

# Digital Supply Chain Model for Higher Certificate Management in Thailand

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**Abstract**—The purpose of research study were to study and to evaluate digital supply chain model for higher certificate management in Thailand. The samples in the research study consisted of ten purposively selected experts consisted of five experts on supply chain management, five experts on Digital Technology, Data were analysed by arithmetic mean and standard deviation. The research findings model seven elements namely main components, Supplier, Organization (Manufacturer, Finished product, Customers Satisfaction and Feedback. The ten experts agree that digital supply chain model for higher certificate management in Thailand was high suitability that show the model is appropriate and applicable to real practice.

**Keywords**— *Digital supply chain model, higher certificate management in Thailand*

## 1. Introduction

At present, Thai education system is very significant. Thai government has realized the importance of improving the country to increase its capability to compete with other countries in every aspect. Especially, in educational development that leads to the development of quality products 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. One of the strategies is the application of the supply chain management system to educational development in order to increase competitive ability. Thailand is a part of world community, it needs to develop its research systems for the development of the country. 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. It is to enable the creative economy to be a new mobilizing power that leads toward a 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.[12] The researchers have realized the importance of manpower 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 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 who can work efficiently to increase output. The organizations, therefore, must have sufficient information to increase their values the demand of customers. Thus, the supply chain management process is a key process in supporting the organization’s whole activities system from upstream to downstream. It enables the organization to promptly check Based on this realization,[1] the researchers have decided to develop digital supply chain model for higher certificate management in Thailand.

## 2. Related work

2.1 Supply Chain Management  
Kham Nai in 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. The unit (Manufacturer) means the person who is responsible for transforming the raw materials received from the supplier. To have higher value 3. Distribution Center (Distribution Centers) 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.

Supply Chain Management is the integration of key business processes from end user through original suppliers that provides products, services, and information that add value for customers and other stakeholders [7].

[8] suggested the business enterprise networks include manufacturers, raw material, suppliers, transportation, providers, wholesalers, retailers as well as other intermediaries including customers. Verma and 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 and money circulation.

[1] suggested conceptual framework of supply chain management information system for curriculum management based on Thailand Qualifications Framework for Higher Education. The objectives of this research are (1) to synthesize a conceptual framework of supply chain management information system for curriculum management based on Thailand Qualifications Framework for Higher Education; and (2) to evaluate the conceptual framework of supply chain management information system for curriculum management based on Thailand Qualifications Framework for Higher Education. The research sample totaling 10 experts consisted of five experts on supply chain management, two experts on curriculum, and three experts on information technology. The employed research instrument is a questionnaire. Statistics employed for data analysis are mean and standard deviation.

The research methodology consisted of six phases: (1) the studies and syntheses of related documents, research studies, and articles; (2) the drafting of preliminary conceptual framework; (3) the identification of experts; (4) the development of an evaluation form to assess appropriateness of the conceptual framework; (5) the data collection and analysis; and (6) the final improvement of the conceptual framework based on suggestions of the experts.

Research findings show that the synthesized conceptual framework of supply chain management information system for curriculum management based on Thailand Qualifications Framework for Higher Education comprises four main components, namely, Suppliers, University (Manufacturer), Education Customers, and Consumer. Evaluation results by the experts show the evaluation rating mean of 4.07 with standard deviation of 1.10 indicating that the conceptual framework is considered to be at the good level.

Furthermore, evaluation results of appropriateness for sub-components are as follows:

1. The appropriateness rating mean for sub-components of the Supplier component is 4.15, which can be interpreted to be at the good level.

2. The appropriateness rating mean for sub-components of the University component is 4.20, which can be interpreted to be at the good level. This is because the University component contains the sub-components at the decision making level of the educational supply chain.

3. The appropriateness rating mean for sub-components of the Education Customers component is 4.20, which can be interpreted to be at the good level. This is because the Education Customers component contains the sub-components of direct service receivers.

4. The appropriateness rating mean for sub-components of the Consumer component is 4.10, which can be interpreted to be at the good level. This is because the Consumer component contains the sub-component of customers as the end-of-supply chain process that affect the quality of graduates to be delivered to the society.

The overall evaluation result for the synthesized conceptual framework of supply chain management information system for curriculum management based on Thailand Qualifications Framework for Higher Education shows the overall rating mean of 4.14 and standard deviation of 1.00, which means that the synthesized conceptual framework is appropriate at the high level and can be appropriately applied in actual work settings.

Information and Supply Chain

Digital and supply is a key process to support an education whole activities system from upstream suppliers to downstream consumers. It enables the organization to promptly check the supply chain and digital to ensure that the organization operates smoothly based on the determined strategies. The process consisted of suppliers, manufacturer customers.

### 3 Research Methodology

3.1 Analyse and synthesize documents and former research relevant to the elements of digital supply chain model for higher certificate management in Thailand.

3.2 Study digital supply chain model for higher certificate management in Thailand by interviewing the ten expert

3.3. A model is developed based on the data obtained from the expert

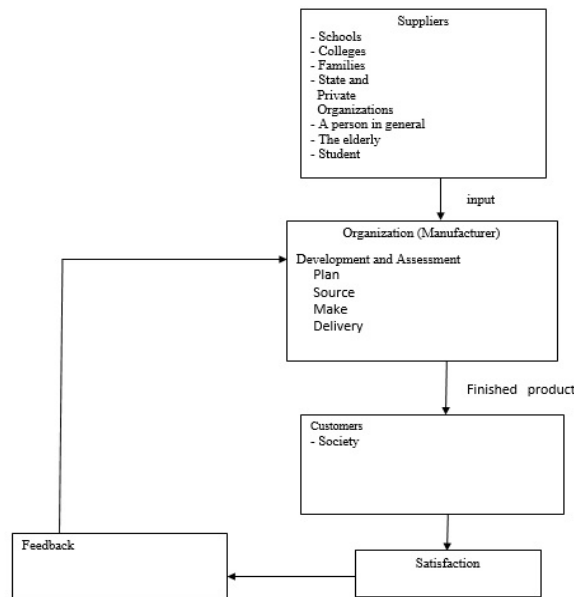
3.4 The model is presented to expert for consideration and modified it as guided.

3.5 Create a form for evaluating the suitability digital supply chain model for higher certificate management in Thailand namely main components, Supplier, Organization (Manufacturer) . Finished

product, Customers Satisfaction ,Feedback. and sent to the ten experts in order to ask their opinions on appropriateness of the model , Responses from the experts were analysed to find the mean and standard deviation.

### 4 Research Findings

Research findings digital supply chain model for higher certificate management in Thailand in figure 1 as shown below:



**Figure 1:** Digital supply chain model for higher certificate management in Thailand [11],[13]

#### 4.1 Suppliers

Suppliers mean the organizations or a person in general that supply raw materials to the manufacturer. They can apply for admission via the computer system that can store the data.

#### 4.2 Organization (Manufacturer)

The manufacturer means the organization or private that produces graduated students. It performs the duty to transform raw materials into the finished products. The university will perform its duty of student development and evaluation according to course standards for Higher of each activity, namely offer the curriculum, consider the curriculum, curriculum operation, budget, evaluation, operation report.

#### 4.3 Finished product

The education customers mean students or a person in general who graduate from organization.

#### 4.4 Customers

The customers mean the end-of-process component of the model which means that the society.

#### 4.5 Satisfaction

Satisfaction refer to evaluate the satisfaction of new breed of graduate in terms of qualifications are assigned.

#### 4.6 Feedback

Feedback is the Information obtained from satisfaction analysis with the relationship between Productivity and customers [2],[3],[4],[5],[6],

**Table 1:** Results for evaluation of model by 10 experts comprising 5 experts on supply chain management, 2 experts on digital Technology are shown in Tables 1 below:

Number	Evaluation Lists	Mean	Std. Deviation	Suitability
1	Main components	3.67	0.62	High
2	Suppliers	3.68	0.67	High
3	Organization (Manufacturer)	3.71	0.57	High
4	Finished product	3.70	0.48	High
5	Consumers	3.70	0.67	High
6	Satisfaction	3.70	0.67	High
7	Feedback	3.60	0.51	High
	Summary	3.68	0.59	High

Table 1, The experts found that digital supply chain model for higher certificate management in Thailand in higher education institutions is highly appropriate ( $\bar{X} = 3.68$ , S.D. = 0.59).

## 5 Discussion

Digital supply chain model for higher certificate management in Thailand is considered to be high appropriate ( $\bar{X} = 3.68$ , S.D. = 0.59), and the design was corresponds to the research of Chansamut and Piriyasurawong has studied supply chain and information system about educational [1] In addition, with the study of chansamut suggesting that supply chain and information system also. [2],[3],[4],[5],[6]

## 6 Conclusion

Digital supply chain model for higher certificate management in Thailand is appropriate at the high level development ( $\bar{X} = 3.68$ , S.D. = 0.59) that show the model is appropriate and applicable to real practice.

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