use, as well as adoption of digital technology, and the ability to react on these technological opportunities.
Capability building	Developing talent and skills throughout the organization a fundamental action for traditional transformations is one of the most important factors for success in a digital change effort.
Empower workers	Success is more likely when senior leaders and leaders who are engaged in the transformation all encourage employees to experiment with new ideas.
Upgrading tools	Upgrading digital tools to make information more accessible across the organization, which more than doubles the likelihood of a successful transformation.
Communication	When communicating change stories of successful organizations tend to relay a richer story than others do.

Source: Dimitrios and Fotis, (2019);Elizabeth, (2018);Hecheng et al., (2020);Julian, (2018); Sabai K. et al., (2018)

3. Methodology

The main purpose of this paper is to identify the key technology and key success factor in digital transformation which support for organizational performance. These identifications were assembled using the Systematic Literature Review. In this study, a total of 30 different articles were categorized based on the potential areas, such as key technologies and success factors of digital transformation and organizational performance. The process begun with a selection of independent and dependent variables, digital transformation and organizational performance respectively. To identify related studies, a few databases like Emerald Insight, Jstor and Google Scholar that belongs to different journals which are from various disciplines, were selected. In the next step, the search was conducted to include literature that have been within a five years' period, starting from 2015 until 2020. Yet, few articles were taken into consideration from 2000s' too as those were more relevant to the study. More articles were reviewed from the areas of types of digital transformation, organizational performance, technologies and success factors.

4. Discussion

In this research the literature review was developed to identify the factors in digital transformation that affecting to improve organizational performance. The model was developed in this paper based on systematic literature review to achieve the objectives. In this research, examined the important topic of digital transformation, which has recently gained lot of interest due to its perceived unprecedented opportunities and benefits. In the digital era we are currently living in, voluminous changes are happening within and outside of the organization (João et al., 2018; Sabai K. et al., 2018). Hence, digital transformation can be applied to leverage business change and enhance decision making, by applying technologies like artificial intelligence, data analytic techniques, cloud servers and internet of things and with the skills of leadership, capability building, empower workers, upgrading tools and communication. Accordingly, the literature was reviewed in order to provide an analysis of which technology and the factor has the large impact on organizational performance (Christof, 2018; Federico et al., 2020; Julian, 2018).

Consequently, technologies were discussed, as well as its characteristics and importance. Moreover, some of the digital tools and methods in particular were examined. Thus, key success factors discussed. Furthermore, model developed and identified that key technologies and key success factors important to improve organizational performance.

5. Conclusion and Future Avenues

Based on the reviewed literature the below model (Figure 1) was developed. Key technologies and key success factors have identified as the factors, directly effect on organizational performance. It is further evident that there is a direct association between key technologies and success factors on organizational performance.

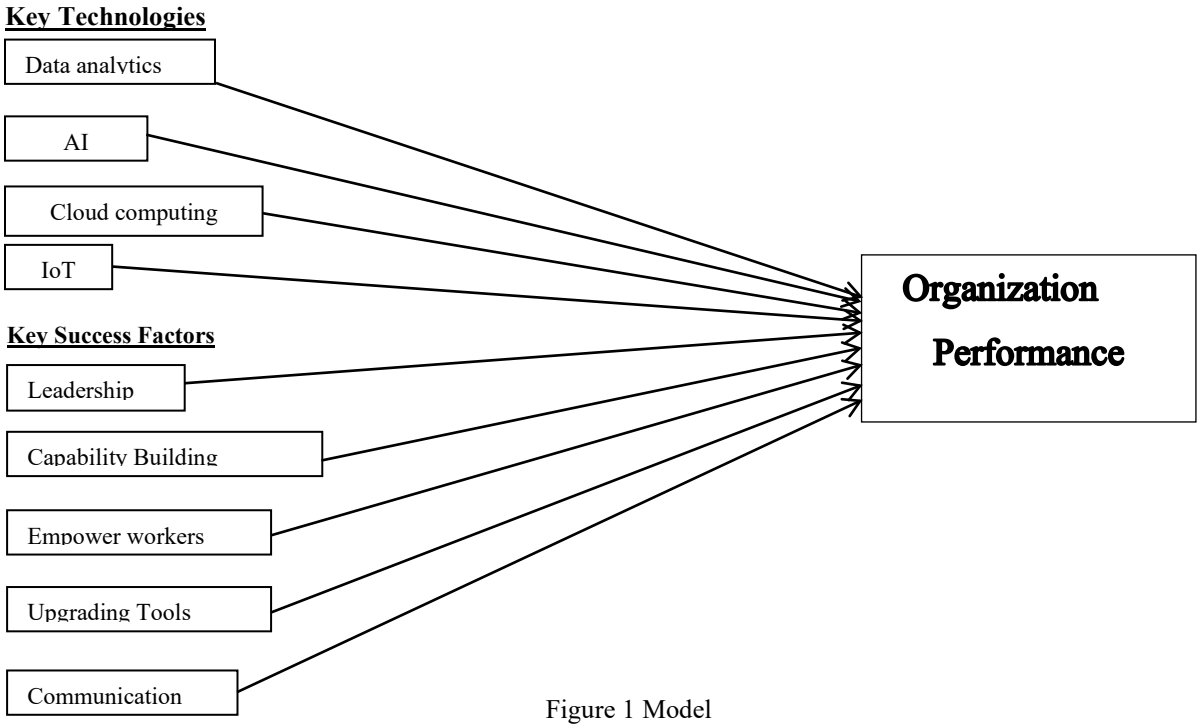

Figure 1 Model

By applying such technologies and success factors can be extracted and exploited to enhance decision making and support informed decisions. It was found that digital transformation can improve the performance in various organizational areas, such as employee and financial. Additionally, its benefits can serve different sectors and industries, such as healthcare, retail, telecom, manufacturing, etc. Accordingly, this research has provided the people and the organizations with examples of the various technologies and skills which can be applied. This gives users an idea of the necessary technologies required, as well as developers an idea of what they can do to provide more enhanced solutions for digital transformation in support of decision making. Thus, the support of digital transformation to performance was depicted.

Finally, any new technology, if applied correctly can bring with it several potential benefits and innovations, which is a remarkable field with a bright future, if approached correctly. However, digital transformation is very difficult to deal with. It requires proper management, integration, federation, processing, analyzing, etc. With all the problems faced with traditional management, digital transformation exponentially increases these difficulties due to additional volumes, velocities, and varieties of data and sources which have to be dealt with. Therefore, future research can focus on providing a roadmap or framework digital transformation management which can encompass the previously stated difficulties. We believe that digital transformation is of great significance in this era of technology overflow and can provide unforeseen insights and benefits to decision makers in various areas. If properly exploited and applied, digital transformation has the potential to provide a basis for advancements, on the scientific, technological, and humanitarian levels.

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