Synthesis of Vocational Education College Transformation Process toward High-Performance Digital Organization

Thanasarn Rujira, Prachyanun Nilsook, and Panita Wannapiroon

***Abstract*—In the 21st century world, dynamic challenges bring about changes in the global economic and social context. Due to the digital revolution, the fourth industrial revolution and the demand for skilled workforce in the 21st century, Vocational Education College are required to prepare and formulate guidelines for transformation toward high performance digital organization in order to work in the same way with efficiency. The purpose of this research was follows: to synthesis of digital transformation framework, to study the component of transformation Vocational Education Colleges, to synthesis of digital organization, to synthesis of high performance organization for Vocational Education Colleges, and to synthesis of the process to transformation from the Vocational Education Colleges to the high-performance digital organization which have been studied from theories, documents and researches related to digital transformation, high performance organization, digital organization and operating process within Vocational Education College. The results of the research showed that Vocational Education College transformation process toward high performance digital organization consist of five pillars which are Policy is the digital transformation process for college management operations, Process is the digital transformation process for work process and learning management, People is a digital transformation process for personnel within the college, Stakeholder is a digital transformation process for create collaborating with establishment, and communities, and Infrastructure is a digital transformation process for educational institutions' infrastructure which will help to transform Vocational Education College toward the High Performance Digital Organization effectively.**

***Index Terms*—Digital transformation, high performance organization, digital organization.**

I. Introduction

The dynamic challenges of the 21st century cause a change in the global economic and social context. Due to the Digital Revolution, The Fourth Industrial Revolution, the impact of being an ASEAN Community and the demand for skilled workforce in the 21st century including changes in the population structure that causes the country to enter an aging society and the behavior of the population that changes according to globalization. Affecting the education system that needs to be adjusted to meet and support such challenges. Therefore, it is necessary for Thailand to reform education so that the education system is the main mechanism of driving the country. [1] The digital transformation of the organization is urgently needed in developing countries. The digital transition of the organization is urgently needed in developing countries whether in the industrial sector, business sector, government, including the education sector in educational management at the primary, secondary, vocational and higher education levels. Many schools and universities have adopted digital technology to manage and improve strategies and new plans. [2]

Digital technology is therefore an important factor for modernization of the organization and to support this rapid change. By applying digital technology as part of the digital transformation to change the traditional work system to more technology in order to provide a new business model, modern processes, and creating excellent products and services. [3], [4] And to increase the efficiency and competitiveness of that organization. The organizational change to be in line with the guidelines would not only be an investment in modern digital technology, but also a consistent change in business operations. It is necessary to integrate both digital technology and operational processes in order to connect business processes, reduce information technology redundancy, and support various operations within the organization to be convenient and fast. Therefore, there should be a guideline for the organization transformation in the form of Enterprise Architecture (EA) in order to improve the efficiency of internal operations. [5] Including setting goals in the High Performing Organization (HPO), which has the ability to transform into an organization of innovation and encouraging people in the organization to maintain a high-performance organization sustainably. As well as being able to drive the organization to change without sticking to the system. [6] Office of the Vocational Education Commission, which is an educational organization that operates in the production and development of manpower to meet the needs of workforce in the development of that important country. It is considered a necessity to transformation to an organization in the digital age that is a high-performance organization so that the organization can efficiently produce quality and standardized manpower in line with economic and social development. Resulting in increasing the country's competitiveness which is in line with the organization's vision for the organization to be comparable to an international level.

The researcher saw this importance and conducted research on the synthesis of Vocational Education College transformation process toward high performance digital organization to provide direction for vocational education institutions in preparing and setting guidelines for transformation from an organization to a high performance digital organization in the same direction efficiency.

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II. Purpose

1) Synthesis of transformation Vocational Education Colleges framework
2) Study the component of transformation Vocational Education Colleges quality standards according to vocational education standards 2018.
3) Synthesis of digital organizations for Vocational Education Colleges
4) Synthesis of high performance organizations for Vocational Education Colleges
5) Synthesis of the process to transformation from the Vocational Education Colleges to the high-performance digital organization

III. Literature Review

A. Digital Transformation

Digital Transformation is the process of changing an organization or business by using digital technology as a tool to change or improve the organization or business to be more ready in the digital age. Since strategic planning, business targeting, operations, production processes, marketing, and organizational culture adjustment. In addition, the vision of leaders who are ready to accept changes in availability and use of innovations for the benefit and collection of data in order to analyze the operational decisions of the organization and to enable the business to change quickly and readily Changes that may occur in the digital age. [7] Digital transformation is difficult for firms or organizations with traditional concepts and management but it's not too difficult to the point of not being able to change anything. In the era of digital technology, rapidly changing behavior of people of all ages and there is a leap in technology development. If the business does not adjust in time, may enter a crisis or have to close the business. Therefore, digital technology is important for leaders or managers to understand and set clear goals to promote both short-term and long-term operations strategies of the organization in the future. [8] Digital transformation often bring new digital technologies such as social media, mobile devices, advanced data analytics, cloud computing, and the Internet of Things (IoT). [9]

B. High Performance Organization

High Performance Organization (HPO) or an organization with excellence is an organization with high performance, sustainable success, excellent performance over competitors. High performance organizations have received widespread attention in the United States, both in the public and private sectors. [10] Most high-performing organizations tend to have good image and performance. In Thailand, the organization recognizes the importance and necessity of being a high performance organization and focuses on moving towards a high performance organization. It is an alternative to organizational development in modern times. With the changing times, the relationship between the organization and employees has changed. From the past, long-term employment has resulted in employees being loyal to the organization, while the current employment period has decreased, which is also affected by compensation and compensation affects employees as well. The compensation to the employees with fairness and appropriateness creates satisfaction and results in attachment to the organization. And then employees to fully devote their ability to work for the organization.

IV. Research Methodology

The method of this research is to analyze from documents, theories and related researches in order to synthesize the content divided into 5 steps as follows:

1) Step 1 Synthesis of transformation Vocational Education Colleges framework
2) Step 2 Study the component of transformation Vocational Education Colleges quality standards according to vocational education standards 2018.
3) Step 3 Synthesis of digital organizations for Vocational Education Colleges
4) Step 4 Synthesis of high performance organizations for Vocational Education Colleges
5) Step 5 Synthesis of the process to transformation from the Vocational Education Colleges to the high-performance digital organization

V. Result

A. Step 1 Synthesis of Digital Transformation Vocational Education Colleges Framework

The synthesis of digital transformation framework from 15 relevant documents, theories and researches as detailed in Table I.

TABLE I: Synthesis of Digital Transformation Framework

Research / Process	Policy	Process	People	Stakeholder	Infrastructure
[2] Ebert & Duarte, (2018)	✓			✓	✓
[3] Ferreira, Moreira, & Seruca, (2017)		✓	✓	✓	✓
[4] European Commission, (2016)		✓	✓	✓	
[7] von Leipzig et al., (2017)		✓	✓	✓	✓
[11] Scalabrin Bianchi, Sousa, & Pereira, (2017)	✓	✓		✓	✓
[12] Nugroho, (2014)	✓	✓	✓	✓	
[13] Toarniczky, Matolay, & Gáspár, (2019)		✓	✓	✓	✓
[14] Luyten & Bazo, (2019)	✓	✓	✓	✓	✓
[15] Elrehail, Alsaad, & Alzghoul, (2017)			✓	✓	
[16] Montenegro & Flores, (2015)	✓	✓		✓	✓
[17] Haneem, Kama, Taskin, Pauleen, & Abu Bakar, (2019)	✓			✓	
[18] Roedder, Dauer, Laubis, Karaenke, & Weinhardt, (2016)		✓	✓	✓	✓
[19] Mergel, Edelmann, & Haug, (2019)	✓	✓	✓	✓	
[20] Hess, Matt, Benlian, & Wiesböck, (2019)	✓	✓		✓	✓
[21] Office of The National Broadcasting and Telecommunications Commission, (2018)	✓	✓	✓	✓	✓

From Table I, the synthesis of the digital transformation framework for Vocational Education Colleges consists of 5 pillars, which are Policy, Process, People, Stakeholder, and

Infrastructure, as shown in Fig. 1.

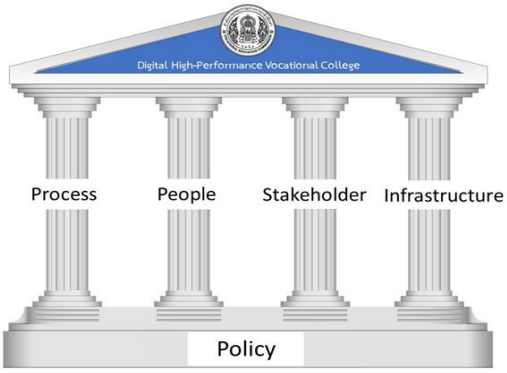

Fig. 1. Transformation vocational education colleges framework.

B. Step 2 Study the Component of Transformation Vocational Education Colleges Quality Standards according to Vocational Education Standards 2018

The component of the quality standards of Vocational Education Colleges according to the vocational education standards 2018, consisting of 3 components, 25 aspects, with the following details:

1) Process
   - 1.1) Systematic competency base development
   - 1.2) Curriculum competency base development / improvement of courses / improvement of previous courses or additional courses
   - 1.3) Quality of learning management plan into action
   - 1.4) Creating a learning management plan into action that is student-centered and used in instructional
   - 1.5) Instructional management
   - 1.6) Classroom management
   - 1.7) Information management system for college management
   - 1.8) Participatory college management
   - 1.9) Dual Vocational Education management
   - 1.10) Gathering resources for instructional management
   - 1.11) Community service and volunteering
2) People
   - 2.1) Professional standard assessment results
   - 2.2) National educational test results for vocational education (V-NET)
   - 2.3) Students are capable of being entrepreneurs or self-employed
   - 2.4) Results of professional skills competition
   - 2.5) Supervise and guide for students
   - 2.6) Students have desirable characteristics
   - 2.7) Employment and further education of graduates
   - 2.8) Students' work on innovation, invention, creative work, research
   - 2.9) Self-development and professional development
3) Infrastructure
   - 3.1) Access to high-speed internet for classroom instructional
   - 3.2) Buildings, facilities, classrooms, laboratories, internships or farms
   - 3.3) Foundation public utilities system
   - 3.4) Learning sources and academic resource centers
   - 3.5) High speed internet system for information use in college

C. Step 3 Synthesis of Digital Organizations for Vocational Education Colleges

The synthesis of digital organizations from 15 relevant documents, theories and researches as detailed in Table II.

TABLE II: SYNTHESIS OF DIGITAL ORGANIZATIONS

Item	[11]	[14]	[22]	[23]	[24]	[25]	[26]	[27]	[28]	[29]	[30]	[31]	[32]	[33]	[34]	[35]	[36]
Cloud Computing			✓	✓	✓	✓		✓		✓			✓				
Digital Skill			✓	✓	✓					✓				✓	✓	✓	
Digital Infrastructure	✓			✓		✓				✓	✓			✓	✓		
Big Data			✓	✓	✓	✓		✓				✓					✓
Organizational structure	✓						✓		✓		✓	✓		✓			
Digital Strategy	✓						✓		✓		✓						
Digital leadership	✓	✓					✓	✓			✓						
IoT								✓					✓				✓
Digital Platform			✓		✓	✓			✓							✓	
Digital Stakeholder Management		✓	✓	✓						✓		✓		✓	✓	✓	
Digital Academic	✓						✓						✓		✓		
Digital Workforce			✓	✓									✓		✓	✓	

From Table II, the synthesis of digital organizations for Vocational Education Colleges consists of 12 components, which are 1) Cloud Computing, 2) Digital Skill, 3) Digital Infrastructure, 4) Big Data, 5) Organizational Structure, 6) Digital Strategy, 7) Digital Leadership, 8) IoT, 9) Digital Platform, 10) Stakeholder, 11) Digital Academic, and 12) Digital Workforce.

D. Step 4 Synthesis of High Performance Organizations for Vocational Education Colleges

The synthesis of high performance organization for Vocational Education Colleges from documents, theories and standards for evaluating national and international vocational education colleges in the amount of 5 items as detailed in Table III.

From Table III, the synthesis of high performance organization for Vocational Education Colleges consists of 8 components, which are 1) Supervision and management 2) Curriculum and learning management 3) Students and graduates 4) Teachers and educational personnel 5) Infrastructure 6) Research 7) Community service and 8) The excellence of college.

TABLE III: SYNTHESIS OF HIGH PERFORMANCE ORGANIZATIONS

Item	[37] Royal Award College	[38] Vocational Education Standard	[39] College Quality	[40] Quality Assurance	[41] APACC
Supervision and management	✓			✓	✓
Curriculum and learning management	✓	✓	✓	✓	✓
Students and graduates	✓	✓	✓	✓	✓
Teachers and educational personnel	✓		✓		✓
Infrastructure	✓	✓	✓	✓	✓
Research	✓	✓		✓	✓
Community service	✓	✓	✓	✓	✓
The excellence of college	✓				✓

E. Step 5 Synthesis of the Process to Transformation from the Vocational Education Colleges to the High-Performance Digital Organization

The Synthesis of the process to transformation from a Vocational Education Colleges to the high performance digital organization from the synthesis of the digital transformation framework, quality standards of Vocational Education Colleges according to the vocational education standards 2018, the synthesis of digital organizations, and the synthesis of high performance organization for Vocational Education Colleges as detailed in Table IV.

From Table IV, the synthesis of the process to transformation from the Vocational Education Colleges to the high-performance digital organization consists of 5 pillars in 3 standards divided into 32 sub-issues. as shown in Fig. 2.

TABLE IV: VOCATIONAL EDUCATION COLLEGE TRANSFORMATION PROCESS TOWARD HIGH PERFORMANCE DIGITAL ORGANIZATION

Digital Transformation Framework	Vocational Education Colleges	Digital Vocational Education Colleges	High Performance Digital Vocational Education Colleges
Policy		1. Organizational structure 2. Digital Strategy	The governance and management procedure follow the digital format of the C-Suite.
Digital Transformation Framework	Vocational Education Colleges	Digital Vocational Education Colleges	High Performance Digital Vocational Education Colleges
Process	1. Curriculum Development 2. Instructional Management 3. Information System Management	1. Digital Platform 2. Digital Academic	1. Technological and innovative research be useful for industries and communities 2. Working process on digital system 3. Learning process management by digital system
People	1. Executive Development 2. Teacher Development 3. Student Development	1. Digital Leadership 2. Digital Skill 3. Digital Workforce	1. Digital intelligence quotient of learners 2. Digital readiness for labor market approaching of graduates 3. Digital leadership of executives 4. Digital Competency of teachers and Education Personnel
Stakeholder		1. Digital Stakeholder Management	1. Digital cooperation with enterprises 2. Digital literacy and profession services to community and society
Infrastructure	1. Internet Network 2. Buildings, Classrooms, Laboratory, Workshops, or Farming 3. Learning sources and academic resource centers 4. Fundamental public utilities system	1. Digital Infrastructure 2. Cloud Computing 3. IoT 4. Big Data	1. Digital Ecosystem

Fig. 2. Vocational education college transformation process toward high performance digital organization.

VI. CONCLUSION

The Synthesis of the process to transformation from a Vocational Education Colleges to the high performance digital organization which will help to transform Vocational Education College toward the High Performance Digital Organization effectively. The process is as follows:

1) Policy is the process of transformation from the Vocational Education Colleges to the high-performance digital organization in terms of governance and management by creating a digital organization structure of C-Suite under the implementation of digital strategy.
2) Process is the process of transformation from Vocational Education Colleges to the high-performance digital organization in terms of working process by the use of digital technology in every work process within college under the same digital platform. There are the development of curriculums in accordance with the digital technology and the information system management systematically. Including the research of technology and innovation that can be use in the industrial sector and in community service.
3) People is the process of transformation from Vocational Education Colleges to the high-performance digital organization in terms of human resource management including students, teachers, educational staffs, and executives. By developing digital intelligence students to prepare themselves for entering the digital labor market and

developing teachers and education personnel with digital competencies. In addition, developing digital leadership for executives.

4) Stakeholder is the process of transformation from Vocational Education Colleges to the high-performance digital organization in terms of collaboration with enterprises and communities. By creating partnerships with digital establishments to recruit students to practice experiences or to provide digital support from them. And applying digital technology in academic and professional services to community and society.
5) Infrastructure is the process of transformation from Vocational Education Colleges to the high-performance digital organization in terms of information technology systems of the college by arranging the digital ecosystem. The development of the high-speed Internet system that can be used fully, Cloud Computing and Data center that can access data all the time. As well as there is the cyber security system. Including uses IoT systems for work processes and educational management.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

AUTHOR CONTRIBUTIONS

Thanasarn Rujira conducted the research, analyzed the data, and wrote the paper; Prachyanun Nilsook, and Panita Wannapiroon the research consulting; all authors had approved the final version.

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