

COLLABORATIVE COMMERCE MODEL IN MSMEs AND CREATIVE INDUSTRIES IN PAREPARE: CO-DESIGNING SUSTAINABLE PRODUCT INNOVATION

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ABSTRACT

In response to the impact of the environmental issue of plastic waste, which is changing customer shopping patterns and product consumption patterns, MSMEs and Parepare Creative Industries are collaborating using Collaborative Commerce (C-Commerce). MSMEs have carried out various collaboration efforts but have yet to evaluate products and customer feedback. Therefore, this research was conducted to build a collaborative commerce conceptual model for MSMEs and Creative Industries as a collaboration standard. Data collection was carried out through observation, interviews, and literature study. The sample selection used purposive purposes, specifically local food products and typical Parepare handicrafts. Soft System Methodology (SSM) is based on a conceptual model in C-Commerce. SSM is a suitable method for building a new ecosystem. The conceptual model is compared with the rich picture for a complete and holistic understanding. The result of this conceptual model is to create a C-Commerce system for MSMEs and the Parepare Creative Industry to design sustainable products and a platform-based ecosystem. This concept is appropriate for Parepare MSMEs and Creative Industries to maintain cooperative relationships and increase product flexibility.

Keywords: *Collaborative Commerce, MSMEs, SSM, Information Technology, Sustainable Product*

1. INTRODUCTION

The emergence of environmental issues related to the excessive use of single-use plastic and plastic waste, which pollutes the environment [1], influences customers' shopping patterns and product choices [2]. Parepare's MSMEs and Creative Industries face this influence and are considered the most vulnerable businesses because declining sales will disrupt the company's typical flow. To respond to this, MSMEs and the Parepare Creative Industry are starting to change shopping patterns and product patterns offered to customers. Using technology and product innovation is a solution to improve business work by creating a digital innovation strategy [3]. The innovation strategy that can be implemented is by collaborating with the ecosystem. Collaboration

can help businesspeople create innovative products [4]. Innovation products that are currently really needed by customers have a positive impact on the surrounding environment and easy shopping patterns [5]. Business actors must have essential Critical competencies to solve problems, such as creativity, analysis, and entrepreneurship [6].

Applying the Collaborative Commerce (C-Commerce) paradigm is appropriate for maintaining excellence in designing innovative products [7]. The C-Commerce segment in research is most widely used for large companies. However, MSMEs and Creative Industries are business segments that have excellent opportunities to implement C-Commerce. MSMEs and Creative Industries are small businesses so that they can increase stakeholders in their business [8].

That influences relationships between organizations with several theoretical approaches but still needs more focus on the implementation stage. Therefore, implementation stages will be carried out. However, this research is in the initial implementation stage, namely developing a C-Commerce conceptual model for MSMEs and Creative Industries in Parepare City. Parepare City is a city in South Sulawesi Province, known as the birth city of the 3rd President of Indonesia, Bacharuddin Jusuf Habibie [9]. Apart from being known as the city of Love, Parepare is also known for several Micro, Small, and Medium Enterprises and Creative Industries. Parepare MSMEs and Creative Industries offer local food and beverage products, fashion, and other local skills in the Parepare area [10].

A C-Commerce Model is essential to create before building a Collaboration Platform. Creating a C-Commerce Model takes work, and researchers must assess the norms that guide the design and maintenance of C-Commerce systems. This research will build a conceptual model of C-Commerce for MSMEs and the Parepare Creative Industry, which will be used as a standard for Collaboration activities. This collaborative activity will allow MSMEs and Creative Industries to innovate to create sustainable and environmentally friendly products [11]. The C-Commerce conceptual model will give an overview of an E-Commerce Platform that implements collaboration between stakeholders to support sustainable and environmentally friendly products [12]. This collaboration platform facilitates the involvement of the supply chain stakeholders, from suppliers to consumers. This is because all stakeholders want to be directly involved in creating sustainable products. Suppliers and manufacturers collaborate to develop product innovations, and customers continue by recycling product waste [7].

2. C-COMMERCE AND SUSTAINABLE PRODUCT DESIGN

The C-Commerce system is a model where business ecosystems interact via the Internet. C-Commerce requires technological and electronic support to collaborate in business [13]. In C-Commerce, stakeholders can select materials, design, produce, develop, monitor, and innovate sustainable products. Activities and communication in C-Commerce are carried out online by stakeholders to create sustainable products. C-commerce is a combination of e-commerce and collaboration in carrying out transactions and other

activities in MSMEs and the Parepare Creative Industry.

C-Commerce will form a concept for creating product innovation called Sustainable Products [14]. This concept will involve stakeholders interacting and developing products via the internet and technology. In this concept, stakeholders sell products and select raw materials, design, production, innovation, and recycling [15].

3. TABLES AND FIGURES

3.1. Data Collection

The research subjects are MSMEs and creative industries in Parepare City, which offer food products and local handicrafts in the Parepare area. The research subject was chosen because it is suitable for creating sustainable products and still needs an e-commerce platform. Sustainable products emphasize environmentally friendly concepts and create product innovation using a platform-based ecosystem. This process will provide benefits to partners, business owners, and customers. Business partners can contribute generously to the environment, and business owners can gain competitive advantages that differentiate them from competitors, such as marketing attractiveness and brand image. Service to customers improves by providing knowledge about products, product quality, and positive environmental changes. Sample selection used purposive sampling. The selected MSMEs are MSMEs that sell local products from the Parepare area. MSMEs have developed their business for over two years, and the raw materials used are local and traditional products.

A qualitative approach was used in this research. Data collection was explored using interview and observation techniques. The interview technique aims to identify the current business processes of MSMEs and the Creative Industries of Parepare City. Interviews were conducted over three days with 3 MSMEs and 1 Government sector. The literature review was carried out by searching for literature that showed that Parepare MSMEs still needed to implement the C-Commerce model. The interview was conducted informally, and a relaxed discussion with several questions was provided. This research used a triangulation model where researchers compared interview data, observation data, and literature review results.

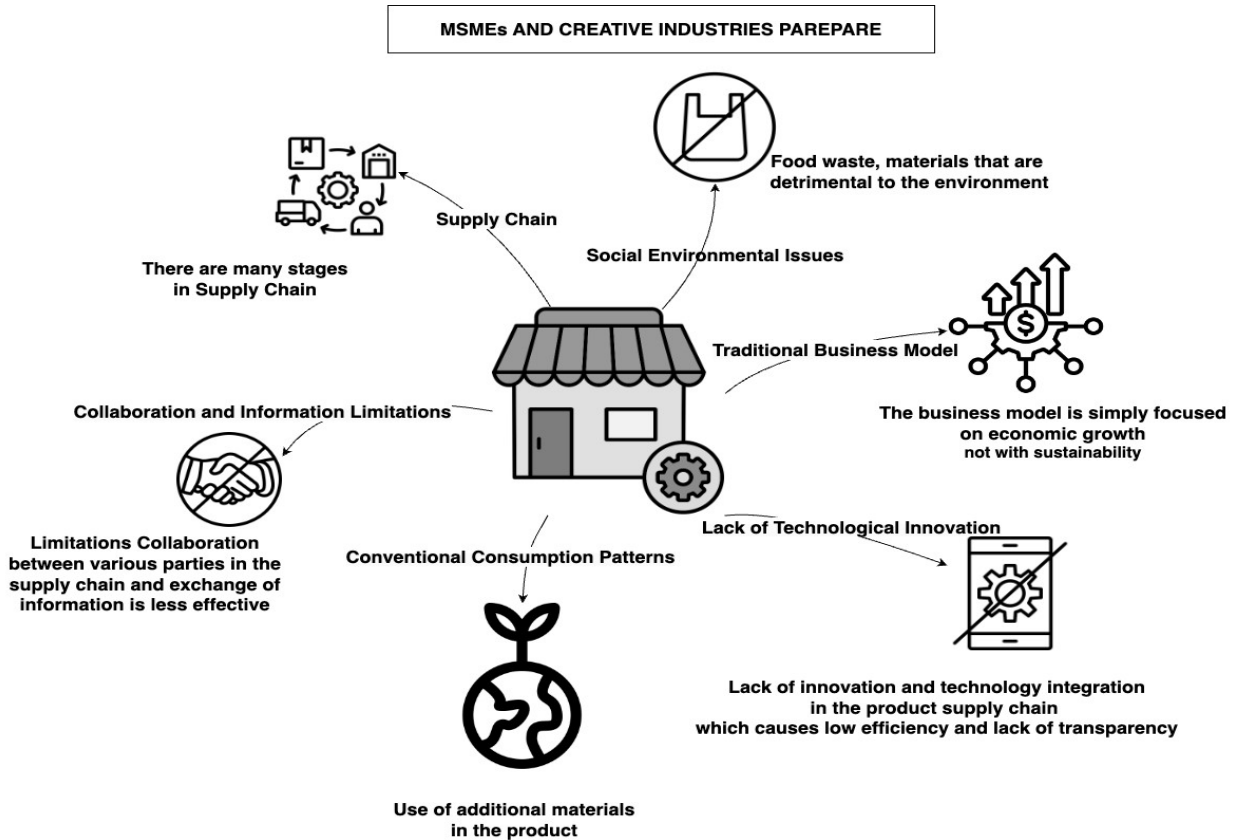


Figure 1: Rich Picture MSMEs and Industry Creative Parepare

Table 1: Definition of CATWOE

Element	Element	Description
Customer	Communities who receive benefits from the transformation process	Customers, distributors
Actor	The person who carries out the transformation process	Owners, suppliers, cooperation partners
Transformation	Change from input to output	Ideas from environmental change are transformed into innovative products
Worldview	A view that makes transformation meaningful	This c-commerce model is to add value in supplying, designing, producing, and distributing products and maintaining trust between parties.
Owner	The person responsible for the transformation.	Owners, customers, suppliers, distributors, cooperation partners
Environment	Environment outside the given system	Supply chain, customer relations, logistics processes, and other internal processes.

Table 2: 5Es Performance

Performance Measurement Activity	Yes/None	Definition How	Who	Description Performance Measures
Efficacy	Whether the transformation represented by the activity produces output.			Will the Collaborative Commerce model increase collaboration between MSMEs and Creative Industries to increase flexibility
Efficiency	What are the minimum resources used to obtain the results of the transformation process?			Will the collaborative commerce model maximize the use of technology as a platform for increased flexibility?
Effectiveness	Does the transformation meet the worldview?	Long-term proposed		Will the collaborative commerce model be used to increase flexibility to be able to design, produce, send, and provide feedback on the products offered?
Ethics	Has the transformation been carried out morally?			Will the collaborative commerce model maximize IT to increase flexibility and maintain trust between related parties?
Elegance	Did this transformation work well?			Will the c-commerce model be applied to the c-commerce system flexibly

Integrated Database

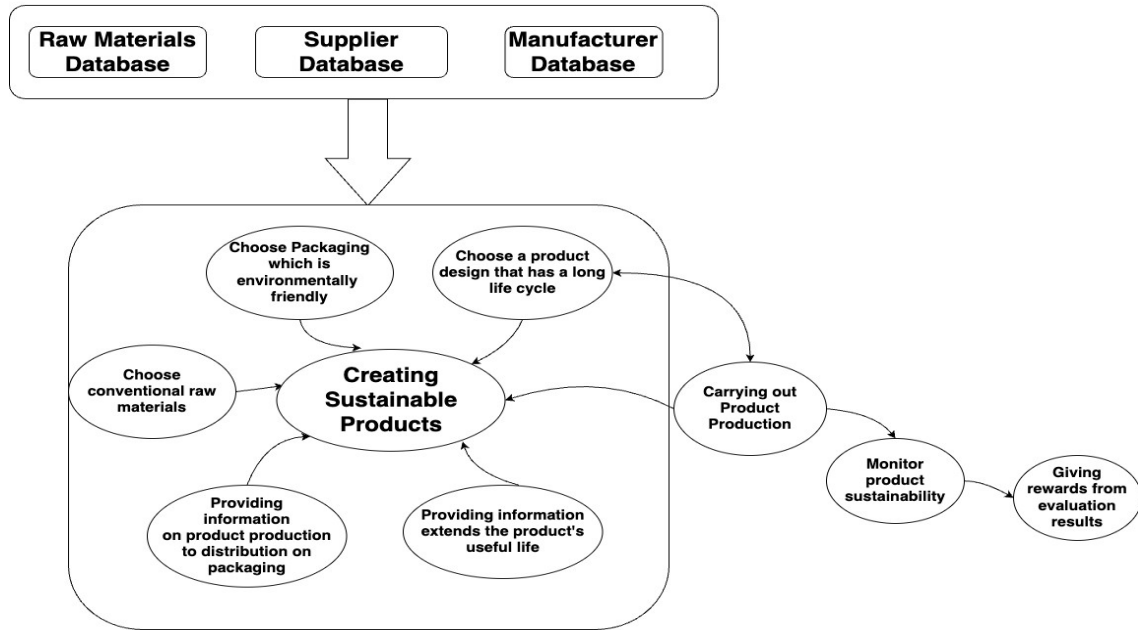


Figure 2: C-Commerce Conceptual Model for Sustainable Product

Table 3: Evaluation Matrix of C-Commerce

Continuous Product Production Process through the system	None	Collaboration utilizes systems to increase MSME flexibility and communication between involved stakeholders	Owners, customers, suppliers, cooperation partners	Availability of production information, Quality of products produced, Quality of raw materials, Complete product information on packaging.
Choose conventional raw materials	None	The Raw Material Database and Supplier Database are integrated to ensure the availability of quality and environmentally friendly raw materials	Supplier, business owner	Updated availability of raw materials in real time
Choose environmentally friendly packaging	None	Supplier and supplier databases are integrated with each other to provide product packaging that is easily recyclable and environmentally friendly	Supplier, business owner,	Updates on the availability of environmentally friendly packaging in real time
Choose a product design that has a long life cycle	None	Designing products that remain viable and relevant to the market over the long term	Business owner	Product lifespan, Product sustainability analysis, Product flexibility
Provide product production information on the packaging	None	Information on carbon footprints and impacts on the environment	Business owner	The accuracy of the information displayed
Providing information extends the product's useful life		Information about product recycling and steps taken to manage product waste	Business owners, Customer	Ease of managing recycling and product waste
Rewards for implementing product sustainability	Yes	Serve complaints, questions and provide rewards in the form of coins to customers who successfully implement product sustainability.	Business owners, Customer	Product recycling results, Accuracy of product recycling

Table 4: Conceptual Model Testing Result

Activities	used	can be	input
Continuous Product Production Process through the system	Yes	Yes	Ordering, easy payment, fast delivery, product accuracy
Choose conventional raw materials	Yes	Yes	Integrated database between suppliers and manufacturers to check the availability of suitable raw materials
Choose environmentally friendly packaging	Yes	Yes	Integrated database with suppliers regarding packaging availability, packaging characteristics that are easy to recycle
Choose a product design that has a long life cycle	Yes	Yes	Product type, product operational costs, sustainable product characteristics
Provide product production information on the packaging	Yes	Yes	Detailed information regarding the carbon footprint of product production from suppliers to consumers
Providing information extends the product's useful life	Yes	Yes	Complete information regarding the steps that must be taken to maintain products and manage product waste
Rewards for implementing product sustainability	Yes	Yes	Feedback, suggestions and rewards to customers

3.2. Soft System Methodology (SSM)

One of the research methods in Parepare C-commerce MSMEs and creative industries includes technical stages such as creating conceptual models. A conceptual model represents a system that helps developers understand or simulate a topic. A conceptual model is a real-world replication or abstraction of an activity system whose meaning is considered relevant and problematic to the real world. The conceptual model was developed using a soft system methodology (SSM) approach [16]. SSM is a methodology for analyzing and modeling systems integrating technology and humans. The SSM method can identify many variables that interact with each other in the system. SSM is a methodology that can understand complex, irregular, and not well-structured problems. Handling problems related to environmental issues, namely plastic waste, is very complicated and uncertain. This makes research suitable for using SSM.

In this research, we use SSM to analyze problems related to MSMEs and Parepare's creative industry, which still need to be well structured and defined [17],[18]. SSM levels are:

1. Identify the issue.
2. Build a comprehensive picture.
3. Define CATWOE
4. Design a conceptual model.
5. Compare the natural world with conceptual models.
6. Define possible changes.
7. Take corrective action.

4. RESULT

4.1 Identify The Problem

Observations and interviews were conducted to identify the problem and understand the business processes of MSMEs and creative industries in Parepare City. The discussions also include information that tracks stakeholders, relevant party actions, and information flows.

4.2 Build A Rich Picture

Rich Picture represents the exchange of information between MSMEs and Creative Industries with stakeholders using Figure 1. Rich Picture is a basic guideline for interaction between people, objects, processes, structures, elements, and supply chain descriptions before implementing sustainable products and platform-based ecosystems.

4.3 Root Definition

The root definition is a system in X. In a way, Y does Z. The purpose of X is what the system does, Y is how the system is, and Z is why it is done.

In this research, X, namely MSMEs and Parepare Creative Industries, collaborates with stakeholders and business partners to innovate sustainable and recycled products. Through Y, a platform-based ecosystem integrated between the stakeholders involved, this is carried out in 1 C-Commerce platform for Z, namely increasing competitive advantage, providing sustainable and responsible environmentally friendly products, and gaining consumer trust.

4.4 Define CATWOE

Researchers developed a conceptual model based on the root definition and refined it with CATWOE and 5E (prosperity, efficiency, effectiveness, ethics, and elegance) analysis for transformation. CATWOE analysis shows who benefits, who loses, and who changes from input to output, as well as viewpoints, changes, activities, and environmental constraints in the MSME c-commerce ecosystem and the Parepare Creative Industry in Table 1. Table 2 contains the 5Es index, a criterion for defining and monitoring system performance represented by activities in the c-commerce ecosystem. This 5E approach will show that the resulting conceptual model will suit the needs of c-commerce in MSMEs and the Creative Industries of Parepare City.

4.5 Model Conceptual

Researchers have incorporated ideas in constructing conceptual models to provide an overview of a particular structure and underlying theory. This conceptual model will represent certain situations and conditions that contain several human activity systems [19].

4.6 Comparing Conceptual Model with Real Life

C-commerce conceptual models are artificial tools based on worldviews. However, the real world is characterized by constant changes in different perspectives, which can occur slowly or rapidly. Researchers compare conceptual models to real-world situations based on various images. Table 3 contains the business processes of the C-Commerce conceptual model and is equipped with a measurement scale. The model evaluation table ensures that all proposed business processes are appropriate.

4.7 Changes According to Actor Interests

In this phase, the various logical considerations in Table 4 can be used to refine the C-commerce conceptual model into the desired system. We will make improvements based on comparisons and discussions. If the owner deems aspects of the C-commerce model inappropriate, changes or activities are completed. This change represents a rethink to create a C-Commerce model that works in a specific target environment, i.e., between MSMEs and the stakeholders involved in the business process.

4.8 Implementation Model and Recommendations

Soft System Methodology (SSM) is a continuous learning process. SSM can be repeated as a constant learning effort to face new obstacles. The impact of this is that the latest iteration will revise the previous model. The SSM approach focuses on process modeling, identifying unstructured problems, and identifying solutions to unclear issues with a holistic view. C-commerce systems need SSM because it can capture the necessary changes. Changes to SSM will continue to be required to become a system that can meet user needs in the future [20].

SSM is the initial activity in determining the requirements for building the main components of a C-commerce system, including system boundaries. The model SSM produced needs to be revised to be the basis for implementing an information system. A plan is technically and economically feasible. However, it is only sometimes acceptable for acceptance in soft systems for several reasons. The complex system modeling approach is the Unified Modeling Language (UML) to determine the technical form and proper function of various system components and the interfaces required in a system [21].

C-commerce can be carried out using a business model in designing a C-commerce system for MSMEs and the Parepare Creative Industry. The coordination, collaboration, and sustainability model approach describes the c-commerce mechanism for MSMEs and the Parepare Creative Industry. Coordination in e-commerce is determining criteria for raw materials, packaging, and essential information on sustainable products. In this case, the collaboration will create products based on the coordination results. Sustainability is providing customers with experience in managing product waste and product recycling. [22] The C-Commerce system offers an overview of the work environment in virtual form and coordinates with

each other to create sustainable product innovation. Actor cooperation in this system is essential because it will affect the performance of other actors [23].

5. DISCUSSION

The C-Commerce conceptual model is a form of platform-based ecosystem collaboration. This will relate to monetary transactions and include product creation that supports increased product flexibility. C-Commerce is a platform-based ecosystem where MSMEs establish good relationships with collaboration partners through an integration system containing rules and workflows [24]. The C-Commerce conceptual model integrates ecosystem operations in the supply chain, creating sustainable products that support increased product flexibility. It is hoped that this model will be implemented in Parepare MSMEs and Creative Industries to establish good business relationships and adapt to environmental changes. The C-Commerce model also provides customers with the experience of protecting the environment by implementing the steps given in sustainable products. Parepare MSMEs and Creative Industries will improve business performance by applying innovative strategic techniques. Activities in C-Commerce integrate the supply chain ecosystem in creating sustainable product innovation [25]. We aim to use this model in the context of SME business and creative industries in Parepare City to maintain long-term business relationships and utilize technology in business activities. C-Commerce also provides opportunities to explore customer and stakeholder value through collaboration based on principles of trust between system users [26].

6. CONCLUSION

This research develops a conceptual model of C-commerce using SSM and discusses possibilities and recommendations for implementing the model. SSM can capture various problems in information system design. It covers aspects of computing, organization, and business processes to provide the solutions you need. There is digital technology in C-Commerce that MSMEs and the Parepare Creative Industry can use to design, produce, and create product innovations, monitoring and integrating applications with the stakeholders involved. This concept is appropriate for Parepare MSMEs and Creative Industries to maintain cooperative relationships and increase product flexibility. The limitation of this is that the data

collection techniques still need to be comprehensive. Interviews have not been conducted with all Parepare MSME and Creative Industry ecosystem stakeholders. In compiling a conceptual model using SSM, it has not been compared with the actual situation in the field but only used rich pictures. Further research can be applied throughout the MSME ecosystem and compared with several iterations to obtain a model that matches the reality in the field.

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