



How Digital Transformation Impacting the Product Innovation

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History:

Submit:

Review:

Publish:

Keywords:

Digital Transformation,
Technologies, Innovation,
Product, Organizations

ABSTRACT

In the last decade, the emergence of various set of novel digital technologies has transformed innovation and entrepreneurship very significantly. One of the reasons why organizations are shifting to digital transformation is the velocity of volatility in markets. The research objective is to identify the impact of digital transformations' key attributes on an organization's innovation specifically in terms of creating new products and the role of different variables on this capability. Researcher used systematic literature review as the method. The results show that the transformation of digital is more than just upgrading technologies. And researcher found out the main pillars of digital transformation, which will be mentioned in the article. In the end, the researcher provides recommendation for future research.

INTRODUCTION

Starting from 2013, digitals were ubiquitous, technology is quickly progressing, and organizations are facing massive changes (Colbert et al., 2016). Technology Information and communication spread to organizations and associated digital and physical world which getting closer (Schwarz Müller et al., 2018). The emergence of a distinct set of new and powerful digital technologies, digital platforms, and digital infrastructures has transpose both innovation and entrepreneurship significantly with broad organizational and policy implications (Nambisan et al., 2019). Definitely, in the contemporary business media, the word "digital transformation" has come into widespread to indicates the transformational or disruptive implications of digital technologies for businesses such as new business models, new types of products/services, as well as customers' experience (Boutetière et al., 2018; Clint Boulton, 2021).

A new trend a business must-have for sustainability is a digital transformation that is already applied by all industries without exceptions. It allows practices of innovation, creating new value, and also new business models. In leadership agendas, digital transformation became a high priority, almost 90% of leaders of U.S and U.K. businesses expecting IT and digital technologies to contribute significance comprehensively (Almaazmi et al., 2021). Five top traded public companies based on market capitalization such Alphabet, Apple, Amazon.com, Facebook, and Microsoft, have identical in how they faced the changes, reshaping business models, and also align complementarities for sustainability (Teece, 2007). Digital transformation as a strategic priority is never more being questioned. It's about how to embody digital technologies themselves as a competitive advantage (Matt et al., 2016).

Reforming strategy is a major consideration in acquaintance with companies' long-term survival and prosperity, and they changed the strategic view and capabilities for remodeling path dependence (Flier et al., 2003; Kuratko et al., 2015; Schmitt et al., 2018). Changes that digital transformation brings not

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only shift the companies into tech companies but also alter the marketing landscape, client engagement, as well as commerce. Several reasons that support organizations to shift to digital transformation are the speed of volatility in the market requires novel digital solutions to defend industry leadership's position, the presence of digital start-ups mess the competition up, and transformed the business models. Moreover, it drives customers' expectations with the coming of new players. Hence, the upcoming challenge in organizations is to sustain success by innovating to differentiate them from others (Almaazmi et al., 2021).

The Digital era enables new factors for producing, sharing, recovering, and storing both data and information, as well as the knowledge that impact the way organizations manage their framework (Dougherty & Dunne, 2012; M. Fitzgerald, N. Kruschwitz, Didier Bonnet, 2014; Whelan et al., 2010). In most cases, conventional logic in knowledge management for innovation is no longer used; by contrast, they should discover new ways to manage the whole ecosystem (Rayna & Striukova, 2014; Teece, 2007; Van der Borgh et al., 2012). Digital transformation concerns aligning organizations with the requirements of the digital environment by enhancing the appetite for risk, investing in digital opportunities for employees, and streamlining the structure of organization for agility. Digital needs a shifting of mindset from all sizes and sectors so they are able to position themselves to compete now and then (Kane et al., 2016).

Faster digitalization and business models metamorphosis can cast up multifold revenues to economic growth, additional international investment, and enhanced competitiveness internationally (Yanovska et al., 2019). However, the transformation of digital should come from the top, and pioneer efforts were nominated by particular executive or committee. Small steps should be taken by companies via pilot and skunkworks, and invest in the successful one (SR et al., 2014). The important factors being considered were agility and open innovation. It is considered to maintain competitiveness and eventually for the survival of the company itself (Burchardt & Maisch, 2019). The digital transformation's final goal is to alter the existing situation and create new products, new production processes, and beyond new markets. Digital transformation supports organizations with competitive advantages (Backoff et al., 1985; Lozic, 2019; Shannak et al., 2012). In addition, the agility of organizations in the creation and innovation of products could increase the competitive advantage to these organizations compare to competitors and bring new value and perhaps new markets to enter (Alkalha et al., 2012; Alshurideh, n.d.; ELSamen & Alshurideh, 2012; Ulya, 2020; Waffnen-und Kostumkunde, n.d.).

1. Research question 1: How does the digital transformation Impact Product Innovation?
2. Research question 2: How does the Leadership Impact Product Innovation post successful digital transformation?
3. Research question 3: How does the work Culture Impact Product Innovation Post successful digital transformation?
4. Research question 4: How does the digital Skills Impact Product Innovation Post successful digital transformation?
5. Research question 5: How does the digital business Processes Impact Product Innovation Post successful digital transformation?
6. Research question 6: How does the Technology Impact Product Innovation Post successful digital transformation?

The researcher's goal is to fill the gap by answering the question of the impact of digital transformations' key attributes on an organization's innovation specifically in terms of creating new products and the role of different variables on this capability. Owing to the limited studies in this field, identified during the stage of articles selection, so that, this objective was chosen.

METHOD

This research adopts "explore the effect of post-digital transformation" as its main object. The approach being used is SLR, Systematic Literature Review. Systematic Literature Review "is a well-planned review to answer specific research questions using a systematic and explicit methodology to identify, select, and critically evaluate results of the studies included in the literature review" (Acta Paul Enfem, 2007). Several steps in the systematic literature review are (1) Research identification, (2) Research strategy, (3) Study selection, (4)

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Quality assessment, (5) Data Extraction, and (6) Data synthesis and analysis. And there are several criteria for this systematic review. Firstly, the range of years from 2012 to 2020. The article should be in English. Type of the studies is conference paper and proceeding, magazine, newspapers, and scholarly journals. The study design is meta-analyses and controlled and the measurement is study the effect of digital transformation on organization. The context of the study should be related to digital transformation and implementation in different organizations and digital innovation. And the outcomes expected are the area and dimensions of impact.

Searching was conducted on manifold databases and search engines which accomplish with appropriate tuning and fully put attention to search within the title. Here we presented numbers of articles per search engine.

Table 1
Articles per search engine

Search Engine	Numbers of Articles
ProQuest	152
Google Scholar	288
Scopus	128

With a lot of numbers of articles, then it passed through a quick scan on the abstract to find the related articles for this research. The steps were starting from (1) Define keywords, inclusion, and exclusion, (2) Define data source, type of documents, and publication period, (3) Tune the search within title and abstract, (4) Select 4 articles from the reference list of other selected articles. From those all, just 25 articles were selected and lastly, there were additional 4 articles added to the list. Eventually, total of articles was selected were 29 articles.

In selecting articles, manual quality assessment was implemented in this method. It simply by validating the content of articles and how it strongly related to the subject. The quality assessment used 9 questions to identify the quality of the articles. The quality assessment questions are as below:

1. Are the research aims specified?
2. Was the study designed to achieve these aims?
3. Are the variables considered by the study specified?
4. Is the study context/discipline specified?
5. Are the data collection methods adequately detailed?
6. Does the study explain the reliability/validity of the measures?
7. Are the statistical techniques used to analyze the data adequately described?
8. Do the results add to the literature?
9. Does the study add to your knowledge or understanding?

RESULTS AND DISCUSSION

Country Wise Distribution

The picked articles were carried on across regions in the world as depicted in Fig.1 There are seven articles that did not mention the region and eight articles were conducted globally. The graph shows the selected article's region. The graph illustrates digital transformation is now a global trending and caught global attention.

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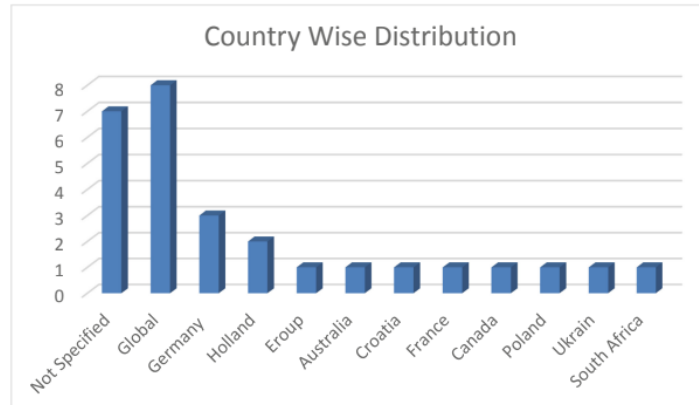


Fig. 1 Country Wise Distribution

Industry Wise Distribution

Target industries in the selected articles are very various. Nevertheless, there are 11 articles that its industry did not identify. The researcher provides below graph for showing the type of industries based on the articles selected.

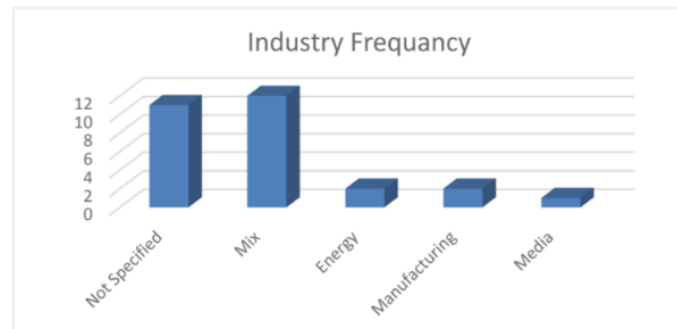


Fig 2. Industry Wise Distribution of Articles

Sample Size Used

In size of sampling, the researcher divided it became 5 clusters, starting from 1-9, 10-99, 100-999, and 1000-9999. And also, there were 10 articles that didn't mention their sample size. All are shown as Fig.3

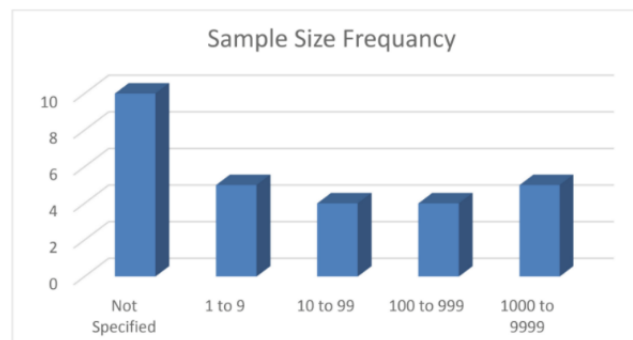


Fig 3. Sample Size Frequency

CONCLUSIONS

All the review articles concur if transformation of digital is more than just upgrading technologies, several studies discussed transformation without altering in technology. Simultaneously, new skills, business processes, work culture, as well as digital leadership are acquired by the changing of business model. And it became the main pillar for the digital transformation. Even so, after doing the

transformation, what result will be brought by the pillars and its impact on the performance of the organization haven't been analyzed yet. To conclude, future research has to put attention to post transformation due to current researches were focuses on pre-digital transformation and the stages of digital transformation. In this research, we still could not discover research tests and evaluate the result of digital transformation and advancement achieved in organizations.

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