

## MARKET TESTING OF FOOTWEAR STAKEHOLDER CHAIN MARKETPLACE

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**Abstract:** Footwear Stakeholder Chain Marketplace (FSCM) is a marketplace that integrates suppliers, producers, consumers, logistics services and funding institutions. Industry groups with core industries that interact intensively and form partnerships, both with supporting industries and with related industries can be said to be clusters in the marketplace. The purpose of this study is to examine the horizontal and vertical linkages in FSCM including: suppliers, manufacturers, makers, buyers, carriers, stores, sellers, distributors, retailers and customers. Testing is carried out using the market testing method using in-person usability testing techniques to improve performance and user experience. The procedure is done to collect respondents, find a comfortable room, and record the whole process. The results show that the home, consumers, suppliers, manufacturers, and forums display create a unique user experience. When consumers buy certain products, words that reinforce consumer choices will appear, such as: "Good choice!" or "Yum! We love that one". In addition, consumers also have the opportunity to display their designs and at the same time sell them in the artist shop. Suppliers and producers have the opportunity to share access.

**Keywords:** *Stakeholder Chain Marketplace, core industries, supporting industries, other industries, and industry clusters.*

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### 1. Introduction

The footwear industry in Indonesia is one of the leading export industries. The Central Statistics Agency (BPS) reports that the Gross Domestic Product (GDP) of the leather, leather goods and footwear industry at current prices (ADHB) will reach Rp42.51 trillion in 2021. If measured by GDP at constant prices (ADHK) this industry grew 7.75% to Rp28.17 trillion in 2021 compared to 2020 which experienced a contraction of 8.76% (Kusnandar, 2022). The growth of export value was driven by exports of sports shoes to the United States and some export destination countries have shifted some of their orders from China to Indonesia (Rizaty, 2021). Currently, Indonesia is still the world's top four footwear exporter behind China, South Korea, and Vietnam (Susetyo, 2021).

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. On the other hand, the cost structure of the sports shoes industry shows that the raw material costs are 45.99 percent, labor costs are 14.89 percent, other costs are 5.01 percent, and the smallest cost is energy costs at 3.91 percent (Curiana, 2015). This cost structure distinguishes the structure of the footwear industry, whether it is labor-intensive or capital-intensive. If it is labor intensive, the

labor cost will be higher.

This rapid market change is driven by the power of technology, globalization, social responsibility, and consumer concerns about sustainability (Mandal, 2020). This new power provides capabilities and opportunities for consumers and companies so that they have an impact on changing markets. Distribution channels and competition are increasingly modified due to retail transformation and disintermediation.

Footwear Stakeholder Chain Marketplace (FSCM) is a marketplace that integrates six footwear stakeholder chains, namely: **suppliers, producers, retailers, consumers, funding institutions, and logistics** which make the marketplace highly competitive. The complexity of the alignment of the six elements lies in the various perspectives and approaches that each stakeholder has to produce sufficient efficiency and productivity.

Suppliers in FSCM play a role in providing materials in the form of raw materials, support materials, equipment, machinery, and spare parts. They will easily evaluate each other's prices between suppliers, how suppliers can support the production process and how suppliers deliver them. Thus suppliers become very competitive (Lowe, 2018). This system is important for producers to support planning, scheduling, efficient production control, selecting the right supplier, producing products, testing quality and for determining efficient distribution protocols in order to integrate, synchronize and optimize plant performance throughout the value chain. Market competitiveness encourages producers to choose the most appropriate supply chain network to reduce total costs and loss of time.

This FSCM for retailers can offer a variety of products at more competitive prices and provide a higher level of service in the supply chain (Candelapulus, 2014). Therefore, an effective supply chain provides a competitive advantage for all retailers. For consumers, supply chain visibility will increase trust and even increase sales from certain customers (Brown, 2019). Consumers can choose the goods that best suit their needs, the right price, and fast delivery so that they have utility value.

For funding institutions, this system is a reference to provide the best service for consumers with a variety of payment systems, whether cash or credit. If payments are made on credit, consumers will be able to choose the most competitive interest rates. For shipping and logistics services, coordinate customer orders, schedule deliveries, ship cargoes, collect customers, and receive payments (IBM, 2022). Delivery services can be a bridge between producers and consumers to provide the goods needed by consumers in the right quantities, on time, and error free.

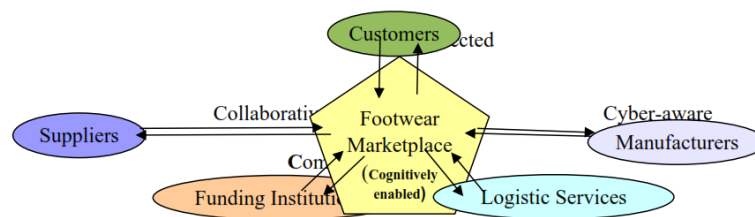
The relationship between stakeholders in FSCM can be seen horizontally and vertically. Horizontal relationships have a flow from suppliers, manufacturers, distributors, retailers and customers. Vertical relationships have a flow from buyers, transporters, warehouses, sellers, to end users. This study will examine the horizontal and vertical links in FSCM including: suppliers, manufacturers, producers, buyers, carriers, stores, sellers, distributors, retailers and customers.

### **Footwear Stakeholder Chain Marketplace (FSCM)**

Footwear stakeholder chain marketplace is the management of data, services and products that are integrated into the solution. FSCM is a supply chain management that affects product and service quality, delivery, costs, customer experience, and ultimately increases company profitability. FSCM leverages the large amount of data generated by the stakeholder chain process. Future key stakeholders and managed Enterprises Resource Planning (ERP) systems will focus on optimizing data usability and analyzing in

real time with minimal latency.

There are six key stakeholders in the Footwear Stakeholder Chain Marketplace system, namely suppliers, producers, retailers, consumers, funding institutions, and logistics as shown in Figure 1. This system works starting from planning and managing all the resources needed to meet customer demand for footwear products. foot. Select a supplier to provide the materials needed to create the footwear. Then, create a process for monitoring and managing supplier relationships. Key processes include: ordering, receiving, inventory management, and authorizing supplier payments. Organize the activities required to receive raw materials, manufacture products, test quality, package for delivery and schedule delivery. Coordinate customer orders, schedule deliveries, ship loads, invoice customers, and receive payments. Finally, create a network or process for retrieving defective, redundant, or unwanted products.



**Figure 1: Footwear Stakeholder Chain Marketplace**  
**Source: Kodrat and Iswati, 2021**

Footwear Stakeholder Chain Marketplace is the most obvious "face" of business to customers and consumers. The better and more effective the company's supply chain management is, the better the business reputation and long-term sustainability will be.

An effective Stakeholder Chain Marketplace Footwear in the future requires 5 "Cs", namely: Connected, Collaborative, Cyber aware, Cognitively enabled, and Comprehensive (Ellis and Santagate, 2018). **Connected**, capable of accessing unstructured data from social media, structured data from the Internet of Things (IoT) and more traditional datasets available through traditional ERP and B2B integration tools. **Collaborative**, increasing collaboration with suppliers increasingly means the use of cloud-based commerce networks to enable multi-enterprise collaboration and engagement. **Cyber-aware**, supply chains must strengthen systems and protect against intrusions and hackings, which should be a concern for all companies. **Cognitively enabled**, the AI platform becomes the control tower of the modern supply chain by structuring, coordinating and executing decisions and actions across the chain. Most supply chains are automated and self-learning. Finally, it is comprehensive, analytics capabilities must be scaled with data in real time. Insights will be comprehensive and fast. Latency is unacceptable in future supply chains.

### **FSCM Flow**

The goal of FSCM is to ensure high product availability through efficient and timely fulfillment of customer demands, so how is this goal achieved? This requires an effective product flow from the point of origin to the point of consumption (Anderson, 1997). Watch for a two-way flow of information and data between supply chain participants creating demand visibility with fast problem detection. Both are needed to make good decisions about what to buy, make, and move.

Other streams are also important. For suppliers, they have an interest in financial flows.

Suppliers want to be paid for their products and services as quickly as possible and with minimal hassle. Sometimes, it is also necessary to move the product back through the supply chain for return, repair, recycling, or disposal.

All processes must be carried out in various types of participating stakeholders, each stakeholder needs the company as a supply chain to help improve the flow of products, information and money. This is a circuit to streamline FSCM.

## **2. Research Method**

The market testing method used is in-person usability testing to improve performance and user experience (Yieldify, 2020). Usability testing is a technique used to evaluate how easy or difficult it is to use a product or service by testing it on real users. Usability testing is useful for understanding how users interact with products or services, measuring user experience, and improving designs based on findings.

The procedures for usability testing are: (1) collecting respondents, (2) finding a comfortable room, and (3) recording the entire process. In usability testing, respondents are asked to complete a series of tasks while being observed. In the marketplace, testing is focused on how easy it is for users to find the product they need, how they interact with additional products/offers, how they navigate to the checkout, and how they fill out a submission form.

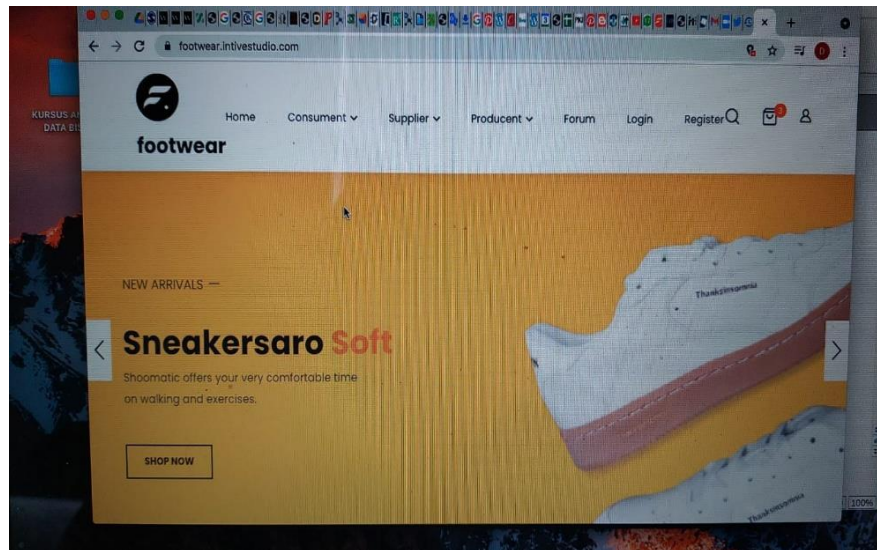
## **3. Result and Discussion**

### **3.1. Results**

#### **Home**

The Home display consists of the vision and mission of the footwear industry as shown in Figure 2 below. Its vision is: “maintaining existence and to rebuild the image of the footwear industry and to enhance competitiveness in the global market.” (Aprisindo, 2004). Aprisindo's mission is:

- a) Maintaining and developing the sportshoes industry,
- b) Enhancing and developing non sport shoes and SME footwear industry,
- c) Consolidating the footwear support industry,
- d) Improving the image of the footwear industry as an industry that stimulate the economy,
- e) Developing the human resources capability in entering the global market (Aprisindo, 2004).
- f) Developing local shoes into national shoe brands.



**Figure 2: Home Display**

A good home has a friendly design and makes it easier for consumers to search for products. To speed up the shopping process, customers can use the search engine in the FSCM to search for the products they want. The available filter options also help show the most relevant products. Despite having millions of products in the marketplace, FSCM is able to simplify the interface, for example all product categories are hidden in the hamburger sidebar menu. This way, customers don't have to struggle with the many options, making site navigation easier. By viewing at the home screen (Figure 2), there are 3 challenges that need to be discussed, namely: (1) what is the identity of the marketplace as a footwear manufacturer or as a footwear supplier?, (2) what logistics services are available for small packaging or container packaging?, and (3) what is the impact of this marketplace for members?

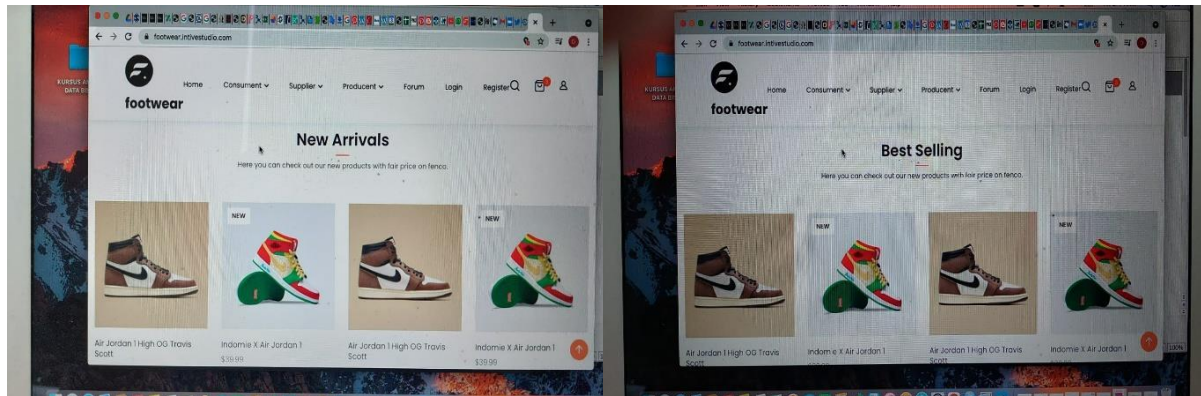
The home display shows that the identity of the FSCM marketplace is twofold, namely as a supplier to the footwear industry as well as a footwear producer. The supplier of the footwear industry acts as a seller of materials and machinery for the footwear industry, while the footwear manufacturer acts as a seller of finished footwear products. Along the way, there is a possibility that one of the identities is superior. For this reason, the marketplace manager is expected to create a program to maintain this uniqueness by balancing the identity between footwear industry suppliers and footwear manufacturers to strengthen the FSCM marketplace supply chain.

The logistics services provided in this marketplace should be logistics services for shoes but also logistics services for footwear industrial machines. Logistics services for footwear products only use small packages for business to customer sales, on the other hand, if sales transactions are carried out on a business to business basis, the transactions are in large quantities, requiring large packaging or containers. Likewise, packaging for the footwear industry machines, also requires logistics services that are capable of sending large packages.

What are the advantages for FSCM marketplace members both as suppliers and as producers. Managers need to think about the costs incurred and the benefits obtained for members. For example, shoesmart.co.id is a special marketplace for footwear products but the consumer response is not enthusiastic enough, but footwear manufacturers still have to maintain their shop in the marketplace.



The home display consists of best selling and new arrivals as shown in Figure 3 below.



**Figure 3: Home Components**

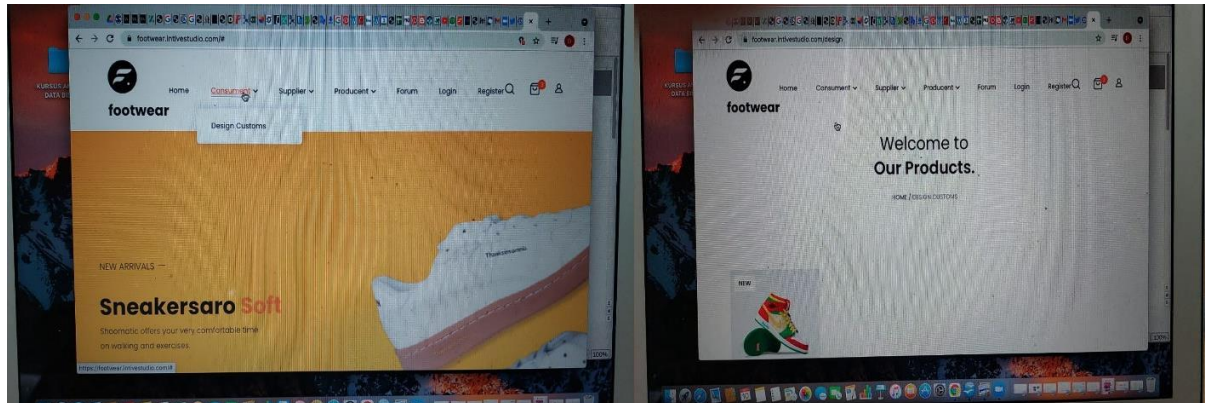
New arrival display and best selling FSCM display of footwear products based on footwear category, type of footwear, footwear color, and footwear size. To make it easier for consumers to find the product they want, FSCM provides a filter feature to view products by category and product type and prices are sorted by lowest price, highest price, newest product, biggest discount and most popular product.

### Home Function Testing

The home function test uses the Blackbox method approach. Test items are carried out for the main functions in the marketplace. The following is a table for testing the marketplace functions that have been developed.

No	Test Items	Testing Results
1	Home main display	Successful
2	New arrivals display	Successful
3	Best selling display	Successful

The consumer display shows a software application system (Figure 4) that connects consumers with online stakeholders which consists of: (1) consumer profiles including profile editing, address editing, and password editing; (2) product purchases include product search, product checks, payments, and purchase reports; (3) transaction history includes product evaluation; (4) consumer involvement in making designs includes design drafts and design history; and (5) an independent artist shop covering the accumulation of independent designs, and selling consumer designs.



**Figure 4: Consumer Display**

A customer database is one of the greatest assets of a business. This database contains a collection of information such as name, home address, telephone number, email address and date of birth (Nanda, 2020). The benefits of a customer database for business are: knowing market potential, product sales directions, making sales analysis, means of communication, knowing blacklisted customers, and making appropriate business strategies such as customer loyalty programs. For example, by knowing the customer's birthday, the company can wish him a happy birthday on his birthday and provide special discounts on product purchases. In this way, companies build closeness with customers as a form of personal touch so that customers will feel appreciated and become an important part of the company.

In the product purchase menu, customers can use the product search so that it is easy to find the desired product. Every time a customer adds a product to the shopping cart, a notification will appear with a short message such as "Good choice!" or "Yum! We love that one". Customers will get a more personal impression when shopping or get a pleasant shopping experience.

In addition, the product purchase menu provides a filter based on footwear category with options: (1) women's shoes, (2) men's shoes, (3) sandals, (4) footwear color, and (5) footwear size. In the women's shoe category there are still filters in the form of women's shoes, namely: sneakers, flatshoes, boots, pumps, stilettos, kitten heels, ankle boots, wedges, T-strap, Cone heels, ballerina flats, oxfords, sling back heels, loafers, slips on, and canvas shoes (brilistyle,2020). In the men's shoe category, filters are available in the form of men's shoes, namely oxford shoes, derby shoes, blucher, cheisea boots, loafers, mokassin, boat shoes, sneakers, chukks shoes, desert boots, monk shoes (orami, 2022), sneakers, monk strap, chunky sneakers, espadrilles, and brogues (Ifnur, 2020). Types of sandals are sandals for men and sandals for women.

The transaction history feature includes providing product ratings, average transactions per month, and types of products purchased, payment methods, purchase value, and purchase frequency (Nanda, 2020).

Consumer involvement in making designs includes design drafts and design history. Design drafts are a design challenge for people who have footwear design ideas. The idea can be submitted on the FSCM marketplace for evaluation from others. How to? First, get inspired and come up with the most creative footwear design ideas. Second, submit the design on the template, give it a catchy title and upload it. Third, pay attention to the comments and scores given by the community. Fourth, if a design is selected for production, earn cash, prizes and fame from the artwork that has been produced.

Independent artist shop includes the accumulation of independent designs, and selling consumer designs. Artist shops provide the best and easiest platform to sell artwork in customized online store for free. How: create 100s of footwear designs, make the artist shops unique with storefronts and store names, set your own prices, display footwear designs in FSCM, FSCM helps with inventory, production, shipping, and customer service, and all for free. register and use it (no minimum).

Consumers prefer to shop online due to more promos offered through online shopping (Kominfo, 2017). On the other hand, the factors that prevent consumers from shopping online are transactions and consumer protection, goods cannot be seen clearly, most of the goods sold are without warranty, do not know how to shop online, and sometimes the transaction process or delivery takes a long time (Kominfo, 2017).

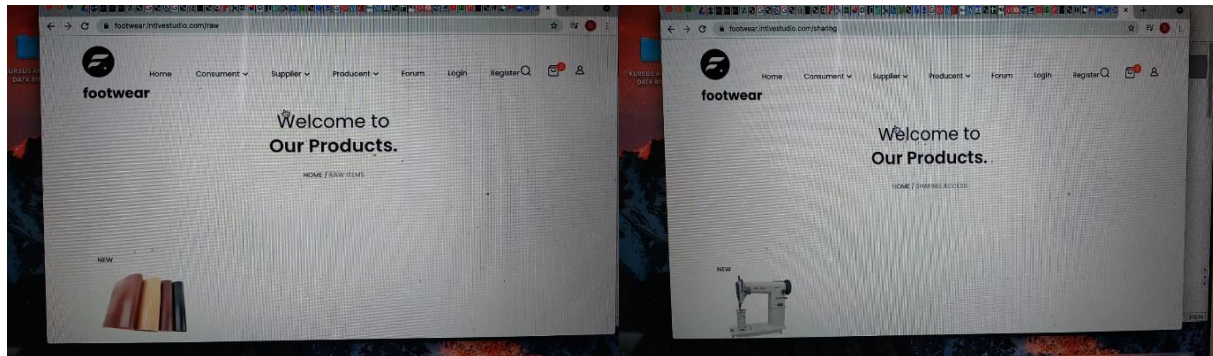
### **Consumer Function Testing**

The consumer function test uses the Blackbox method approach. Test items are carried out for the main functions in the marketplace. The following is a table for testing the marketplace functions that have been developed.

No	Test Items	Testing Results
1	Home main display (edit profile, edit address, and edit password)	Successful
2	Product purchase display (search for products, check products, payments, and purchase reports)	Successful
3	Transaction history feature (product rating, average transaction per month, type of product purchased, payment method, purchase value, and purchase frequency)	Successful
4	Involvement of consumers in making designs (design draft and design history).	Successful
5	Independent artist shop (accumulating independent designs, and selling consumer designs)	Successful

The supplier display (Figure 5) is a software application system that connects suppliers with stakeholders online which consists of: (1) supplier profiles including profile editing, address editing and password editing; (2) product sales include adding product types, editing products, and omitting products; (3) access sharing includes input type of access, edit access and delete access; (4) product purchases include product selection, product checks, payments and purchase reports; (5) manage payments including product payments; (6) manage shipments, including updating of delivery data and adding logistics services; (7) transaction history including product purchase and sales history; and (8) transaction analysis including product purchase analysis, product sales analysis and access sharing analysis.







**Figure 5: Supplier Display**

The Supplier Database (Raw materials and Machinery and their support) is one of the biggest assets of a business related to information to obtain the raw materials needed. This database contains a collection of information such as company name, contact person, company address, telephone number, email address, and types of products sold. The benefits of a supplier database in business are: getting supplies on time, getting the cheapest prices, completing product types, getting the best suppliers (Indriyatno, 2017), and supplier guarantees (Larasati, 2020). One of them is Supplier Relationship Management (SRM). SRM is tasked with creating closer and more collaborative relationships with suppliers to reduce risk (Larasati, 2020).

In general, footwear craftsmen look for materials directly by going from shop to shop to get the cheapest prices because payment must be in cash. For example, footwear material stores in the city of Mojokerto are Angkasa Warna Shop, Rizki Jaya Shop, Barokah Shop, Miki Sae (sol) Shop, Badrus Zaman Shop, Noeri Shop but the prices are expensive so the craftsmen take them from Surabaya without shipping costs like from Megajaya Shop, Sentosa Shop, and Karya Shop at Kramat Hanging - Surabaya. For example, dipping material (layer tempong) in Mojokerto Town costs Rp. 70,000 per meter, but at Megajaya Shop it costs Rp. 49,000 per meter and at Sentosa Shop Rp. 66,000 per meter with the same product quality. This condition causes the price of footwear to become less competitive because the price of materials is uncertain depending on the channel of each craftsman.

Part of the supplier display menu is raw items and sharing items as shown in Figure 5. The raw item display provides raw materials for footwear starting from the cutting, printing/embroidering, sewing, injection/assembling, and finishing processes. Cutting consists of: leather, textile, latex, yellow glue, cci layer, dipping layer, hammer, set machine, scissors, pattern mall, cutting machine, cutting dies. leather shoe pattern making machine, pattern hemp sole shoes machine tools. Printing/embroidery consists of: 3D printing. Sewing: thread, nylon thread, sewing machine, goodyear machine, moccasin sewing machine, martin shoe machine, side seam sewing machine, sole sewing machine, curved needle sewing machine, special double needle sewing machine, other special sewing machines. Assembling/Injection: shoelast, finished upper, insole/taxson, white glue, yellow glue, small nails, krasan, outsole, press machine, compressor, oven, chiller, conveyor, TPR (thermoplastic Rubber), NBR (Nitrite Butadiene Rubber ), PU (Polyurethane), EVA/Sponge, rights. Finishing: cleaning fluid, brush, rubber crap, latex, insole coating (screen printing, press, hotprint), spray, cardboard, heels, strap. The minimum raw material data required are technical parameters, characteristics, and material drawings as shown in Table 1 below.

**Table 1: Example of Goodyear's Shoe Making Machine Raw Material Data**

Technical parameter	
Sewing speed	Stepless speed regulating
Sewing thread	Coompound thread or linen thread
Stitch length	3.5-12mm
Sewing thickness	3-18mm
Sewing needle	200#230#260#curved hook needle
Motor	750W/220V one-phase 50-60hz 750W/380V three-phase 50-60hz
Net wight	344kg
Domestick packing gross weight	370kg
Domestick packing parameter	80*86*156(L*W*H) cm
Exported packing gross weight	
Exported packing parameter	
Characteristic:	
1. Suitable for heavy soles and heavy work boot edges suture and right-angle perimeter shoes to penetrate seam processing	
2. All parts were manufactured by HAAS CNC machines, which are of high precision	
3. Electronic speed motors can be used flesibelly, stopping the needle position via computer control	
4. Machines are automatically oiled and durable	
5. This machine is the indispensable equipment for producing the Goodyear shoes	
<b>Material Figure</b>  	
<b>Price:</b>	
<b>Discount:</b>	

Source:<http://id.grstitchmachine.com/goodyear-machines/goodyear-shoe-making-machine.html>

How this marketplace is not only a tool to compare prices but purchases are made offline. This phenomenon is known as webrooming. To that end, there are 3 sales stages in the marketplace, namely (1) TOFU (Top of the Funnel) for awareness, (2) MOFU (Middle of the Funnel) for Consideration/Evaluation, and (3) BOFU (Bottom of the Funnel) for purchase (Darmawan, 2015).

This TOFU stage must be enjoyed by those who currently do not want to buy directly. For example, sales of weight loss supplements, the content does not explain the advantages and disadvantages of supplement products and does not discuss promotions. However, the content presented is an exercise or diet guide for weight loss. As a result, there is a lot of traffic but no sales yet.

In this MOFU stage, prospective buyers are in the process of evaluating or comparing one solution to another to the problem at hand. MOFU content should be more in-depth. The goal is to introduce there are easier solutions to solve consumer problems. For example, to lose weight, they do not need to exercise half to death or a super strict diet. With the help of this supplement product, the process becomes easier. At this stage it is difficult to get traffic but the readers are loyal because an added value is introduced. Compared to traditional solutions or other solutions, this supplement product offers an attractive added value. Some of the content that can be used: case studies from those who have used supplement products, statistics/data/facts, comparisons (strengths and weaknesses), frequently asked questions, product demo videos, reviews/testimonials, and a buyer guide (a guide to choosing the right product). appropriate). MOFU content is educational but also persuasive.

This BOFU stage occurs when the consumer is ready to make a purchase. Consumers have been educated about the existing problems and the right solutions. However, there is still one more obstacle that prevents them from making a purchase, namely fear and uncertainty. For this reason, BOFU's content is 100% persuasive. For example: free consultation, trial/demo/sample, how to make a purchase, discount/bonus, and guarantee/guarantee. The goal is that consumers get a feeling of confidence.

**Sharing access (Sharing items)** includes input type of access, edit access and delete access. Sharing access considers information sharing (IS) in the supply chain (SC) with vendors in e-suppliers. In SC, the vendor estimates consumer demand and chooses whether to share it with other suppliers or not. Based on the vendor's decision, the e-supplier will supply to consumers through the FSCM platform. This model will reveal the effect of nonlinear production costs, intensity of competition, and contracts to charge payments offered through other vendors in the FSCM (Shang, Ha, and Tong, 2016). Competitive vendors will generate new SC structures and their conclusions are interesting because e-suppliers can collect and process online demand knowledge (Dan Li, Kang Li, Xue Pan, 2022).

**Product purchases** include product selection (Raw material, engine or search feature), product check (parameters, characteristics, images, prices, discounts), orders received, transaction payments, and purchase reports (Date, Ref. No., Order No., Name Suppliers, Types of Goods, Quantity of Goods, and Transaction Value) (Zahir, 2022).

**Manage payments** is a view for product payments. Payment gateway is an online payment whose function is to describe and validate information on a transaction in accordance with the policies set by the providers (Kurniawan, et. al., 2018). The payment page appears when the buyer has filled in the existing shipping details. Then the system will display a pop up payment option.

**Manage shipments** include updating delivery data and adding logistics services. The

items provided are orders/purchases, waiting for payment, bricks, ready to process, in process, ready to ship, already shipped, and finished. Delivery can be done manually on each order. Orders can use the batch picking or cluster picking methods.

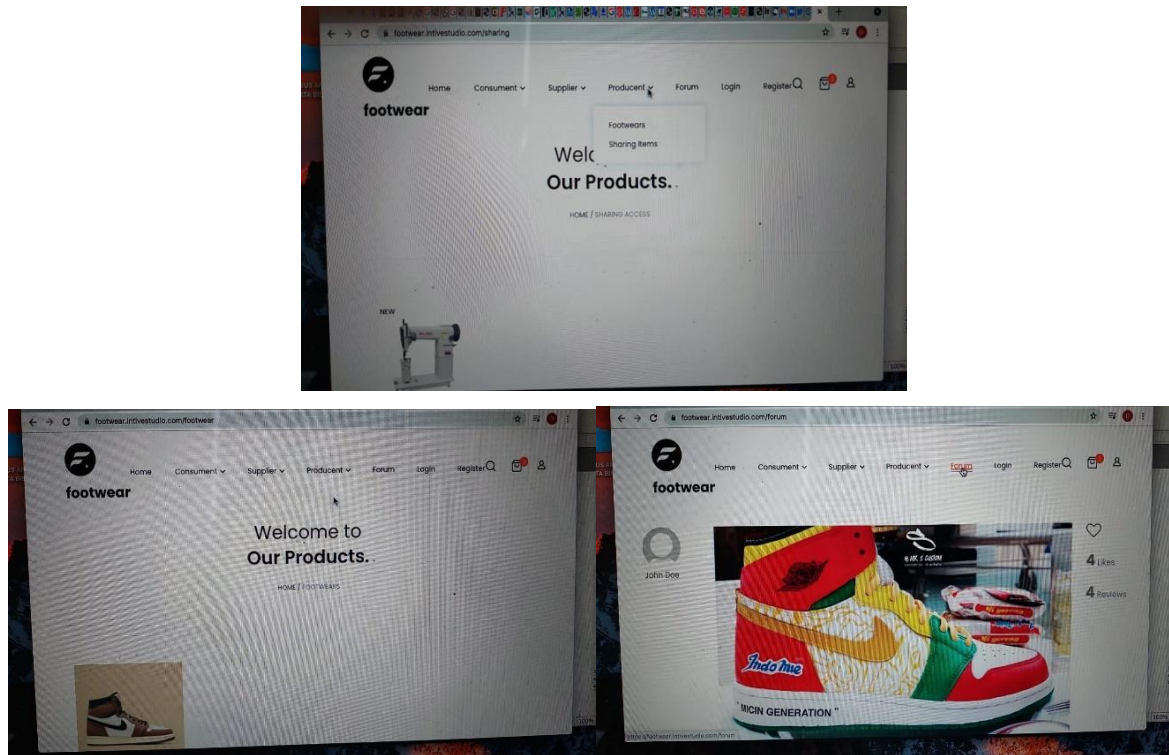
**Transaction history** includes the history of product purchases and sales. Buyers or sellers can use this invoice as a detailed transaction history from the last month. The data includes: transaction number, type of transaction (material / footwear), status (payment / refund), buyer, buyer's address, type of item, total number of transactions, transactions per item, number of shipments. Transaction analysis includes product purchase analysis, product sales analysis, and access sharing analysis.

### **Supplier Function Test**

Testing the supplier function using the Blackbox method approach. Test items are carried out for the main functions in the marketplace. The following is a table for testing the marketplace functions that have been developed.

<b>No</b>	<b>Test Items</b>	<b>Testing Results</b>
1	Supplier profile (edit profile, edit address and edit password)	Successful
2	Supplier display (raw material: Cutting, Printing/embroidery, Sewing, Assembling/Injection, and Finishing)	Successful
3	Share access (input access type, edit access and delete access)	Successful
4	Product purchases (select product (Raw material, engine or search feature), product check (parameters, characteristics, images, prices, discounts), orders received, transaction payments, and purchase reports (Date, Ref. No., Order No., Name Supplier, Type of Goods, Quantity of Goods, and Transaction Value)	Successful
5	Manage payments (Payment gateway)	Successful
6	Manage shipments (update delivery data and add logistics services)	Successful
7	Transaction history (history of product purchases and sales)	Successful
8	Transaction analysis (product purchase analysis, product sales analysis, and access sharing analysis)	Successful





**Figure 6: Producer Menu Display Section**

Producer's display (Figure 6) is a software application for footwear manufacturers including: (1) footwear manufacturer profile including profile edit, address edit and password edit; (2) product sales include additional types of products; edit products and delete products; (3) access sharing includes input type of access, edit access and delete access; (4) product purchases include product selection, product checkings, payments and purchase reports; (5) manage payments including product payments; (6) manage shipments, including updating of delivery data and adding logistics services; (7) transaction history including product purchase and sales history; and (8) transaction analysis including product purchase analysis, product sales analysis and access sharing analysis.

**A footwear producer's database** is one of a business's greatest assets when it comes to information on obtaining the footwear it needs. This database contains a collection of information such as company name, contact person, company address, telephone number, email address, and types of products sold. Footwear Manufactured Relationship Management (FMRM) is tasked with creating closer and more collaborative relationships between footwear manufacturers to reduce risk.

**Footwear sales** include product types (men's shoes, women's shoes, sandals), edit products, delete footwear products, detailed specifications, pictures, minimum order (MOQ), prices, discounts, colors, sizes, delivery, payment, and product samples ( sample confirmation).

**Sharing access (sharing items)** includes input type of access, edit access and delete access. Sharing access considers information sharing (IS) in the supply chain (SC). At SC, footwear manufacturers estimate consumer demand and choose whether or not to share it with other footwear manufacturers via the FSCM platform. This model will reveal the effect of nonlinear production costs, intensity of competition, and contracts to charge payments offered in FSCM. At competitive manufacturers will generate new SC structures and can collect and process

knowledge of online demand.

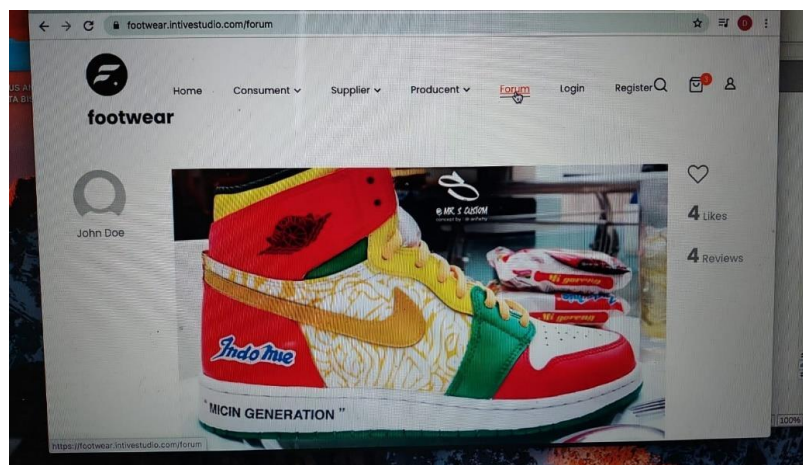
**Product purchases** include product selection (category, footwear type or search feature), product check (parameters, characteristics, images, prices, discounts), orders received, transaction payments, and purchase reports (Date, Ref. No., Order No., Name of Supplier, Type of Goods, Quantity of Goods, and Transaction Value)

Manage payments, manage shipments, transaction history and analyze transactions as well as explain to suppliers.

### **Producer's Function Testing**

Testing the producer function using the Blackbox method approach. Test items are carried out for the main functions in the marketplace. The following is a table for testing the marketplace functions that have been developed.

No	Test Items	Testing Results
1	Manufacturer profile (edit profile, edit address and edit password)	Successful
2	Product sales (add product type; edit product and delete product)	Successful
3	Share access (input access type, edit access and delete access)	Successful
4	product purchase (select product, check product, payment and purchase report)	Successful
5	Manage payments (Payment gateway)	Successful
6	Manage shipments (update delivery data and add logistics services)	Successful
7	Transaction history (history of product purchases and sales)	Successful
8	Transaction analysis (product purchase analysis, product sales analysis, and access sharing analysis)	Successful



**Figure 7: Forum Display**

Forums are a way to interact and respond to designs from other people. The benefits of this forum are: (1) a means of learning, listening, and conveying, (2) a means of documentation, administration, and integration, (3) a means of planning, strategy, and management, and (4) a means of control, evaluation, and measurement.

### 3.2. Discussion

#### Forum Function Testing

The forum function test uses the Blackbox method approach. Test items are carried out for the main functions in the marketplace. The following is a table for testing the marketplace functions that have been developed

No	Test Items	Testing Results
1	Interaction forum	Successful

### 4. Conclusion

Footwear Stakeholder Chain Marketplace (FSCM) is a marketplace that integrates suppliers, producers, consumers, logistics services and funding institutions. Industry groups with core industries that interact intensively and form partnerships, both with supporting industries and with related industries, so that they can be said to be clusters in the marketplace.

FSCM as a footwear industry cluster helps small industries to increase competitiveness. With the agglomeration of similar companies that have similarity and related activities so that it will limit the resulting economic externalities and will reduce or reduce the company's production costs. Another advantage with the formation of a cluster in the marketplace will be an opportunity to absorb a larger workforce, ease of capital, access to suppliers and special service inputs as well as the transfer of information and knowledge.

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