

An Information System Operation Model for Curriculum Management in Supply Chain for National Skills Standards in Thailand

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Abstract— The main purpose of paper is to design and evaluate an information system operation model for curriculum management in supply chain for national skills standards in Thailand. The research method is divided into 7 steps namely Analyze and synthesize documents and research literature both within and outside the country, Use the obtained data to establish the conceptual frameworks, to present a model, to create questionnaire for evaluating the suitability of the model, develop a questionnaire and determine the weight of the score, Data collection and analysis. Ten experts from higher education institutions in supply chain and information technology were included in the research as sample group. Data analysis was the average mean and standard deviation. The model development process has 5 components mainly namely, Suppliers, Manufacturers, Service provider, customers and consumer. The model to support information system. As the overall model was shown at the high level, Experts agreed the model. It showed that an information system operation model for curriculum management in supply chain for national skills standards in Thailand aims to develop information system.

Keywords—An information system operation model, curriculum management in supply chain, national skills standards in Thailand

1. Introduction

National competency skills standards play an important and increasing role in skills development and recognition in the asia-pacific region, as they do in many other parts of the world. They are a guide to the range of skills and knowledge required for a whole industry. Competency standards can be flexibly combined into jobs and occupations. They are the common basis for training programmes, skills assessment and certification in many countries. Competency standards, when recognized nationally, or across a cluster of nations, can form a key component in assisting the mobility of skilled

labour. As part of a quality assurance system, the assessment of a person's skills against accepted benchmarks means those skills can be applied in other, similar, work. Potential employers can feel confident in the level of competencies workers claim to have. Workers returning from employment in other countries can have the skills they gained working there formally recognized. The Regional Model Competency Standards (RMCS) are the reference standards at the regional level that can be used in various ways to underpin efficient and effective skill development. In addition, they are considered to be essential tools to protect migrant workers and their rights and to ensure their better reintegration.[20] Specifically, The national skill standards is a need to understand the various types of standards currently being used in different countries and their definitions, comparability, and the process and stakeholders involved in the development of standards. he national skill standards is a need to understand the various types of standards currently being used in different countries and their definitions, comparability, and the process and stakeholders involved in the development of such standards. Finally, it is important to evaluate to what extent they truly reflect the requirements of today and tomorrow's labour market demands.[1] For this reason, The awareness of the supply chain management information system model for curriculum management in supply chain for national skills standards in Thailand can be practical as a method to accomplish work procedures, actions and affairs within the organization. It starts from planning, providing accurate information at the time of need, practicing and maintenance, distribution or destruction by giving priority to information exchange, data analysis and sharing in order to

achieve productivity through the development. The nature of supply chain and information technology will be derived to play a role in changing work processes to be more computerized in order to style occupied custom of technology not only carrying supply chain and information technology to work but also be able to determine the organization inevitably. Supply chain and information technology is increasing work proficiency, diminish work period, and costs are the heart of the progression organization about supply chain and information technology. Useful strategy and evidence technology are attaching with the work experience of staffs complicated in the supervision of quality skill standard work with an incorporated work process to increase work competence and generate additional value for the association to continue the quality and nation skill standard .[5] According to the stated, The researcher decided to develop model an information system operation model for curriculum management in supply chain for national skills standards in Thailand for develop personnel competency in each professional field and increase satisfaction of consumers.

2. Literature Review

Chansamut (2021) said that Relationship between information and supply chain according to asean university network quality assurance at programme level (AUN-QA at programme level) is importance for applying in actual work settings based on findings from literature review, the researcher found a large number of papers and articles in supply chain. The relationship between information and supply is a key process to support the education whole activities system from upstream suppliers to downstream consumers. It enables the organization to promptly check the supply chain and information technology to ensure that the organization operates smoothly and effectively based on the determined strategies. The process consisted of suppliers, manufacturer customers, Including 11 activities in the supply chain namely, 1) Expected Learning Outcomes 2) Programme Specification 3) Programme Structure and Content 4) Teaching and Learning Strategy 5) Student Assessment 6) Academic Staff Quality 7) Support Staff Quality 8) Student Quality and Support 9) Facilities and Infrastructure 10) Quality Enhancement 11) Output . All activities are connect with information communication technology in the educational institute according to asean university network quality assurance at programme level (AUN-QA at programme Level) start from the creation of information, news and

resources to apply together to move the goods from the supplier to the customer, resulting in a rapid flow of information and effectively. This truly added the educational institute value as the production satisfactory for the consumers.

Kham Nai (2012) said that education supply chain management needs to consider various elements. Which has a relationship between various organizations with a clear goal of reducing the operational process of the system increase service levels leading to efficiency meet the needs of customers In general, the supply chain consists of important points, namely 1. Suppliers mean those who send raw materials to service units such as producing quality graduates to society etc. 2. Manufacturer means the person who is responsible for transforming the raw materials received from the supplier. To have higher value 3. Distribution center means the point that serves to distribute products to the consumer or the customer at the center. One product distribution may have products from many agencies, such as higher education institutions. There will be graduates graduating from many institutions. 4. Retailers or customers means the end of the supply chain. Which is where the products or services must be used until the value is exhausted and without adding value to that product or service.

Verma & Boyer (2010) pointed out that business organizations in the supply chain will work together to turn raw materials into products and deliver to customers. between organizations which will be linked in both physical, data .

Supply chain and information is the integration of key education processes from end user through original suppliers that provides products, services, and information that add value for customers.

3 Research Framework

Conceptual framework of research about an information system operation model for curriculum management in supply chain for national skills standards in Thailand, as shown in figure 1

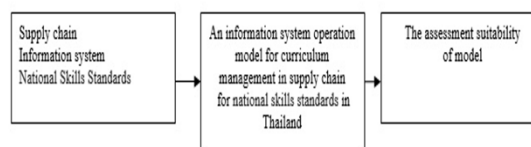


Figure 1: Research Framework

4 Research methodology

2.1 Population consists of experts in supply chain and information system

2.2 Samples are ten Experts with five Years' Experience in the Field of Experience in Information system and supply chain.

2.3 Variables

Independent variable. The independent variable is an information system operation model for curriculum management in supply chain for national skills standards in Thailand and dependent variable. The dependent variable is the evaluation result of an information system operation model for curriculum management in supply chain for national skills standards in Thailand

2.4 Research Tool

Questionnaire for assess an information system operation model for curriculum management in supply chain for national skills standards in Thailand

The research methods have been categorized into 5 as follows:

- 1 Analyze and synthesize documents and research literature both within and outside the country.
2. Use the obtained data to establish the conceptual frameworks.
3. To present a model of an information system operation model for curriculum management in supply chain for national skills standards in Thailand by using collected data from relevant research and related research.
4. To Create questionnaire for evaluating the suitability of an information system operation model for curriculum management in supply chain for national skills standards in Thailand.
- 5 To Develop the questionnaire and determine the weight of the score.
- 6 Data collection and analysis by using arithmetic mean and standard deviation. A 5-point rating scale base on Likert scale consists of 5 answer options.

3 Results

3.1 Results of an information system operation model for curriculum management in supply chain for national skills standards in Thailand were presented in Figure 2 .

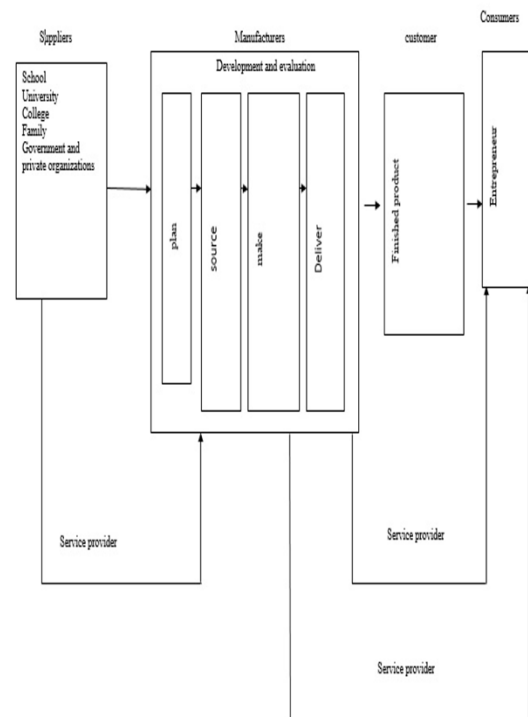


Figure 2: An information system operation model for curriculum management in supply chain for national skills standards in Thailand

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

Stakeholders	Activities in supply chain	Needs for data
Suppliers School University College Family Government and private organizations	- Sending graduated students or guest	-quick responses. - Real time Visibility
Manufacturer 1 plan 2 Source	-Forecasting future staffing requirement and student or guest planning. - To public relations for applying for the National Skills Standards Test. -Request approval for testing and prepare tools, machines,	- To be easy to monitor and follow up. -To quick responses

Table 1: (Continued)

Stakeholders	Activities in supply chain	Needs for data
Manufacturer		
2 Source	materials, equipment, staff,etc	- To be easy and follow up.
3 Make	- Provision of fieldwork experience training including training places, supervising staff and mentors, training handbook and materials, and seminars on training experience. -Conducting the National Labor Standards Test. - Examine and report on the results of the inspection. Announcing the results of the test and preparing a certificate.	-To quick responses
4 Deliver		- To be easy
Customers Finished product	people have work skills	- To be filed and stored systematically to prevent the loss of information.
Consumers Entrepreneur	Employer's satisfaction on people skills.	To prevent the loss of data

3.2 The principles of an information system operation model for curriculum management in supply chain for national skills standards in Thailand information system operation model for curriculum management in supply chain for national skills standards in Thailand

3.2.1 Suppliers

Suppliers of the student (High school/college) , Supplies of the family (Parents, Siblings) , relatives, etc. government and private organizations (Scholarship).The suppliers mean the organizations that supply raw materials to the manufacturer. Raw materials in this case are students and guest who receive special quotas for admission. They can

apply for admission via the computer system that can process and store the data systematically.

3.2.2 Manufacturer

Manufacturer mean skills standards institute is regarded as a service provider university that produces students and guest. It performs the duty to transform raw materials, or entering students and guest, into the finished products. skills standards institute institute will perform its duty of student ,guest development and evaluation according to career standards and professional qualification in supply chain activities, namely, To public relations for applying for the national skills standards test, Request approval for testing and prepare tools, machines, materials, equipment, staff, Conducting the national labor standards test. , Examine and report on the results of the inspection, Announcing the results of the test and preparing a certificate etc. ie. Finished product with desirable quality outcomes are delivered to the society.

3.2.3 Customer

The customer mean finished product from skills standards institute.

3.2.4 Service provider

A service provider mean support activities that helps the main activities to run smoothly. support activities consists of organizations infrastructure ,human resources management technology development and procurement.

3.2.5 Consumers

The consumers mean entrepreneur identifies the society as the end consumer in supply chain. As skills standards institute are part of the society, the final outcomes of supply chain, including finished product with desirable quality outcomes are delivered to the society as the end-of-process supply chain They include the society in general and entrepreneurs who receive and/or employ the students and guest who finished product from Thailand professional Qualification institute.. Finally, the end product of qualified finished product will provide added value to the supply chain. [2],[3],[4],[5],[6],[7],[8],[9],[10],[11],[12],[13],[14],[15],[17],[18].

4.1 The evaluation result for an information system operation model for curriculum management in supply chain for national skills standards in Thailand , as shown table 2 below:

Table 2: Appropriate level of an information system operation model for curriculum management in supply chain for national skills standards in Thailand

No.	List of Evaluated Items	\bar{X}	S.D.	Appropriate Level
1	Main elements	3.62	0.65	High
2	Suppliers	3.68	0.62	High
3	Manufacturer	3.60	0.69	High
4	customer	3.70	0.67	High
5	Service provider	3.70	0.48	High
6	Consumers	3.60	0.51	High
	Total	3.65	0.64	High

From table 2, that experts agree that an information system operation model for curriculum management in supply chain for national skills standards in Thailand is highly appropriate ($\bar{X} = 3.65$, S.D. = 0.64).

5. Conclusion and Discussion

The research found that an information system operation model for curriculum management in supply chain for national skills standards in Thailand was evaluated by a group of experts at a high level. ($\bar{X} = 3.65$, S.D. = 0.64), which mean an information system operation model for curriculum management in supply chain for national skills standards in Thailand aims to develop information system.

According to the research of Chansamut & Piriya-surawong (2014) and (2019) indicated that supply chain management in education need to consider the components namely, Suppliers, Manufacturers, Service provider, customers and consumer. All component connected with an information technology to the educational institute through the supply chain. This truly adds value to the educational institute as a production source providing satisfactory product research for the consumers as planned. [2],[3] and according with the research of Chansamut (2016) (2019) (2020) and (2021) [4],[5],[6],[7],[8],[9], [10],[11],[12] ,[13],[14],[15].Moreover, with the study of Kaewngam, Chatwattans and Piriya-surawong [18] it reveals that supply chain and digital quality assurance for ASEAN university network quality Assurance (AUN-QA) are supports educational as well.

5 Recommendations

Further in-depth studies should be conducted on the creation of required database for developed model.

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References

- [1] Bateman, A., Liang, X. (2016). National qualification framework and competency standards: Skills promotion and job creation in east asia pacific. NQF and Competency Standards: A synthesis report
- [2] Chansamut, A., Piriya-surawong., P. Supply Chain Management Information System for Curriculum Management Based on The National Qualifications Framework for Higher Education. International Journal of Supply and Operations Management. Vol 6 No 1, 88-93. 2019.
- [3] Chansamut, A., Piriya-surawong., 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.
- [4] Chansamut, A, Information and Communication Technology System Supply Chain Management for research in higher education institutes. University of Thai Chamber of Commerce. Journal Humanities and Social Sciences. Vol 36 No 2, 210- 221. 2016.
- [5] Chansamut., A. An information System model for research management in supply chain for higher education institute. Academic Journal Council of University Administrative Staff of Thailand. Vol 9 No 2, 112-121. 2020
- [6] Chansamut. 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.
- [7] Chansamut. 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.

- [8] Chansamut. An information system model for curriculum management according to career standards in supply chain for Thailand professional qualification institute. *International Journal of Supply Chain Management (IJSCM)*. Available at <http://ojs.excelingtech.co.uk/index.php/IJSCM>(accessed: 31 Dec 2021).
- [9] Chansamut. (2021) The development of patterns software for educational management on cloud computing in supply chain for asean university network quality assurance . *International Journal of Supply Chain Management (IJSCM)*. Available at <http://ojs.excelingtech.co.uk/index.php/IJSCM> (accessed: 31 Dec 2021).
- [10] Chansamut. (2021). Relationship between information and supply chain according to asean university network quality assurance at programme level . *Mahidol R2R e- Journal*. Available at <https://he01.tci-thaijo.org/index.php/mur2r/index>. (accessed: 31 Dec 2021).
- [11] Chansamut. (2021) Supply Chain Management Information System Model for quality assurance in educational management for ASEAN University Network Quality Assurance (AUN-QA). *International Journal of Research in Industrial Engineering*. Available at <http://www.riejournal.com/>(accessed: 31 Dec 2021).
- [12] Causatum. (2019) Supply Chain Management Information System Model in Thai Halal product Industry Supply Chain Management Information System Model in Thai Halal product Industry . *Maejo Information Technology and Innovation*. Available at <https://mitij.mju.ac.th/ARTICLE/R62006.pdf>. (accessed: 31 Dec 2021).
- [13] Chansamut. (2020) Digital system Model for Research Management in supply chain for higher education institute. *Maejo Information Technology and Innovation*. Available at <https://mitij.mju.ac.th/ARTICLE/R62014.pdf>. (accessed: 31 Dec 2021).
- [14] Chansamut. (2020) Supply Chain Model for Curriculum Management base on Thailand Qualifications Framework for Higher Education. *Maejo Information Technology and Innovation*. Available at <https://mitij.mju.ac.th/ARTICLE/R63002.pdf> . (accessed: 31 Dec 2021).
- [15] Chansamut. (2019) The Development of logistics model for mange education for the universities. *Maejo Information Technology and Innovation*. Available at <https://mitij.mju.ac.th/ARTICLE/R62005.pdf> (accessed: 31 Dec 2021).
- [16] Douglas, M. L., & Matias, G. E. (2017). Issues in Supply Chain Management: Progress and potential. Available at <https://doi.org/10.1016/j.indmarman.2016.12.002>. (accessed: 31 Dec 2021).
- [17] Habib, M. and C. Jungthirapanich. (2009). Research Framework of Education Supply Chain, Research Supply Chain and Educational Management for the Universities. *International Journal of the Computer, the Internet and Management(IJCIM)*. Available at <http://assumption-univ.academia.edu/Mamun-Habib>. (accessed: 20 Sep 2021).
- [18] 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.
- [19] Khum, N. A. S. *Manual for developing logistics and industrial capabilities for mining*. 2nd edition(2,000) copies. Bangkok: Focus Media and Publishing Company Limited.2012.
- [20] Nishimoto,T (2015). *Regional model competency standards: core competencies*. International Labour Organization 2015.
- [21] Verma, R., & Boyer, K. *Operations and Supply Chain Management: World Class Theory and Practice*. London: South-Western Cengage Learning.2010.