82

Int. J Sup. Chain. Mgt   Vol. 11, No. 1, February 2022

The Conceptual Framework of Digital Supply Chain for Research Management in Higher Education Institutions

Artaphon Chansamut

Office of Dean, Faculty of Home Economic Technology, Rajamangala University of Technology Krungthep, Thailand

`artaphon.c@mail.rmutk.ac.th`

Abstract— **The research aimed is to find and to evaluate the conceptual framework of digital supply chain for research management in higher education institutes. The research sample totaling ten experts consisted of ten experts consisted of five experts on supply chain , two experts on information technology and three experts** on **eeducational research and evaluation. The employed research instrument is a questionnaire. Statistics employed for data analysis are mean and standard deviation. The research found that the conceptual framework of digital supply chain for research management in higher education institutes comprising of seven principal components, namely ,main element,suppliers , university ,customers ,consumers ,satisfaction and feedback. The results from experts agreement the conceptual framework of digital supply chain for research management in higher education institutes was a high level, that mean the conceptual framework to may be applies in support the tasks.**

Keywords— *the conceptual framework of digital supply chain, research management, higher education institutes*

1. Introduction

In this current education system , the Thai government has realized the importance of adjusting the country to increase its capability to compete with other countries in every aspect. Especially in research development that leads to development of quality of the product , the government has formulated the following policy: "To develop country, research, innovation and science and technology to drive economy, growth and sustainable development.". This policy also includes the establishment of private and public higher education institutions to meet the needs for national development and development of individuals who want to further their studies. Furthermore, Many countries have increased their competitive ability by developing their human resources to equip them with knowledge and skills in order to create quality products in agriculture One of their strategies is the application of the supply chain management system in human resource development in order to increase competitive ability. As Thailand is a part of world community, it needs to urgently develop its research system for development country and enhance academic excellence. As such, the government has formulated an important policy that "The creation of a stable knowledge-based economy and environmental factors must support Thailand to be a centre of goods and service production in the region based on creative thinking, creation of innovations, and extension of the body of knowledge in order to support the adjustment of the structure of production and service sector in every stage of supply chain. This is to enable the creative economy to be a new mobilizing power that leads toward the balanced and sustainable economy in the long run, together with the creation of the assurance system and the supply chain system, the management of economic risks, and the creation of the free and just atmosphere to facilitate the production, commerce and investment inclusive of the development of new entrepreneurs, the creation of infrastructure and internal logistics networks that connect with other countries in the region." Based on this policy, the 11th National Plan for Social and Economic Development was formulated. [8].The researcher has realized the importance of research development in order to cope with economic, social and political changes. In the business and industrial sector the changes have included the movement toward more and more application of the concept of supply chain management and digital. This is because the business and industrial sector needs to be highly competitive due to increasingly high competitions from both within and outside the country. In order to be highly competitive, organizations in the sector need to have personnel with knowledge, ability and skills who can work efficiently to increase output and products. The organizations, therefore, need to

83

Int. J Sup. Chain. Mgt   Vol. 11, No. 1, February 2022

have sufficient information and resources to increase their values and respond to the demand of their clients. Thus, the supply chain management process is a key process to support the organization's whole activities system from upstream to downstream.   It enables the organization to promptly check digital system to ensure that the organization operates smoothly and effectively based on the determined strategies. Based on this realization,[1] the researcher has decided to find conceptual framework of digital supply chain for research management in higher education institutes for application to increase values of society .

2. Literature Review

Supply chain in digital for Research management in Higher education institute is a set of processes that use advanced technologies and better insights into the functions of each stakeholder along the chain to let each participant make better decisions about the sources of materials they need, the demand for their products and all of the relationship in between.Fully integrating legacy supply chain management technologies demand planning, research management, and supply chain management, planning, sourcing, manufacturing and deliver s a needed first step. But truly digitizing a supply chain also involves mining data from those processes and instrumenting the equipment that enables them to produce the finished research.

3 Research Methodology

The methodology comprised 6 step, as follows:

3.1Study and analyse related documents and research to the components conceptual framework of digital supply chain for research management in higher education institutes.

3.2 Defind research framework of conceptual framework of digital supply chain for research management in higher education institutes setting.

3.3 Design conceptual framework of digital supply chain for research management in higher education institutes. using data collected from studies and analysis of relevant documents and research.

3.4 Propose the models to consultants and experts for consideration by in-depth interviews.

3.5 Create an instrument for assessing the suitability of conceptual framework of digital supply chain for research management in higher education institutes.

6, Data collection and develop questionnaire are sent to the experts in order to ask their opinions on appropriateness of conceptual framework of digital supply chain for research management in higher education institutes using the arithmetic mean and standard deviation as the following criteria : 4.51-

5.00 at highest of appropriate suitability 3.51-4.50 at a high of appropriate suitability 2.51-3.50 at moderately of appropriate suitability 1.51-2.50 at a low of appropriate suitability 0.00-1.50 at lowest of appropriate suitability [2] ,[3] and [4].

7 To Review and edit the conceptual framework of digital supply chain for research management in higher education institutes on suggestions from the experts.

4 Results

4.1 Research results about the conceptual framework of digital supply chain for research management in higher education institutes.were presented in figure 1 .
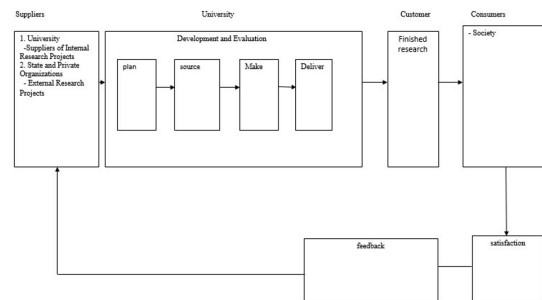

Figure 1: The conceptual framework of digital supply chain for research management in higher education institutes.

Table 1: Stakeholders each process is related to the following activities:

Stakeholders	Activities in supply chain	Needs for data

1. **Suppliers**
1. University
  -Suppliers of Internal Research Projects
2. State and Private Organizations
  - External Research Projects
	propose a research topic and Related Content	-quick responses.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 1 Plan	Researcher Needs and Research	- To be filed and stored systematically to prevent the loss of information.
2. Source	- provide rich environment for classroom observation, model best practices and include state of the art lecture halls, libraries, laboratories and IT services. - provide rich environment for classroom observation, model best practices and include state of the art lecture halls, libraries, laboratories and IT services. - provided with an environment in which they can learn, both successfully and comfortably. Lecture rooms are principally conducted using state-of-the-art distance learning technology, online education	- Correct and complete evaluation reports.

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 2 Source	, e-learning via Internet. Online databases, e-journal, digital library, etc. represents modern research facilities in the universities	
3 Make	- Provision of programs to assess the development. - Supply expert train researcher. - Reporting of training outcomes in each domain including the knowledge, intellectual skill, and information technology usage, etc. - Evaluation of training - Evaluation of research -create opportunities for reflection, and support students' participation in curriculum planning, teaching and research Traditionally, university faculty members are evaluated according to the	- To facilitate speedy and accurate data

85

Int. J Sup. Chain. Mgt   Vol. 11, No. 1, February 2022

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
2. university Development and Evaluation 3 Make	three major criteria: teaching, research, and services. - increase the diversification in research development and research assessment. -should be appearing on each program director's agenda. Hands-on experience, industrial placements, social demand, provision of technology facilities, digital technology and innovative academic methods all demonstrate attempts to differentiate programs establishment.	- reduction of time wastage.
4.Deliver	-Reporting of research	- To be easily accessible.
3 Customer Finished research	- Useful research	prevent the loss of information
4 Consumers Society	- Published research - Research income - Praise researcher - Offer research in an academic research conference.	storage of large amount of information for accessibility.

4.2 Explanation on elements of the conceptual framework

1 Suppliers

The suppliers mean the organizations that supply raw materials to the manufacturer. Raw materials in this case are researcher who send research into University. They can send research via a digital.

2 University

The university produces quality research. It performs the duty to transform raw materials into the finished products of quality research. The university will perform its duty of research development and assessment consisted plan, source, make and deliver of each activity, namely, propose a research topic and related content, training researcher, evaluation of research outcomes, and reporting of research, operation results etc.

3 Customer

The Customer mean finished product from the university.

4. Consumers

The consumers mean society as the end customer or the consumer in this educational supply chain. As universities are the part of the society.

5. Satisfaction

Satisfaction refer to an important factor in doing any prosperous work. To generate satisfaction for the entrepreneur, the evaluation of satisfaction in the products and services with the customers.

6.Feedback

Feedback is the information obtained from satisfaction analysis with the relationship between productivity and customers which will be feedback to expected results in a research. [1],[3],[4],[5],[6]

Table 2: Results of appropriateness evaluation of conceptual framework of digital supply chain for research management in higher education institutes

ITems	$\overline{X}$	S.D.	Suitability
Main element	3.65	0.72	High
Suppliers	3.60	0.69	High
University	3.67	0.91	High

86

Int. J Sup. Chain. Mgt					Vol. 11, No. 1, February 2022

Table 2: (Continued)

ITems	$\overline{X}$	S.D.	Suitability
Customer	3.72	1.00	High
Consumers	3.63	0.80	High
Satisfaction	3.63	0.80	High
Feedback	3.63	0.80	High
Total	3.65	0.82	High

From Table 2, Expert agreed conceptual framework of digital supply chain for research management in higher education institutes is high appropriate, with the total rating mean of 3.65 and standard deviation of 0.82.

5 Conclusion

According to evaluation by 10 experts, conceptual framework of digital supply chain for research management in higher education institutes is considered to be high appropriate, that mean the conceptual framework to may be applies in support the tasks.

6 Discussion

The conceptual framework of digital supply chain for research management in higher education institutes is considered to be highly appropriate and the conceptual framework design was relevant to Kaewngam, Chatwattans and Piriyasurawong [7] and the study of chansamut [2] recommended that supply chain and digital also.

7 Recommendations

There should be case studies of higher education institutions that develop the conceptual framework effectively, if any

8. Acknowledgements

Reference

[1] Chansamut, A., Piriyasurawong., P. Conceptual Framework of Supply Chain Management Information System for Curriculum Management Based on Thailand Qualifications Framework for Higher Education. International Journal of Managing Value and Supply Chains (IJMVSC) . Vol 5 No 4 , 33-45. 2014

[2] Chansamut, A Supply Chain operation Model in Digital for Curriculum Management Based on Thailand Qualifications Framework for Higher Education. International Journal of Supply Chain Management (IJSCM). Vol 10 No 4 , 71-75. 2021.

[3] Chansamut, A An Information System Model for Educational Management in Supply Chain According to Career standards on Thailand Qualifications Framework for Vocational Education International Journal of Supply Chain Management (IJSCM). Vol 10 No 4 , 51-55. 2021.

[4] Chansamut, A Synthesis conceptual framework of Supply Chain Business Intelligence for Educational Management in Thai Higher Education Institutions International Journal of Supply Chain Management (IJSCM). Vol 10 No 5 , 25-31. 2021.

[5] Chansamut, A Supply Chain Business Intelligence Model for Quality Assurance in Educational Management for ASEAN University Network Quality Assurance International Journal of Supply Chain Management (IJSCM). Vol 10 No 5 , 40-49. 2021.

[6] Chansamut,. A. ICT System in Supply Chain Management for Research in Higher Education Institute.University of the Thai Chamber of Commerce journal humanities and social sciences. Vol 36 No 2, 112-121. 2016.

[7] Kaewngam, A., Chatwattans, P., Piriyasurawong,P , Supply Chain Management Model in Digital Quality Assurance for ASEAN University Network Quality Assurance(AUN-QA): Canadian Center of Science and Education. Vol 9 No 4, 12-20. 2019.

[8] Office of the National Economic and Social Development Board, Office of the National Economic and Social Development Board,2021. The Eleventh National Economic and Social Development Plan (B.E. 2017 – 2021) Available at http://www.nesdb. go.th/ Default.aspx?tabid=395