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VALIDATION OF THE FOOTWEAR STAKEHOLDER CHAIN MARKETPLACE (FSCM) IDEA TO INCREASE THE COMPETITIVENESS OF THE FOOTWEAR INDUSTRY

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***Abstract*:** The purpose of this study is to validate an efficient and effective of the footwear stakeholder chain marketplace system for coordination among stakeholders in the footwear industry. Informants used to collect data are suppliers of raw materials, auxiliary materials and machinery in the footwear industry, footwear manufacturers, footwear customers, financial institutions, and logistics services. Methods of data collection using interviews, questionnaires and observation. The data collected is tabulated for the process of analysis, synthesis, and product development using the beta version of the product. The results of the study show the features of consumers, features of manufacturers, features of suppliers, features of funding institutions, and features of validated logistics services. The validated model is beneficial for consumers, suppliers, manufacturers, funding institutions, and logistics services. For consumers, especially can make their own designs. For suppliers and manufacturers, they can share access. For funding institutions and logistics services, they can be very competitive. The creation of this efficiency and effectiveness encourages the development of competitiveness in the footwear industry.

Keywords: *Stakeholder chain marketplace, efficient, effective, competitiveness, footwear*

1. Introduction [Times New Roman 12 bold]

The footwear industry in Indonesia is one of the leading export industries. During the pandemic period, the export value of Indonesian footwear in January – July 2020 increased by 10.55 percent to US$ 2.86 billion from the realization in January – July 2019 of US$ 2.58 billion. Footwear export performance throughout 2020 was US$4.80 billion, an increase of 9 percent compared to exports in 2019. The growth in export value was driven by exports of sports shoes to the United States and several export destination countries had shifted some of their orders from China to Indonesia. Currently, Indonesia is still the world's top four footwear exporter behind China, South Korea, and Vietnam.

The footwear industry is a labor-intensive industry so labor costs are a major consideration. This labor cost reaches 30 percent of the production cost. Rising labor costs remain the main factor driving the movement of manufacturing from more developed countries to less developed countries in Asia. Low wages continue to be the biggest advantage for many developing countries to attract the footwear industry.

In comparison, Vietnam's monthly minimum wage in 2019 varied by region from $122 to $176. This amount of wages is half of the wages in China, which is between US$143 and US$348. The minimum wage in Indonesia is between US$121 and US$265. Although in the lower range the Indonesian minimum wage is equal to the Vietnamese minimum wage, in the upper range the average is higher by 40 percent. Unfortunately, most of the high minimum wages are located in the mainstay of Indonesia's manufacturing industry, namely Jabodetabek. With an increase in the average minimum wage per year above 10 percent, Indonesia is the country with the highest annual wage increase compared to major competitor countries, especially Vietnam, which ranges from 5-6 percent.

For this reason, the footwear industry must become a competitive industry in order to compete with Vietnam and China. Proper Supply Chain (SC) integration is a major issue in a globalized world to increase industrial competitiveness so that it can survive in the global market.

In the model of supply chains and value delivery networks, the term integration of upstream and downstream is known to distribute products. Upstream partners are companies that supply the raw materials, components, spare parts, information, finances and expertise needed to create products. Downstream partners are distribution channels that lead to customers ranging from retailers to wholesalers.

The supply chain management view is a view that emphasizes that planning is based on supply or supply from manufacturers (Figure 1)

Figure 1: *Supply Chain Management* (SCM)

The supply chain management view has two approaches, namely the method approach and the tool or technique approach. Method is a way or procedure that is achieved to achieve certain goals. A technique is a specific way of solving a particular problem found in the execution of a procedure.

The supply chain management approach based on objectives is for supply chain efficiency, reduced delivery time and supply chain integration. **Supply chain efficiency** is achieved by optimizing the human resource strategy, building better relationships internally and within the organization, understanding the relationship between human resource systems, supply chain orientation and strategic results. **Reducing delivery time** is done by involving distributors to participate in the creation of important coordination plans on more and more shipping equipment. Supply chain integration is achieved by applying three different domains namely: business process redesign, supply chain redesign, and e-business design that can be applied to companies in all sectors.

The supply chain management tool or technique approach is carried out through: (1) project networks, (2) programming models, (3) bioobjective models, and (4) simple mathematical models. **The network model or programming model** includes the following activities: sending, processing and receiving orders. This network is modeled with mixed

integer programming to capture various advantages and disadvantages such as stationary inventory costs, processing activity costs, shipping costs, and penalties for late delivery of customer orders to support decision making about optimal allocation of limited resources in the supply chain, supplier selection, production, distribution, supply schedules, lower costs and higher revenues so as to maximize the benefits of the value chain. This model considers the degree of integration of suppliers, manufacturers, and distributors, as well as the independent relationship between manufacturers to manage supply through processes or even products to each other, and finally considers the influence of economic factors in decisions such as inflation. Electronic Supply Chain Management (e-SCM) is a management concept where companies use internet technology to integrate all company partners, especially those related to the supply system of raw materials or resources needed in the production process. Thus, e-SCM is an integration between e-commerce and supply chain management.

The bioobjective model for supply chain design for the manufacturing industry considers the importance of the trade off between supply chain costs and lead times to determine the optimal location of manufacturing activities. Contemporary companies need to proactively improve supply chain performance. Coordination and integration of decision-making across the supply chain **between appropriate partners** is often used for this purpose. Such supply chain coordination strategies include the use of common cycle times, fixed quantity discounts, use of optimal batch sizes, and quality and inspection improvements.

A simple mathematical model for determining the optimal seller-buyer inventory policy by considering quality check errors. The goal is to minimize the annual costs incurred in the supply chain.

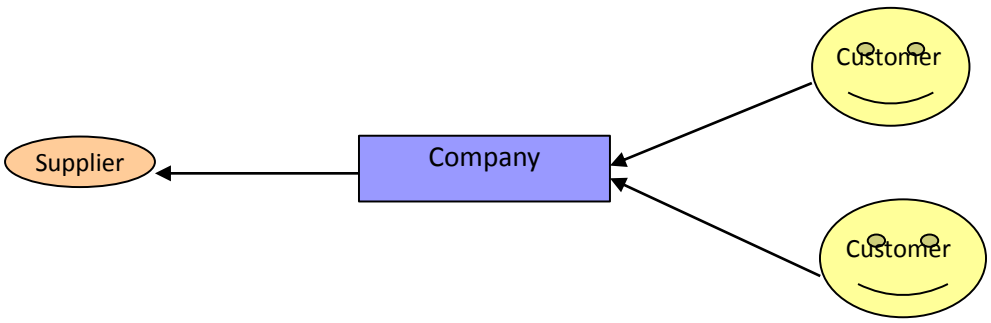

Figure 2: *Demand Chain Management* (DCM)

The demand chain management (DCM) view is a view that emphasizes that planning based on customer demand (Figure 2) This DCM is highly organized where the key is the creation of channels with a high degree of partnership and interdependence between partners. This type of channel is known as an organized vertical marketing system in the classic marketing channel. The concept of a vertical marketing system lies behind the definition of demand chain and demand chain management.

Thus, a demand chain can be defined as an integrated and aligned chain built on partnership and interdependence aimed at creating unique competencies to identify and satisfy customer perceived value. Demand chain management can be defined as an effort to create, maintain and continually develop a dynamic and aligned demand chain.

These issues encourage footwear companies to efficiently and effectively coordinate all internal processes, build and maintain harmonious relationships with suppliers, manufacturers, retailers, customers, funding institutions and logistics services within SC. Healthy relationships between elements in SC make the company have high competitiveness. The complexity of the alignment of the six elements lies in the various points of view and approaches that each element may have to produce sufficient coordination so that the formulation of the research problem is how to efficiently and effectively coordinate between stakeholders in the footwear industry.

2. Research Method

Validation is a process of collecting evidence and learning related to FSCM ideas through experimentation and user testing. Validation or smoke testing is carried out after the software development process to ensure that important functions of the program run properly [14]. The validation of this idea goes through several processes. This process was chosen to determine what the FSCM needs from customers, manufacturers, suppliers, funding institutions, and logistics services. If the data needs have been obtained then the idea development process is carried out. The validation process consists of interviews, distribution of questionnaires and observations. Observation is a slice of interview and questionnaire.

The interview process is carried out by first preparing a number of questions. Based on this list of questions, it is used to conduct an interview process related to the needs in application development such as features, business processes, and coordination processes between stakeholders.

Filling out the questionnaire is done online. The questions asked are problems that often occur between stakeholders, solutions to these problems and respondents' suggestions for applications to be developed.

The observation process is carried out by recording events at the observation location. The data collected is tabulated for the analysis, synthesis, and development processes. Product development using the beta version of the product.

3. Results and Discussion

3.1. Results

Customer Perspective

Based on the needs survey from a consumer perspective, it is shown in Table 1.

Table 1. Consumer Needs

No	Indicator	Respondent's Answer				
		5	4	3	2	1
1	Easy to understand features	80 (80%)	20 (20%)			
2	Consumers can make their own designs	100 (100%)				
3	Interesting web page	73 (75%)	27 (27%)			
4	websites are responsive to	100				

	smartphones (mobile friendly)	(100%)				
5	There is a promo page	100 (100%)				
6	New product information	84 (84%)	16 (16%)			
7	Ease of payment (credit card, debit card, & other payment methods)	75 (75%)	18 (18%)	7 (7%)		
8	The availability of contact and support information	70 (70%)	18 (18%)	12 (12%)		
9	Available user generated reviews	68 (68%)	20 (20%)	12 (12%)		
10	There is a related items feature	80 (80%)	15 (15%)	5 (5%)		

Source: Primary data processed

Information: 5 (very important), 4 (important), 3 (less important), 2 (not important) dan 1 (non needed)

Based on filling out questionnaires from 100 respondents, Table 1 shows that there are 3 consumer needs that are stated to be very important at 100%, namely consumers can make their own designs, websites are responsive to smartphones (mobile friendly) and there is a promo page. On the other hand, respondents stated that it was less important, namely the availability of contact and support information (12%), available user generated reviews (12%), ease of payment (credit cards, debit cards, & other payment methods) (7%), and there is a related items features (5%).

Supplier Perspective

Based on the needs survey from the supplier's perspective, it is shown in Table 2.

Table 2. Supplier Needs

No	Indicator	Respondent's Answer				
		5	**4**	**3**	**2**	**1**
1	Ensure the best price and quality	48 (96%)	2 (4%)			
2	Ensure stock availability	45 (90%)	5 (10%)			
3	Providing the best service	50 (100%)				
4	Dominate the market	40 (80%)	10 (20%)			
5	Ease of communicating with consumers	30 (60%)	10 (20%)	10 (20%)		
6	Ability to cooperate	45 (90%)	5 (10%)			

7	Share access with other suppliers	30 (60%)	5 (10%)	15 (30%)		

Source: Primary data processed

Information: 5 (very important), 4 (important), 3 (less important), 2 (not important) dan 1 (non needed)

Based on filling out questionnaires from 50 respondents, Table 2 shows that there is 1 supplier need which is stated to be very important at 100% is to provide the best service. On the other hand, respondents stated that it was less important, namely the ease of communicating with consumers (20%) and sharing access with other suppliers (30%).

Manufacturers Perspective

Based on the needs survey from the Manufacturer's perspective, it is shown in Table 3.

Table 3. Manufacturer's Needs

No	Indicator	Respondent's Answer				
		5	**4**	**3**	**2**	**1**
1	Ensure the best price and quality	27 (90%)	3 (10%)			
2	Ensure stock availability	30 (100%)				
3	Providing the best service	30 (100%)				
4	Dominate the market	20 (67%)	10 (33%)			
5	Ease of communicating with consumers	25 (83%)	5 (17%)			
6	Ability to cooperate	25 (83%	5 (17%)			
7	Production capacity	30 (100%)				
8	Share access with other manufacturers	20 (67%)	10 (33%)			

Source: Primary data processed

Information: 5 (very important), 4 (important), 3 (less important), 2 (not important) dan 1 (non needed)

Based on filling out questionnaires from 30 respondents, Table 3 shows that there are 2 manufacturer's need that are stated to be very important at 100%, namely ensuring the stock availability and providing the best service. None of the respondents' answers stated that they were less important for all the indicators for the questions above.

Funding Institution Perspective

Based on the needs survey from the perspective of funding institutions, it is shown in Table 4.

Table 4. Funding Institution Needs

No	Indicator	Respondent's Answer				
		5	4	3	2	1
1	Have a flexible product	18 (90%)	2 (10%)			
2	Have a profitable product (interest & term of payment)	16 (80%)	4 (20%)			
3	Fast Process	15 (75%)	5 (25%)			
4	Easy payment access	17 (85%)	3 (15%)			
5	Clear information access	15 (75%)	5 (25%)			
6	Registered with the Financial Services Authority (OJK)	20 (100%)				
7	Have a level of financial health with a minimum healthy condition	20 (100%)				
8	Has a minimum level of moderate to low risk	20 (100%)				
9	Meet the requirements of the gearing ratio	20 (100%)				
10	Not being subject to administrative sanctions by the Financial Services Authority (OJK)	20 (100%)				

Source: Primary data processed

Information: 5 (very important), 4 (important), 3 (less important), 2 (not important) dan 1 (non needed)

Based on filling out the questionnaire from 20 respondents, Table 4 shows that there are 5 needs for funding services that are stated to be very important, 100% are registered with the Financial Services Authority (OJK), have a financial soundness level with a minimum healthy condition, have a low minimum risk level, meet the requirements of the gearing ratio and not being subject to administrative sanctions by the Financial Services Authority (OJK). None of the respondents' answers stated that they were less important for all the indicators for the questions above.

Logistics Services Perspective

Based on the needs survey from the perspective of logistics services, it is shown in Table 5.

Table 5. Logistics Service Needs

No	Indicator	Respondent's Answer				
		5	4	3	2	1
1	Providing transportation throughout Indonesia without a 3rd party	16 (80%)	4 (20%)			
2	Provide real time tracking system	18 (90%)	2 (10%)			
3	Available at Regular prices	20 (100%)				
4	365 days operational	15 (75%)	3 (15%)	2 (10%)		
5	Provide 24 hours service	15 (75%)	3 (15%)	2 (10%)		
6	Flexibility in payment	17 (85%)	3 (15%)			
7	Providing delivery services for overseas destinations	15 (75%)	4 (20%)	1 (5%)		

Source: Primary data processed

Information: 5 (very important), 4 (important), 3 (less important), 2 (not important) dan 1 (non needed)

Based on filling out questionnaires from 20 respondents, Table 5 shows that there is 1 need for logistics services which is stated to be very important, 100% is available at regular prices. On the other hand, respondents stated that they were less important, namely operating 365 days (10%), providing 24 hours of service (10%), and providing delivery services for overseas destinations (5).

3.2.Discussion

In the model of supply chains and value delivery networks, the term integration of upstream and downstream is known to distribute products. The concept of SCM and DCM uses both approaches.

The model that will be developed is a model that only uses the upstream concept, thus eliminating downstream or product distribution chains through distribution channels. This model is called the stakeholder chain marketplace system as shown in Figure 3.

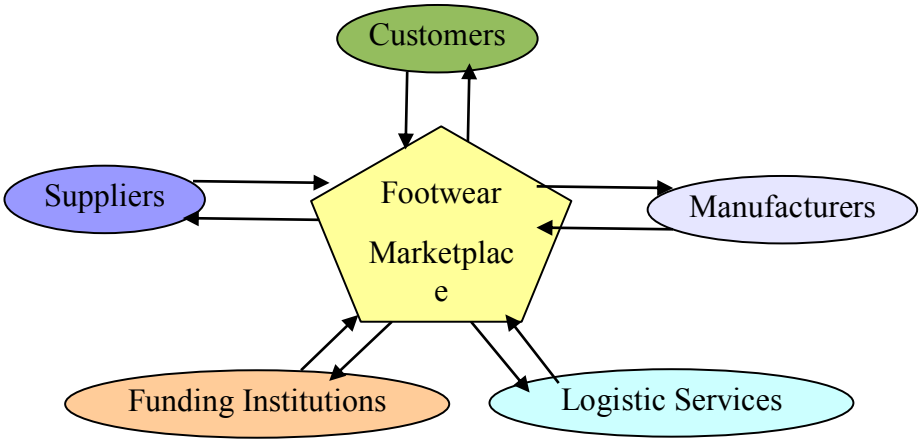

Figure 3. Stakeholder Chain Marketplace System

For customers, supply chain visibility will increase trust and even increase sales from certain manufacturers. Customers who have unlimited access to information become so enlightened that they can choose the manufacturer who gives the best price. In addition, customers can design their own desired product.

For suppliers, it is a source that provides the first materials in the form of raw materials, raw materials, auxiliary materials, semi-finished goods, and spare parts merchandise. They will easily evaluate costs between suppliers, how suppliers can support the production process and how suppliers deliver them. Thus suppliers become very competitive. In addition, suppliers can also "share access" between suppliers.

For manufacturers, it is important to have a system that supports efficient production planning, scheduling and control, proper supplier selection and to define efficient distribution protocols in order to integrate, synchronize and optimize plant performance throughout the value chain. Market competitiveness encourages manufacturers to choose the most appropriate supply chain network to reduce total costs and loss of time. In addition, manufacturers can also "share access" between manufacturers.

For funding institutions can offer a variety of services with lower interest rates and provide higher levels of service in the stakeholder chain. Therefore, an effective stakeholder chain provides a competitive advantage for all elements.

For logistics services, the speed of service and the completeness of flawless products will increase the trust of every stakeholder in the marketplace so as to encourage repeated requests for logistics services.

The stakeholder chain marketplace system is viewed horizontally consisting of suppliers, manufacturers and customers. If viewed vertically, it consists of customers, funding institutions and logistics services. Horizontal and vertical linkages include: suppliers, factories, manufacturers, customers, and logistics services. distributors and retailers are already represented in the marketplace.

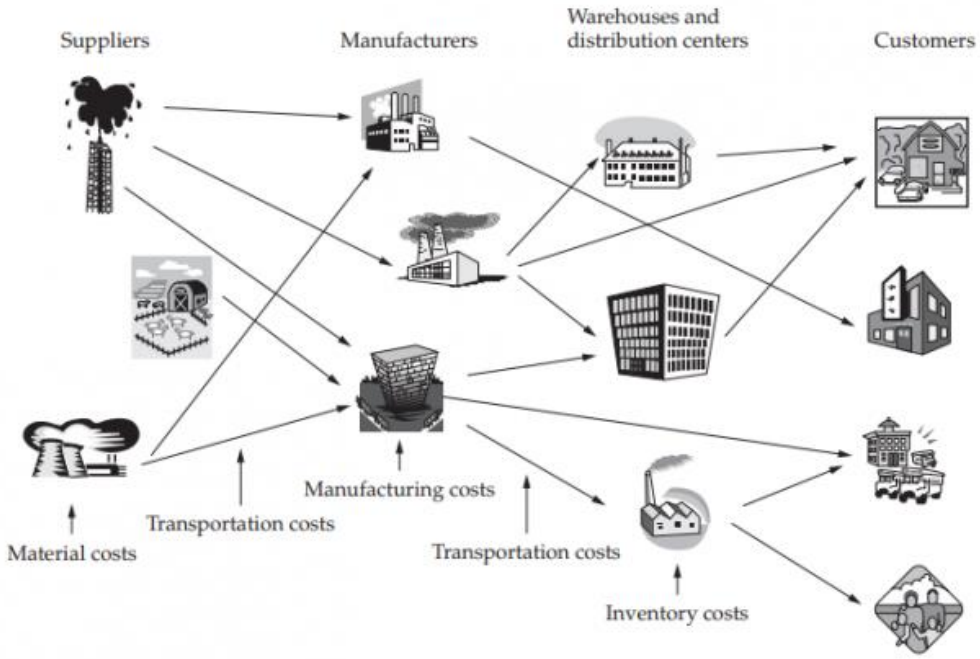

Figure 4: Logistic Network
Source: Managing The Supply-chain (Simchi – Levi et. al., 2003)

There are three kinds of flows that can be managed in the supply chain, namely: (a) **the flow of goods** from upstream to downstream or from suppliers to customers, for example raw materials sent to factories, after being produced goods are sent to distributors, retailers, and finally to the end user, (b) **the cash flow (financial)** and the like that flows from downstream to upstream containing credit limits, payments and payment schedules, and (c) **the flow of information** that can occur from upstream to downstream or vice versa such as requests for materials, requests for goods, delivery of orders, review of delivery status. The three flows are depicted in the logistics network (Figure 4).

4. Conclusion

The results of this study indicate that validated the footwear stakeholder chain marketplace (FSCM) model is beneficial for consumers, suppliers, manufacturers, funding institutions, and logistics services. For consumers, especially can make their own designs. For suppliers and manufacturers, they can share access. For funding institutions and logistics services, they can be very competitive. The creation of this efficiency and effectiveness encourages the development of competitiveness in the footwear industry.

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