An Information System Model for Educational Management in Supply Chain According to Career standards on Thailand Qualifications Framework for Vocational Education

Artaphon Chansamut[#1]

[#] *Office of Dean, Faculty of Home Economic Technology, Rajamangala University of Technology Krungthep,Thailand*
149 CharoenKrung Road Yannawa, Sathon, Bangkok 10120
[1]artaphon.c@mail.rmutk.ac.th

***Abstract*— This research aims to 1) design and evaluate an information system model for educational Management in supply chain according to career standards on thailand qualifications framework for vocational education. The sample groups were 5 experts in supply chain management, 5 experts in Information and technology and 5 experts on curriculum. The research sample totaling 15 experts. The research tool was questionnaire to system Model for educational Management in Supply Chain according to career standards on thailand qualifications framework for vocational education comprises six main components, namely Sub-components, Suppliers, Service provider ,Manufacturer, Finished product and customers .The data analyzed by using arithmetic mean and standard deviation. A Model of assessment system using Back-Box technique.The overall evaluation result an Information system Model for educational Management in Supply Chain according to Career standards on Thailand Qualifications framework for vocational education, shows the overall rating mean of 3.78 suggesting that The framework aims to support sustainable information system development.**

***Keywords*— *Information system model*, *Educational management in supply chain* , Career standards on thailand qualifications Framework for vocational education

1. Introduction

According to education management section in national education Act of B.E.1999. the main specifications is the quality of education which is the ultimate goal of Educational s reforms at all level nowadays, the education system have significant, 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 Educational development that leads to development of quality of the product , the government has formulated the following policy: "To develop quality of people, as the people are human resource of the country and the key component in all aspects of development, to reform the whole system of education, to modify educational structure, to decentralize educational administration to the provinces so that educational management becomes more thorough and responsive to the local needs." [5].This policy also includes the establishment of private and public higher education institutions to meet the needs for national development of the country as follows:

1.1 Internal factors

In B.E. 1999, the Thai government promulgated the educational reform act that brings about the changes in educational structure, and the promotion of educational institutions toward academic and vocational excellences. In order for educational institutions to be more inspirational and interesting for prospective students, higher education institutions need to adjust themselves to cope with economic, political and social changes that occur in the country. Meanwhile, the country needs human resource with high level of knowledge and ability, especially the people who are knowledgeable and skillful in various vocations, to work in private and public organizations. Higher education institutions need to produce graduates to meet the needs of the country and to prepare the people to be ready for joining the ASEAN Economic Community in B.E. 2015.

1.2 External factors

Various 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 and industry.

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 center 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. [6].The researcher has realized the importance of curriculum 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 information system. 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 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 the information system to ensure that the organization operates smoothly and effectively based on the determined strategies. Based on this realization, the researcher has decided to design an information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education for application to increase satisfaction of consumers.[4]

2 Research methodology

2.1 Population

The Population groups were 5 experts in supply chain management, 5 experts in Information and technology and 5 experts on curriculum. The research sample totaling 15 experts for evaluation of an Information system model for educational management in supply chain according to career standards on thailand qualifications Framework for vocational education

Independent variable. The independent variable is the an information system model for educational management in supply chain according to career standards on thailand qualifications Framework for vocational education.

Dependent variable. The dependent variable is the evaluation result of the synthesized an information system model for educational management in supply chain according to career standards on thailand qualifications Framework for vocational education.

2.2 Research Tool

Evaluation form information system model for educational management in supply Chain according to career standards on thailand qualifications framework for vocational Education**.**

The research methodology comprised 5 following, as follows:

2.2.1 Review documentation and literature both within and outside the country concerning an information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education.

2.2.2 Research an information system model for educational management in supply chain according to career standards on thailand qualifications Framework for vocational education setting.

2.3.3 Design and construction an information system model for educational Management in Supply Chain according to career standards on thailand qualifications framework for vocational education.

2.2.4 Identification of experts for evaluation of an information system model for educational management in supply Chain according to career standards on thailand qualifications framework for vocational education. The researcher determined that they must be experts on supply chain management and information technology. All of them must have educational qualification at the

doctoral degree level, and must have more than five years of work experience.

2.2.5 Create the evaluation form for evaluating the suitability of an information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education. The experts assess the appropriateness of components model ,as follows:

1. The appropriateness of the main components
2. The appropriateness of sub-components of the research suppliers component
3. The appropriateness of sub-components of manufacture component
4. The appropriateness of sub-components of service provider component
5. The appropriateness of sub-components of finished product component
6. The appropriateness of sub-components of customers component

2.2.6 Data collection and create the tools for evaluating the suitability of the model and sent the experts 5 experts in supply chain management, 5 experts in Information and technology and 5 experts on curriculum. Information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education comprises six main components, namely Sub-components,Suppliers, Service provider ,Manufacturer, Finished product and customers for consider the suitability of Information system model for educational Management in Supply Chain according to career standards on thailand qualifications framework for vocational education.

2.2.7 Data analysis and evaluation result for an information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational Education. The statistics used in data analysis were mean, standard deviation, as follows:

1. Create the evaluation form for evaluating the suitability of an information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education using form was a 5-scale rating for suitability of model comprises six main components, namely Sub-components,Suppliers, Service provider ,Manufacturer, Finished product and customers, as follows:

The rating of 5 means most appropriate.
The rating of 4 means highly appropriate.
The rating of 3 means moderately appropriate.
The rating of 2 means lowly appropriate.
The rating of 1 means least appropriate.

2. The defining the criteria for the interpretation of the average , as follows: [2],[3],[4]

The rating means ranging from 4.51 – 5.00 means appropriate at the highest level.
The rating means ranging from 3.51 – 4.50 means appropriate at the high level.
The rating means ranging from 2.51 – 3.50 means appropriate at the moderate level.
The rating means ranging from 1.51 – 2.50 means appropriate at the low level.
The rating means ranging from 0.00 – 1.50 means appropriate at the lowest level.

3 Results

3.1 **Results of an information system model for educational management in supply chain according to career standards on Thailand qualifications Framework for vocational education are presented in figure 1 for the whole model, as shown below:**

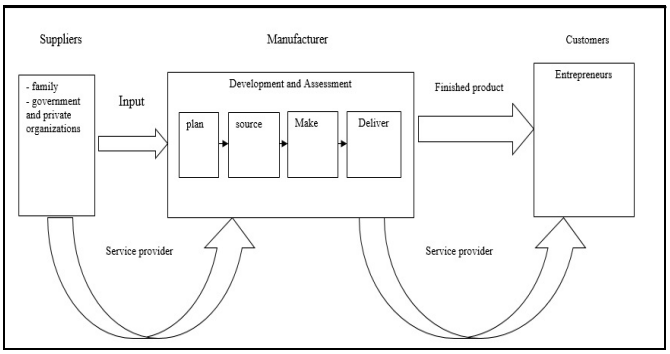

Figure 1: An information system model for educational management in supply chain according to career standards on Thailand qualifications framework for vocational education

3.2 Explanation on components of model:

3.2.1 The suppliers component

Suppliers of family (Parents, Siblings) , relatives, etc. government and private organizations (Scholarship).The suppliers mean the organizations that supply raw materials or student to the manufacturer . They can apply for admission via the computer system that store the data systematically.

3.2.2 The manufacturer component

The manufacturer means vocational college that produces graduated students. It performs the duty to transform raw materials into the finished products of qualified graduated students. The vocational college will perform its duty of student

development and assessment .It is based on the consideration that all supply chain tasks and activities can be assigned to four fundamental processes - plan, source, make, deliver of each activity, namely. recruitment of instructors and admission of students, curriculum planning, curriculum development, provision of learning activities for student development, provision of fieldwork experience training, evaluation of learning outcomes, and reporting of curriculum implementation results.

3.2.3 The service provider component

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.

3.2.4 Finished products

The Finished products mean graduated students from vocational college.

3.2.5 The customers Component

The customers mean entrepreneurs or the end-of-process component of the model. They include the society in general and entrepreneurs who receive and/or employ students who graduated from vocational college. Finally, the end product of qualified graduated students will add value for customers with supply chain. [1],[2],[3], [4],[5], [7],[8]

4. Conclusion and discussion

4.1 Conclusion

The evaluation result for am information system model for educational Management in Supply Chain according to career standards on thailand qualifications Framework for vocational education, as shown table 1 below:

Table 1. Appropriate level of an information system model for educational management in supply chain according to career standards on Thailand qualifications framework for vocational education

No.	List of Evaluated Items	$\overline{X}$	S.D.	Appropriate Level
1	Appropriateness of the main components	3.56	0.55	High
2	Appropriateness of sub-components of the suppliers component	3.83	0.35	High
3	Appropriateness of manufacturer component	3.26	0.45	High
4	Appropriateness of the service provider	4.40	0.73	High
5	Appropriateness of the sub-component of finished product component	3.86	0.51	High
6	Appropriateness of the sub-component of the customers component	3.80	0.41	High
	Total	3.78	0.50	High

From table 1, that experts agree that an information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education is highly appropriate ($\overline{X}$ = 3.78, S.D. = 0.50).

4.2 Discussion

1 The an information system model for educational management in supply Chain according to career standards on thailand qualifications framework for vocational education is considered to be highly appropriate and the design was according to the review of documents and relevant literature from both within and outside the country on developing research framework.

2 The efficiency evaluation model was in accord with the related literature from outside the country on supply chain management information system [1],[2],[3],[4],[8],[9].[10],[11],[12],[13]

5. Recommendations

An information system model for educational management in supply chain according to career standards on thailand qualifications framework for vocational education comprises six main components, namely Sub-components,Suppliers, Service provider ,Manufacturer, Finished product and customers is highly appropriate ,but it has not been actually implemented in any colleges. Therefore, if possible it should be implemented in some vocational college. The feedback information from the implementation could be used to further improve model.

6. References

[1] Chansamut, A., Piriyasurawong., 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.

[2] Chansamut, A, Information and Communication Technology System Supply Chain Management for research in higher education institutes. University of Thai Chamber of Commerce. Journal Humanilies and Social Sciences. Vol 36 No 2, 210- 221. 2016.

[3] 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

[4] 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

[5] Office of the National Economic and Social Development Board, (2012) , The Eleventh National Economic and Social Development Plan (B.E. 2011 – 2016) . Available at : http://www. nesdb.go.th . /Portals/0/news/plan/p11/plan11.pdf. (accessed: 06 June 2021).

[6] (2006).The Eleventh National Economic and Social Development Plan (B.E. 2007 – 2012) . . Available at : http://www.nesdb go.th/?tabid=139. (accessed: 06 June 2021).

[7] Office of the Commission on Higher Education., (2009). National Qualifications Framework for Higher Education. Available at: http://www. mua.go.th /users/tqf- hed. (accessed: 06 June 2021).

[8] 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: 06 June 2021).

[9] Kasmari, Basukiyanto and Kis Indriyaningrum Application of the Supply Chain Operation Reference (SCOR) Method: Batik SMEs in Indonesia. International Journal of Supply Chain Management. Vol 9 No 5, 1014-1020. 2020.

[10] Lestari, Y.D., OKdinawati, L and Simatupang, T.M. Halal Logistic Business Model Development in Indonesia. International Journal of Supply Chain Management. Vol 7 No 3, 238 -250.2018.

[11] Ramos, E., Mesia, R M., Cavero, C., Vera, B And Wu, Z. Modeling the Distribution of Organic Coffee Supply Chain from Junín Region, Peru. International Journal of Supply Chain Management. Vol 8 No 2, 394-403.2019.

[12] Rizal Razalli, M. Managing Halal Certification Supply Chain: Determinants Success Factors Framework for a Hotel Performance. International Journal of Supply Chain Management. Vol 7 No 1, 149- 154.2018.

[13] Syahdar Baba, H., Asnawi, A., Ihsan Andi Dagong,M and Sirajuddin, SN. Performance of Goat Production Supply Chain Models and Institutions in South Sulawesi, Indonesia. International Journal of Supply Chain Management. Vol 9 No 5, 789-796. 2020.