A Preliminary Study of Supply Chain Management for Logistics in Indonesia

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ABSTRACT

Supply chain management is related to process of materials or supply management from basic raw of material supply to final deliverable product. Especially for agribusiness and agroindustry, supply chain management (SCM) deals with the management of commodity and product movements with varying time differences depending on geographic location. In Indonesia, there are many problems related to logistic which is impacted to logistic quality and price. The aim of this research is to collect data and identify factors that will support of SCM implementation. As the result, regulation and legislations is the factor that can support or inhibit supply chain management. The regulation and legislations of logistics supply chain management must be relevant with environmental regulation because logistics is related to natural resource management. To support data tracking and management, the logistics supply chain management can be supported by information and communication technology. The stakeholder can be tracked the logistics form perpetrators and logistics service providers and transportation used.

Keywords : Supply Chain Management, Logistics, Preliminary Study

I. INTRODUCTION

The definition of supply chain management is process of materials or supply management from basic raw of material supply to final deliverable product, including process recycling and re-use with proposed on how company used their suppliers' processes, technology and capability to get more competitive advantage [2].

The related works of supply chain have been done with different purposes. The research by Young and Peterson (2014) explored all of component of SCM itself, including physical, information, and financial flows. The component must be can operate functions of sourcing, making, delivering, returning and overarching planning overarching planning when responding to and recovering from emergency situations [3].

Research by Lynch (2018) explored the tools to support emergency SCM. Furthermore, they explained on how effective employment of hybrid airships responding to and recovering from emergency events in context of emergency SCM [4]. Lanko, Vatin, and Kaklauskas (2018) explored of implementation of Radio Frequency Identification (RFID) and block-chain technology to support creating a transparent system of interaction and transition between all participants in supply chain management [5].

Ama, Sediyono, and Setiawan (2014) discussed about the distribution of production in Minahasa, Indonesia. The research method used is research and development method. The design of the system is made by considering the aspects of functional and non-functional requirement [6].

Specifically for agribusiness and agroindustry, supply chain management deals with the management of commodity and product movements with varying time differences depending on geographic location. Supply chain management can demonstrate the economic and conceptual relationships between producers, trade centres, and distribution chains among various parties with consumers [7].

In Indonesia, there are many problems related to logistic which is impacted to logistic quality and price. However, it can be tackled if logistic distribution is designed and handled with a good plan and management [8].

This research is part of research with titled Supply Chain Management System Model: A Case Study of Indonesia. In this time, we attempted to collect data and identify factors that will support of SCM implementation. The further research, we will confirm the identified factors an collect data to model logistic supply chain management using UML [9].

II. LITERATURE REVIEW

This section explored the fundamental of supply chain management and the related works.

A. Supply Chain Management

Supply chain management related to process of materials or supply management from basic raw of material supply to final deliverable product, including process recycling and re-use. The aim of supply chain management is how company used their suppliers' processes, technology and capability to get more competitive advantage [2].
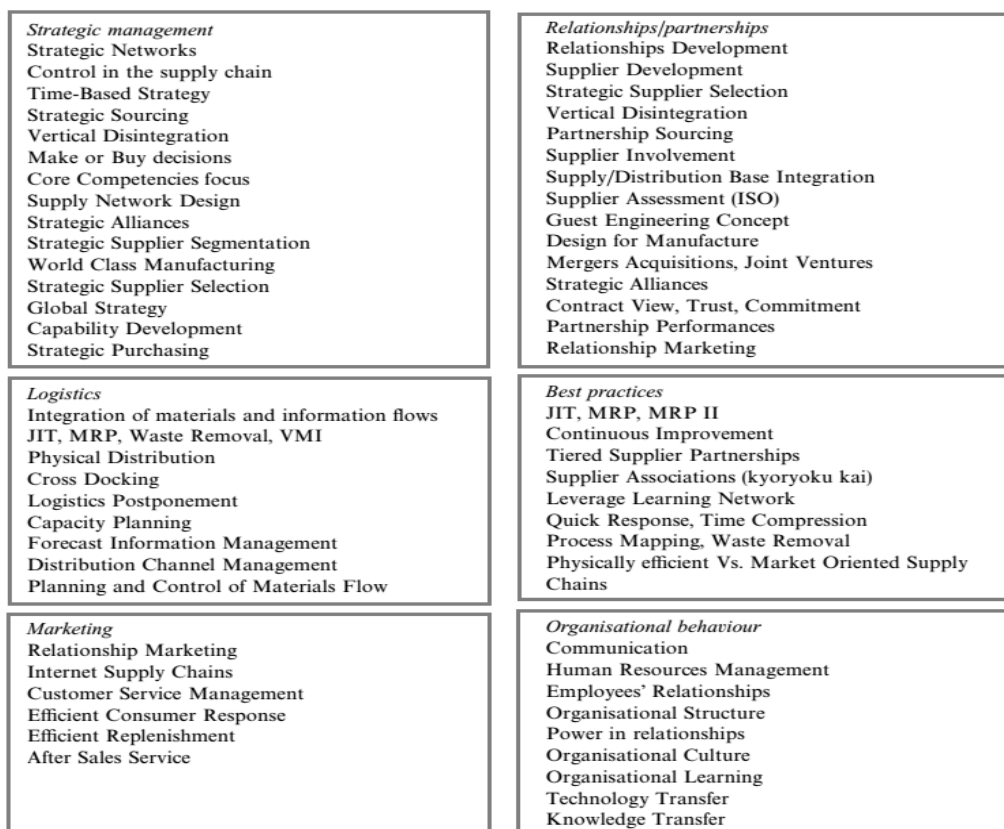
Strategic management	*Relationships/partnerships*
Strategic Networks	Relationships Development
Control in the supply chain	Supplier Development
Time-Based Strategy	Strategic Supplier Selection
Strategic Sourcing	Vertical Disintegration
Vertical Disintegration	Partnership Sourcing
Make or Buy decisions	Supplier Involvement
Core Competencies focus	Supply/Distribution Base Integration
Supply Network Design	Supplier Assessment (ISO)
Strategic Alliances	Guest Engineering Concept
Strategic Supplier Segmentation	Design for Manufacture
World Class Manufacturing	Mergers Acquisitions, Joint Ventures
Strategic Supplier Selection	Strategic Alliances
Global Strategy	Contract View, Trust, Commitment
Capability Development	Partnership Performances
Strategic Purchasing	Relationship Marketing

Logistics	*Best practices*
Integration of materials and information flows	JIT, MRP, MRP II
JIT, MRP, Waste Removal, VMI	Continuous Improvement
Physical Distribution	Tiered Supplier Partnerships
Cross Docking	Supplier Associations (kyoryoku kai)
Logistics Postponement	Leverage Learning Network
Capacity Planning	Quick Response, Time Compression
Forecast Information Management	Process Mapping, Waste Removal
Distribution Channel Management	Physically efficient Vs. Market Oriented Supply
Planning and Control of Materials Flow	Chains

Marketing	*Organisational behaviour*
Relationship Marketing	Communication
Internet Supply Chains	Human Resources Management
Customer Service Management	Employees' Relationships
Efficient Consumer Response	Organisational Structure
Efficient Replenishment	Power in relationships
After Sales Service	Organisational Culture
	Organisational Learning
	Technology Transfer
	Knowledge Transfer

Figure 1. Topic in supply chain management [10]

B. Related Work

The related works of this research is derived based on the current development of supply chain management (SCM) and the condition of SCM in Indonesia.

The research by Young and Peterson (2014) explained SCM should integrate all of component of SCM itself, including physical, information, and financial flows. The component must be can operate functions of sourcing, making, delivering, returning and overarching planning overarching planning when responding to and recovering from emergency situations [3].

Study by Lynch (2018) explained the tools to support emergency SCM. Furthermore, they explained on how effective employment of hybrid airships responding to and recovering from emergency events in context of emergency SCM [4]. Lanko, Vatin, and Kaklauskas (2018) explained of implementation of Radio Frequency Identification (RFID) and block-chain technology to support creating a transparent system of interaction and transition between all participants in supply chain management [5].
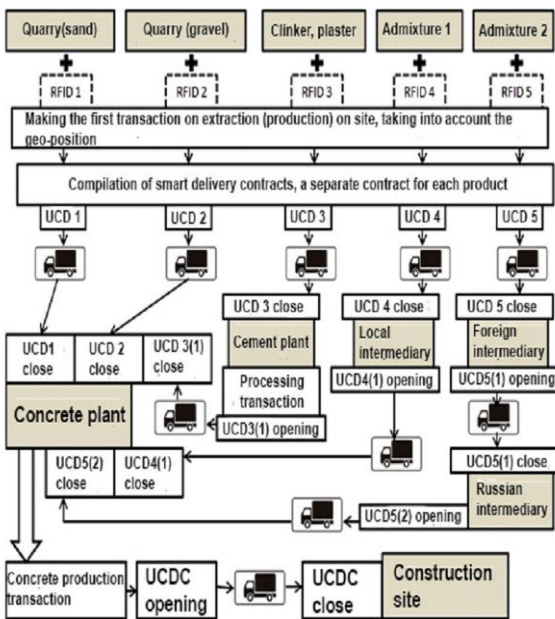
Figure 2. Example of complete production and logistics chain in construction site [5].

Ama, Sediyono, and Setiawan (2014) discussed about the distribution of production in Minahasa, Indonesia. The research method used is research and development method. The design of the system is made by considering the aspects of functional and non-functional requirement [6].

III. RESEARCH METHODOLOGY

This research is preliminary study that is part of research with titled Supply Chain Management System Model: A Case Study of Indonesia. In this research, we conducted five phases of research methodology, including literature study, data collection, data analysis, data presentation and conclusion, which is presented in Figure 2.
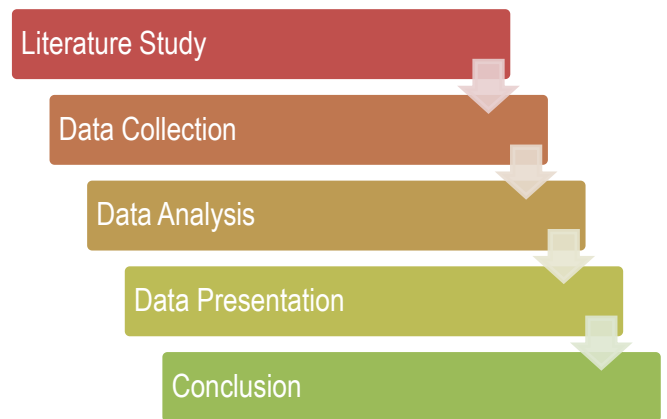
Figure 3. Research Methodology

In phase of literature study, we searched the relevant literature of supply chain management and found four literature, including Ama, Sediyono, and Setiawan (2014), Young and Peterson (2014), Lynch (2018), Lanko, Vatin, and Kaklauskas (2018). In second phase, we conducted data collection through Focus Group Discussion (FGD) [11] with member of Supply Chain Indonesia. Based on data from FGD, we conducted data analysis by using content analysis [12].

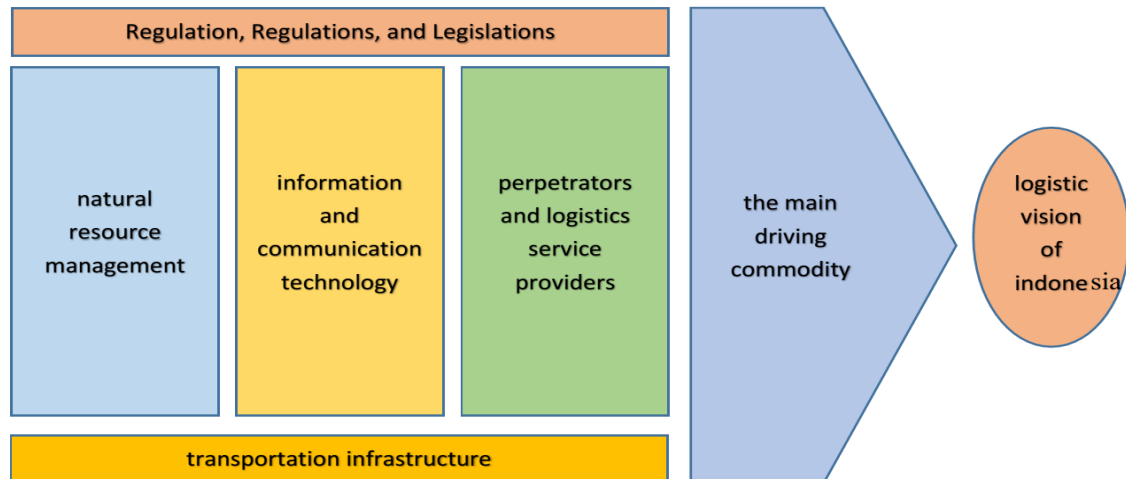The result of this research is depicted in graphic and summarized in conclusion.

IV. RESULT

Transportation infrastructure became the main factor of supply chain management. The transportation is related to traveling time and cost that will be spent to delivered a raw or final product to costumer. The supporting factor of supply chain management also regulation and law to maintain and develop transportation infrastructure, and supply management. The factor is presented in Figure 2.

Figure 4. Factor of supply chain management in Indonesia

Figure 5. Main factor of supply chain management in Indonesia

Based on factors that are collected in Figure 4, we grouped the factors into main factors that is depicted in Figure 5. The main factor including regulation and legislations, natural resource management, information and communication technology, perpetrators and logistics service providers and transportation infrastructure.

V. CONCLUSION AND FUTURE RESEARCH

Based on result of data analysis of data from Focus Group Discussion (FGD) with member of Supply Chain Indonesia, we conclude as follows:

1. The factor of transportation infrastructure became the main factor of supply chain management. The transportation is related to traveling time and cost that will be spent to delivered a raw or final product to costumer.
2. The regulation and legislations is the factor that can support or inhibit supply chain management [1]. The regulation and legislations of logistics supply chain management must be relevant with environmental regulation because logistics is related to natural resource management. To support data tracking and management can be supported by information and communication

technology [13]–[15], including for logistics supply chain management. The stakeholder can be tracked the logistics form perpetrators and logistics service providers and transportation used.

The future research of this research is confirmed factor with state-of-research and experts.

VI. ACKNOWLEDGMENT

VII. REFERENCES

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