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Research Framework of the Factors Affecting the Success of Digital Transformation for Vietnam Telecom Industry

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Abstract

During the Fourth Industrial Revolution (Industry 4.0), Digital Transformation (DS) is among the most mentioned keywords in government's policies, directives or guidelines, especially in technology and telecommunication businesses. This paper attempts to develop a framework to analyze the factors influencing the success of the digital transformation. The framework is built from the qualitative methodology, consisting of five factors: (i) Leadership, (ii) Human Resources, (iii) Technology, (iv) Processing and (v) Business Strategy. The chosen elements can be generalized for all telecom businesses.

Keywords: Digital transformation, digitalization, telecommunication enterprises, industrial revolution.

1. Introduction

DT is becoming a popular trend in businesses, organizations and society in the 4.0 industrial revolution. As reported by IDC Global Data Corporation, nearly 90% of businesses have started the digitalization process, of which, more than 30% of business leaders recommend that digitalization implementation is a pivotal process.

The goal of DT is to create added values, new products, services and updated process that will ultimately increase operation efficiency. As recorded by Microsoft in 2018, digitization of business helps achieve higher productivity, higher profit margins, lower cost and more customer engagement with earnings increase at least 17%. [1]

In Vietnam, different levels of government have initiated and directed all sectors to promote application of science and technology in their manufacturing process to actively participate in the Fourth Industrial Revolution, using digital transformation as the main tool.

Then, from the global scale to the national level, DT guidelines and directives are inevitable. The question now is what the local telecommunication enterprises can do to promote a successful digitalization process, contributing to the Vietnamese digital economy.

This paper aims to propose a research model framework that include the most influential factors in completing the digitalization process of telecommunication enterprises.

2. Materials and methods

The study uses the qualitative method that synthesize and analyze related researches.

2.1 Digital transformation

According to Schwertner (2017), digital transformation is the application of technology in building new business models, processes, software and systems that deliver higher margins, unique competitive advantage, and greater efficiency. [2] The Organization for Economic Co-operation and Development (OECD, 2018) states that DT includes the economic and social impacts of digitalization. Digitization is the conversion of analog data and processes into machine learning format. Moreover, the transformation utilizes technologies, data and their connections to enhance existing operations. [3]

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Hence, digital transformation means modifying and upgrading the current method with an advanced and cost-efficient operation chain. In other words, the ultimate goal of the change is to lean towards increasing productivity, production quality and efficiency, as well as creating new products and services.

Siebel (2019) finds that the scope and implication of DT is fluid, and its impact is awaiting to be fully recognized. It is quite common for the general public to misuse digitization, digitalization and digital transformation since they are all built on information technology. Furthermore, the four fundamental theories that are of essences of DT are cloud computing, big data, internet of things (IoT) and artificial intelligence (AI).[4]

3. Digital transformation in Vietnamese Telecom enterprises

As shown in the Vietnam Information Technology Market Report 2020, the telecommunication industry has grown by nearly 19% with the contribution of 50,000 technology enterprises (TOPDev, 2020).[5]

The Electronical Government Development Index (EGDI) in 2020 is 0.6667, rank at 86th in 193 United Nation countries and 6th in 11 Southeast Asian countries, after Singapore, Malaysia, Thailand, Brunei and Philippines.

From 2020, Vietnam aims to be recognized in the top 50 countries in 2030 by EGDI for the dynamic development of digitization in telecommunication businesses.

To manifest this ambition, local telecom companies such as MobiFone, Viettel and VNPT have developed new initiatives – the focus on 5G network and established more international connection for a mutual benefit alliance.

4. Related studies

Trenerry and partners has identified and put together the key factors for DT as a multi- level model, starting from individual, and group to an organizational level. The author considers that (i) clear long-term business strategy, (ii)

leader's expertise, (iii) human resources and (iv) technology are the key determinants for a successful digitization process.[6]

In a case study of an efficient DT company, McKinsey (2020) argues that businesses must

(i) set a specific DT goal, (ii) develop a well-thought and optimize approach, (iii) have a digital background leadership team, and (iv) account for the external environment.[7]

Clark (2019) has proposed four factors for a smooth transformation, including (i) improved workflow, ii) human resources, (iii) online procedure and (iv) adaptability.[8]

Meanwhile, Chu Ba Quyet (2021) applied the Technology – Organization – Environment (TOE) analytical framework to analyze the factors affecting the success of DT in businesses as follows:[9]

- Technology factors: the process of digitization, cyber security and data availability;
- Organizational factors: business strategy, human resources, business structure and operational guidelines;

Environmental factors: customer choice, logistics options, customer service and government policies.

Moreover, Trinh Xuan Hung (2020) identifies the determinants of DT are (i) innovative digital solutions, (ii) business platform, (iii) disruptive technologies and (iv) corporate value and culture.[10]

5. Results & Discussion

Table 1 helps summarize the factors chosen from related studies. As shown in the table, some of the factors that are trusted in many studies are business strategy, knowledgeable leadership, operational procedure, human resources and technology.

Table 1: Summary of the common factors in related studies.

Factors Studies	Business Strategy	Leadership	External Environment	Workflow	Human Resources	Adaptability	Technology	Cyber Security	Digitization
Trenerry et al. (2021)	+	+			+		+		
McKinsey (2020)	+	+	+						
Clark (2019)				+	+	+			
Chu Ba Quyet (2021)	+			+	+		+	+	+
Trinh Xuan Hung (2020)		+			+		+		

Source: Author (2022)

Leadership is a vital element that shapes the DT process and its outcome from the early stage. It proves a leader's ability to motivate and influence teammates to dedicate in a common goal and collective activities. [11,12] From there, the author comes up with the hypothesis that:

- Leadership has a positive correlation with the success of digital transformation for Vietnamese telecommunication enterprises.

Employees' suitable skills and competencies are utmost important when going through the transformation. With the right expertise, employees can plan and implement a

smooth and efficient process.[13] From there, the author comes up with the hypothesis that:

Human resource correlates with the success of digital transformation for Vietnamese telecommunication enterprises.

The development of new technologies such as AI, cloud computing, IoT, big data and robotics are rapidly breaking digital barriers, being the pillars for DT acceleration. From there, the author comes up with the hypothesis that:

- Technology correlates with the success of digital transformation for Vietnamese telecommunication enterprises.

The management system has a crucial impact on the innovation process. Specifically, a well-designed and smooth operating system will positively affect productivity and the business mechanism that will, in turn, promote DT. The author comes up with the hypothesis that:

- Workflow correlates with the success of digital transformation for Vietnamese telecommunication enterprises.

It is quite challenging for an established firm to thrive further in the long term if they fail to understand the key difficulties of the company. To identify and predict future

risk and problems, the company needs a good roadmap. Then, elevating business strategy will require mobilizing synergy from existing resources and opportunities.

- Business strategy correlates with the success of digital transformation for Vietnamese telecommunication enterprises.

Based on above arguments, the author synthesizes and develops below research framework for the factors affecting a successful digital transformation for Vietnamese enterprises in Figure 1.

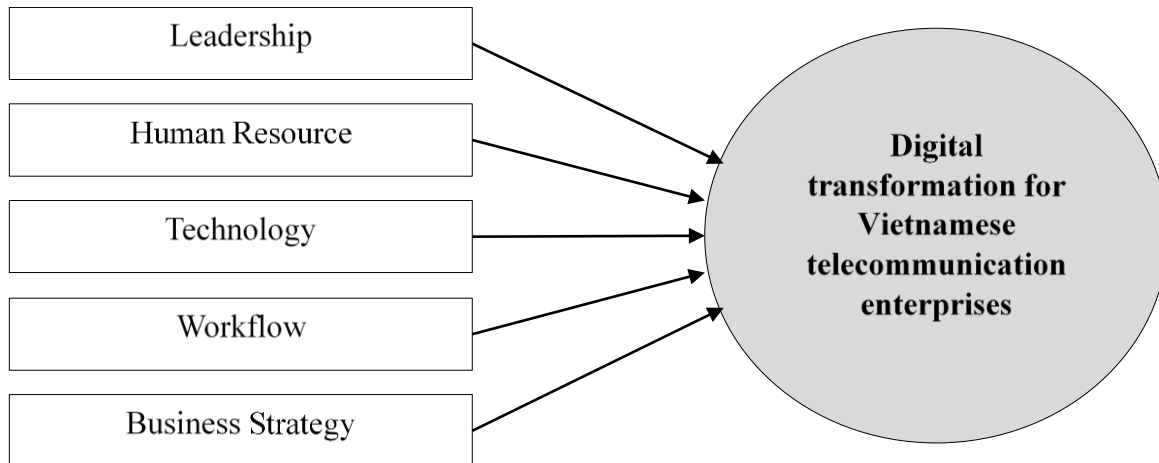


Fig. 1: Research framework of the factors affecting the success of digital transformation for Vietnam telecom industry.
Source: Author (2022)

6. Conclusions and Suggestions

With the proposal of the research framework above (showing the cause-and-effect relationship) in the context of general factors mentioned in part 1 and 2, the author recommends choosing the quantitative research methods (regression model, Structural Equation Modeling), data collection through survey tables for futures studies.

This model is suitable for the majority of Vietnamese telecommunication enterprises from the generalization point. However, with a specific case of one telecom company, the researcher would need to consider more factors tailored to the nature of business and external environment.

Besides the key elements listed in the structural model, a number of components of scale, business characteristics, external environment, cyber security, etc should also be considered when implementing digitization.

According to Luu Thi Thanh Mai (2021), to meet the needs of digital transformation by 2030, digital human resource management is one of the three spearheads that need to be change and developed. Therefore, a number of solutions for digital human resources are proposed, such as developing a digital ecosystem, training STEAM ((Science- Technology-Engineering-Art-Mathematics) and “Aglility”.[14]

Overall, the research results support the application of factors such as leadership, human resources, technology, workflow and business strategy to explain the digital transformation success of Vietnamese telecom enterprises.

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