ICISS 2022

9TH INTERNATIONAL CONFERENCE ON ICT FOR SMART SOCIETY 2022

RECOVER TOGETHER, RECOVER STRONGER & SMARTER SMARTIZATION, GOVERNANCE & COLLABORATION

PROCEEDING
ISBN : 978-1-6654-7135-0

10TH - 11TH AUGUST 2022

Supported by:

IEEE | SCCIC SMART CITY & COMMUNITY INNOVATION CENTER | G20 INDONESIA 2022 | T20 INDONESIA 2022 | HAKTEKNAS

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2022 International Conference on ICT for Smart Society (ICISS) | 978-1-6654-7135-0/22/$31.00 ©2022 IEEE | DOI: 10.1109/ICISS55894.2022.9915045

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Digital Transformation Framework: A Review

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2022 International Conference on ICT for Smart Society (ICISS) | 978-1-6654-7135-0/22/$31.00 ©2022 IEEE | DOI: 10.1109/ICISS55894.2022.9915169

***Abstract*— The world is now living in the fourth industrial revolution, which has resulted in the widespread usage of digital technology in many parts of people's lives. Organizations must carry out digital transformation to survive in the era of digitalization. Through digital transformation, organizations gain a new perspective on managing organizations, optimizing organization operations, and changing business models more efficiently. This study will perform a literature review on several digital transformation frameworks that may be used for the implementation of digital transformation in the organization to have a thorough understanding of the subject.**

Keywords—Digital Transformation, Framework, Organization Capabilities.

I. INTRODUCTION

Currently, the world is entering the industrial revolution 4.0. Digital technology affects all human life thus creating challenges for organizations that run their businesses traditionally [1]. How can organizations survive and be competitive in the face of the digital impact of technology? One answer is to carry out digital transformation (DT). DT refers to the process by which organizations respond to change by implementing digital technologies such as mobile computing, artificial intelligence, cloud computing, and the Internet of Things (IoT) to improve an organization's day-to-day operations [2]. As a result, these technologies are changing the way businesses operate, creating value and providing different experiences for the different stakeholders involved [3].

Digital technology also affects higher education institutions. Digital technology allows digital products to be used to increase the number of new students by simplifying the process of accepting new students, using digital marketing to attract prospective students, reducing administrative activities usually carried out by staff and lecturers, and changing the teaching and learning process that has been done face-to-face [4].

According to Forbes, 84% of digital transformation initiatives fail. According to the Everest Group study, 73% of companies do not benefit from their digital transformation process [5].

The cause of failure is due to the mistake that digital transformation focuses on technology. Start with the objective rather than the technology. The hype around developing technology can sometimes confuse our judgment. We see something bright and desire it, but we need to think about how it will fit into our company environment first. This is accomplished by prioritizing goals above technology. Your digital transformation strategy should be goal-oriented [6].

After you've identified your goal, you may begin to consider which technologies will best assist you in achieving it. Of course, the main purpose of any digital transformation is to benefit the business, whether it's through improving customer experience, employee engagement, or just gaining a reasonable return on investment (ROI). This isn't something that every technology can provide; it's up to you to decide [6].

Digital transformation does not happen by itself; it is the result of employees' efforts and activities. Employees, on the other hand, cannot perform their magic without a specific target. Furthermore, if you don't know what the organization will accomplish after the transformation, you risk wasting a lot of money and obtaining nothing in return [6].

You must first create a clear business goal that is based on effect before you can begin your digital transformation journey. What influence will this aim have on the operation, and are your staff aware of your objectives?

This paper aims to find out the strategies that need to be carried out by organizations so that the implementation of digital transformation is successful by conducting a literature study on several digital transformation frameworks that have been developed by other researchers.

It is hoped that with this research, organizations can use the strategies described in this research so that digital transformation can be successful.

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II. Research Methodology

We can find out the digital transformation framework explored by previous researchers by analyzing various literature linked to digital transformation, which we can adopt while implementing digital transformation.

Paper searching using an online scientific database. The databases are Taylor & Francis Online (https://www.tandfonline.com), IEEEXplore (https://ieeexplore.ieee.org), and ACM Digital Library (https://dl.acm.org) and from the google search engine.

To discover combinations of keywords relevant to the research issue, the literature review applied the following search phrase: Digital Transformation Model, Digital Transformation Framework.

III. Research Result

A. Digital Transformation

The term "digital transformation" currently has no widely accepted definition. Therefore, in this study, we try to formulate a definition of digital transformation from the results of conducting a literature review.

Digital transformation (DT) is the process by which an organization responds to changes in the environment by transforming its value-creation processes with the use of digital technologies like mobile computing, artificial intelligence, cloud computing, and the Internet of Things (IoT) [2].

Changes in working techniques, positions and business solutions brought about by the usage of digital technology in an organization or the company's operational environment are known as digital transformation [7].

Digital transformation is a significant shift that accelerates corporate operations, processes, competences, and models to fully capitalize on developments and opportunities in digital technology and their societal effect in a strategic and prioritized manner. [8].

Digital transformation refers to the incorporation of digital technology into all aspects of your business, fundamentally altering the way you function and provide value to customers. It is also a culture transformation that requires businesses to continuously challenge the existing quo, experiment, and accept failure. [9].

So, DT is doing things differently and starting new businesses by combining digital technology with the actual and virtual worlds..

B. Digital Transformation Framework.

The Digital Transformation Framework was developed by several companies such as McKinsey, PricewaterhouseCooper, Boston Consulting Group (BCG), and Deloitte. In addition, several educational institutions are also conducting research on digital transformation frameworks.

1) McKinsey Digital Transformation Framework

McKinsey has emphasized the most important elements of the business digital transformation cycle: Defining Value, Launch, Acceleration, and Scaling Up [10].

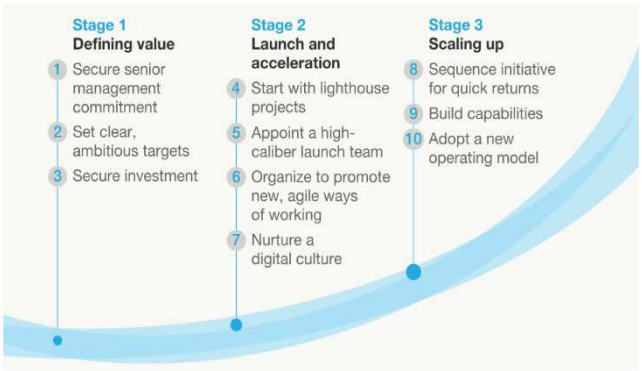

Fig. 1. McKinsey Digital Transformation Framework

In this framework 3 stages must be carried out when carrying out digital transformation, namely:

a) Defining Value.

To get a digital transformation into a promising start, an organization must prioritize it and define the scope of the project. It's tough for the faint of heart, but CEOs who see the value of strong management commitment, are ready to invest significantly, and establish clear, ambitious targets are on the right route.

b) Launch and Acceleration

Starting a change effort is simple and quick. It is difficult to keep them alive and allow them to reproduce. Organizations frequently decide to invest in many initiatives, allocate personnel to them, and even form different departments. When efforts fail to yield fruit and traditional company practices remain mostly unaltered, leaders incorrectly assume that there is no need for urgency since the market is unwilling to adapt. Companies should carefully decide which projects to start with and support them with appropriate resources to guarantee that early attempts succeed and gain momentum. A high-quality launch team, frequently lead by a chief digital officer (CDO), organizational structure considerations, and the creation of digital culture are all prerequisites.

c) Scaling Up

Businesses should have achieved substantial progress by the 18-month period. They should have a couple projects up and running by now, and they should be seeing some success. But, just when everything appears to be in order, it's time to accelerate the process and take things to the next level. This necessitates planning and preparation for future tasks. Other specialists will also need to be properly recruited. And, at some point, a whole new operating model will be necessary to reap the full benefits of the transition..

2) PricewaterhouseCooper (PwC Digital Transformation Framework)

PricewaterhouseCoopers Digital Transformation Framework identifies five phases

- Develop a strategy (Shape clear digital transformation strategy)
- Conceptualization (Development of digital transformation roadmap)
- Construction (Development of digital Business Platform, integrating ecosystem capabilities to maximize impact).

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- Implementation (Translate strategy into an actionable plan, ensure implementation is consistent with the construction).
- Review (service level efficiency monitoring and business model improvement)

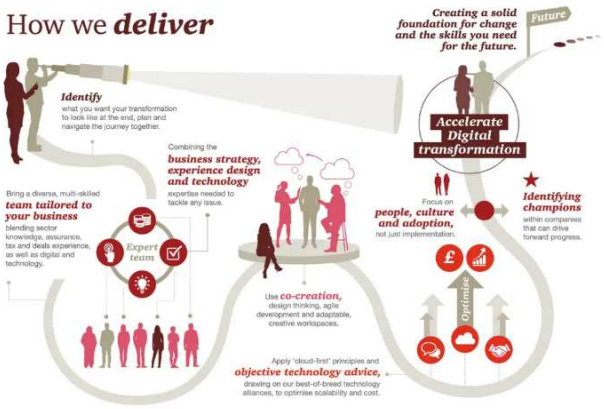

Fig. 2. PwC Digital Transformation Framework

3) Deloitte Digital Transformation Framework

Digital transformation is defined as a company that uses technology to continuously enhance all aspects of its business models (what it offers, how it interacts with customers, and how it runs). DT To restructure the business, redefine business models, focus on customer experiences, rethink the brand, and discover new opportunities via rapid innovation. DT also transforms the firm by introducing new methods of working, changing the culture, and establishing competencies that are suited for this circumstance.

Deloitte introduces 3 steps in digital transformation, namely [11] :

- Imagine. The definition of ambition is "getting the right focus." The beginning of digital change is ambition. This phase focuses on setting goals as soon as possible and charting a path to success by building a roadmap to achieve those goals. Create a unified concept portfolio based on current trends, disruptors, and customer requirements.
- Deliver. Get the concept right with Ambition Design. In this phase, establish a detailed and empathic knowledge of users' desires and behaviors to design solutions for them. To make ideas feasible and put the vision into action, design, test, and learn in the market using minimal viable solutions.
- Run. Ambition Delivery: Take the company to the next level. This phase achieves and scales the strategy using flexible and integrated delivery teams.

Fig. 3. Deloitte Digital Transformation Framework

4) Garuda Digital Transformation Framework

Garuda Digital Transformation Framework 1.0 was developed by Smart City and Community Innovation Center (SCCIC) [9].

Fig. 4. Garuda Digital Transformation Framework

Garuda Digital Transformation Framework consists of 4 parts, namely

- Prepare digital culture in the organization and leaders are prepared to be ready for digital transformation. The organization prepares an assessment to know the readiness of leadership, culture, commitment, and any other aspect.
- Defining the organization's digital vision and strategy. In this section, an analysis will be carried out using SWOT analysis or PESTLE analysis to identify current conditions and identify future organizational digital transformation goals.
- Identify digital transformation opportunities to be carried out in the organization (Find digital technology that can help to achieve the organization's goals in digitizing customer experience, product, operation, and organization).
- Making plans and roadmaps for the realization of digital transformation (we can prioritize initiatives that have a large impact and low effort and each plan must be measurable in its achievements).

5) BCG Digital Transformation Framework

Although digital transformation isn't a new issue for business leaders, COVID-19 has given it a boost as companies strive to increase their agility, speed, and data-driven decision-making.

Boston Consulting Group (BCG) experts explain the six steps that may make or break a digital shift, as well as how your firm can handle them efficiently [12].

- Craft a clear integrated strategy (The success of digital transformation begins with a strategy that clearly defines the vision, mission, and goals of the organization's digitalization).
- Commit the leadership from top to middle management (The success of digital transformation depends on the commitment of organizational leaders to implementing policies related to digital transformation).
- Put the best people in the right Place
- Adopt an agile governance mindset
- Monitor and measure your digital transformation progress
- Create a business-led Tech and Data Platform.

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IV. Conclusion

From the five frameworks studied in this paper, it can be concluded that DT creates a new business model by using digital technology fundamentally changing how the organization operates and delivers value to customers. It is not just automating or inserting technology into the existing process but needs cultural change from the employees. Our research highlighted is to find a DT framework that is suitable for use in implementing it in higher education in Indonesia. The main purpose of this review is to gain a better understanding of the DT framework. We hope that this review will give researchers and practitioners a better understanding of the various DT frameworks that exist. Overall, the findings of this work suggest that current research in this area is insufficient, and future research should focus more on the strengths and weaknesses of each framework and case studies of the successful use of these frameworks when implemented in the Higher Education institutions.

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