

Supply Chain Management Information System Model for Electric Power Management in Thailand

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Abstract—The paper aimed to design supply chain management information system model for electric power management in Thailand and an evaluation of the model. A Samples are ten experts within the field of information system and supply chain. The data is analysed by means and standardized deviations. The research result shows that the model consists of eight elements namely main components, seller Power plant generates electricity, Substation, Transmission, Substation, Power Lines and Customers. the assessment of model using Black-Box technique and the result shows the overall rating mean of 3.65 and standard deviation of 0.58, which means that the model is appropriate at the high level and can support an information system development.

Keywords— *supply chain management information system model, electric power management ,Thailand*

1. Introduction

Nowaday,Electric control management is the significance in Thailand and Thai individuals have been longing for control. Individuals require control to run their homes, cars, computers, etc. To be can able to control control is crucial to today's society. Control is characterized as “Voltage or Current” which continues in a persistent plow of current supply. The current inside this condition comes in two flavors Substituting Current Power and straight Electric. Each circuit planned nowadays needs control to be connected for the circuit to smooth. straight Electric is the premise for most circuit plans that goes into regular items. On the off chance that a circuit has no control a circuit would not be able to perform its wanted work. A variable straight Electric control supply, seen in each gadgets lab. These lab control supplies are exceptionally great for testing a circuit within the lab but not valuable to be utilized in a item application. These control supplies can be exceptionally bulky and not exceptionally portable. There's a require for a power supply that's cheap, solid, effective, and little in the event that the hones of supply chain administration are viable in its Control supply organizing [18] Usage of the idea

about supply chain management information system is applied to an electric power . Depending on the prerequisites or limitations imposed by the community at large technology and resources, this will be optional. as a result of rising fierce competition from both within and beyond the region, the firm must be very competitive. Organizations in the sector must have staff with knowledge, aptitude, and skills who can work effectively to boost productivity and products if they want to remain highly competitive. So, the firms must have the knowledge and resources to raise their standards and meet customer demand. In order to support the organization's entire system of activities spanning upstream to downstream, the supply chain management process is therefore a crucial activity. It allows the company to quickly verify the information service to make sure everything is running smoothly. [1] Thus according realization, researcher has decided to design supply chain management information system model for electric power management in Thailand for use in an operations that will boost consumer pleasure.

2. Related work

Information management systems and the supply chain Systems for managing the supply chain and information have the power to transform firms and encourage the establishment of new businesses. Their primary objective is to improve information flow and facilitate decision-making. One of the few components of the supply chain that can provide better performance while also being more affordable is a system for managing information. It lets organizations to save important information in an accessible format and aids in decision-making for operations and planning. Software-based and network-based technology adoption and successful deployment play a significant role in the success of the supply chain by enabling information flow and improving the effectiveness of supply chain activities. In the supply chain, logistics tasks such as planning, designing, and interchange of products and data to support fundamental logistics

operations like purchasing, distribution, transportation, inventory control, packaging, and production. Information technologies are regarded as an organization's resource, a source of its competitive advantage, and a change-catalyst.[18]

All corporations aim to meet supply chain but instead information system goals. Supply Chain and Information will aid businesses in increasing productivity and cutting costs, By keeping a solid supply chain and information, high value customers and suppliers can be acquired or kept. They will commit the corporations to the objective of raising buyer pleasure.

3. Research Methodology

3.1 Analyse and synthesize former researches relevant to the elements of supply chain management information system model for electric power management in Thailand

3.2 Study about supply chain management information system model for electric power management in Thailand by interviewing the expert

3.3. Create supply chain management information system model for electric power management in Thailand

3.4 Suggest the model to the advisors for consideration and revision.

3.5 Suggest the model to the experts for consideration by in-depth interview.

3.6. Create the instruments for assessing model's suitability.

3.7 Provide the designed model to the ten experts consisted of five experts on supply chain management, 5 experts on information system.

3.8 The model is modified according to the experts' suggestions.

3.9 After modification, presenting the model in the form of diagram with report.

3.10 Analyze the results of evaluation of the model by mean and standard deviation according to the recommendation of experts.

4. Results

Supply chain management information system model for electric power management in Thailand are shown in Figure 1.

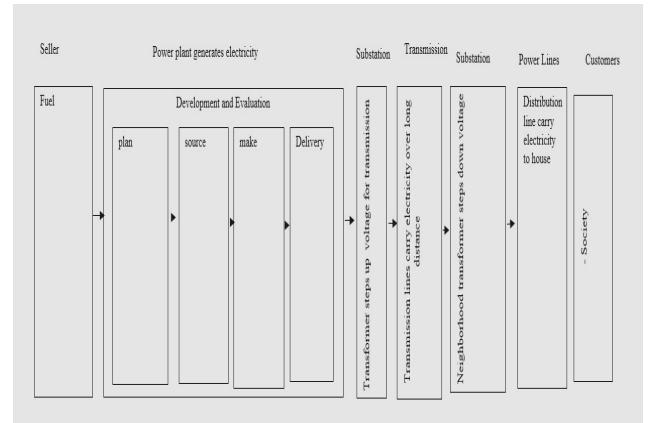


Figure 1: Supply chain management information system model for electric power management in Thailand

According to figure 1, a nation's electrical power supply system is made up of generators that produce electricity. It fulfils the responsibility of converting raw materials into final goods. The power plant will carry out its responsibility for planning and assessing each action, namely plan, source, make, and deliver. High-voltage transmission lines, distribution lines, substations, and energy control centres are included in the portion. Transmission lines carry electricity over large distances, while distribution lines give it to users. Display the electrical supply chain, including the transmission and distribution networks and connections between electricity sources and end users. similar to from the energy sources (production) to the consumer's doorstep through the distribution system,A power supply serves as a buffer primarily for providing electricity to users.[1],[2],[3],[4],[5],[6],[7],[8],[9],[10],[11],[12],[13],[14],[15],[16] and [19]

Table 1: Appropriateness of main components about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Seller	3.60	0.69	High
2	Power plant generates electricity	3.60	0.69	High
3	Substation	3.60	0.51	High
4	Transmission	3.70	0.48	High
5	Substation	3.60	0.84	High

Table 1 : (Continue)

No.	Items	\bar{X}	S.D.	Suitability
6	Power Lines	3.70	0.67	High
7	Customers	3.63	0.94	High
	Total	3.63	0.69	High

Table 1 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.63$, S.D. = 0.69)

Table 2 : Appropriateness of seller about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Fuel	3.70	0.48	High
	Total	3.70	0.48	High

Table 2 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.70$, S.D. = 0.48)

Table 3 : Appropriateness of power plant generates electricity about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Development and Evaluation	3.70	0.48	High
	Total	3.70	0.48	High

Table 3 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.70$, S.D. = 0.48)

Table 4 : Appropriateness of Substation about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Transformer steps up voltage for transmission	3.70	0.67	High
	Total	3.70	0.67	High

Table 4 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.70$, S.D. = 0.67)

Table 5 : Appropriateness of transmission about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Transmission lines carry electricity over long distance	3.70	0.48	High
	Total	3.70	0.48	High

Table 5 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.70$, S.D. = 0.48)

Table 6 : Appropriateness of substation about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Neighbourhood transformer steps down voltage	3.60	0.51	High
	Total	3.60	0.51	High

Table 6 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.60$, S.D. = 0.51)

Table 7 : Appropriateness of power Lines about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Distribution line carry electricity to house	3.60	0.51	High
	Total	3.60	0.51	High

Table 7 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.60$, S.D. = 0.51)

Table 8 : Appropriateness of customers about supply chain management information system model for electric power management in Thailand

No.	Items	\bar{X}	S.D.	Suitability
1	Society	3.60	0.84	High
	Total	3.60	0.84	High

Table 8 Shows that the experts agree that Ssupply chain management information system model for electric power management in Thailand was a high suitability. ($x = 3.60$, S.D. = 0.84)

Table 9: Results for evaluation of supply chain management information system model for electric power management in Thailand

No	Evaluation Lists	\bar{X}	S.D.	Suitability
1	Main components	3.63	0.69	High

Table 9: (Continue)

No	Evaluation Lists	\bar{X}	S.D.	Suitability
2	Seller	3.70	0.48	High
3	Power plant	3.70	0.48	High
4	Substation	3.70	0.67	High
5	Transmission	3.70	0.48	High

6	Substation	3.60	0.51	High
7	Power Lines	3.60	0.51	High
8	Customers	3.60	0.84	High
	Total	3.65	0.58	High

From Table 9 ,The evaluation is carried out by submitting the developed model to 10 experts found that supply chain management information system model for electric power management in Thailand is highly appropriate ($\bar{X} = 3.65$, S.D. = 0.58).

5. Discussion

The results of assessment on the model's elements show that the 8 main components of Supply chain management information system model for electric power management in Thailand is considered to be high appropriate ($\bar{X} = 3.65$, S.D. = 0.58), and the design was corresponds to the research of Chansamut and Piriyasurawong has studied supply chain and information system about educational [1] and the results are in accordance to those of chansamut suggesting that supply chain and information system also. [2],[3],[4],[5],[6],[7],[8],[9],[10],[11],[12],[13],[14],[15],[16] and [17]

6. Conclusion

The results of assessment on application of the concept about Supply chain management information system model for electric power management in Thailand is appropriate at the high level development The rating mean of 3.65 and standard deviation of 0.58, which means that the model is appropriate at the high level and can support an information system development.

Recommendation

1. If at all possible, the supply chain management information system model for electric power management in Thailand should be properly utilized in real-world work situations for the administration of electric power in Thailand.
 2. There should be case studies of businesses that successfully create or use the model.
- The model is thought to be highly appropriate. As a result, it ought to be adopted in a company, if at all possible.
4. To design supply chain management information system model for electric power management in Thailand should be created in Thailand.

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