



## Analysis of the application of the product-service system in the development of MSMEs on the teras jajan

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### ABSTRACT

In this digital era, people must adapt to the developments that occur, one of which is business competition. Business competition results in companies having to keep innovating in order to win the competition and continue to maintain market share and customers. This transformation gave birth to the conception of the Product-Service System (PSS), a paradigm that integrates tangible and intangible aspects in the value proposition to consumers. PSS or Product Service System is a reliable solution in business competition in this digital era to answer questions about how to develop a business that requires balance and strength to keep this business running for a long duration. The research methods used are Descriptive Qualitative, Interview, and Observation where these three studies aim to understand the phenomena that occur. Based on the results of the research conducted, it is found that of the nine quadrants of the Product-Service System (PSS), only four quadrants are feasible to be applied to Teras Jajan MSMEs, namely Product Related Service, Product Pooling, Outsourcing, and Functional Result. This has relevance to the problems faced by Teras Jajan MSMEs, namely the owners to develop the business they are running.

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## 1. INTRODUCTION

The digital age is a period where advancements in various aspects of life have moved towards going digital (Zis et al., 2021). Digital developments have revolutionized the way companies conduct their operations, with information and communication technology acting as a key driver in driving business innovation (Chaffey & Ellis-Chadwick, 2012). The digital era has brought significant changes, making people's lives more efficient and modern in various aspects, including in the economic field (Tartila, 2022). Digital technology has a significant role in changing the way we interact, access the internet, transform business, education and learning, drive technological innovation, and build a digital economy and its social impact. The landscape of business operations has been transformed by digital advancements, highlighting the role of technology in improving customer interactions and optimizing operational performance (Agustina, Nur'aini, Nazla,

Hanapiah, & Marlina, 2023). The digital era has now been integrated with people's lives today. This situation makes it easier for people to access information and have more opportunities, especially with the benefits of information technology that can overcome the boundaries of space and time.

In this digital era, people must adapt to the developments that occur, there are many innovations in artificial intelligence, cloud computing, Internet of Things (IoT), blockchain, and also big data that play an important role in this development. In today's digital age, traditional methods and processes need to be revisited, while new technologies must be implemented for businesses to remain competitive and continue to grow (Supriyanto & Hana, 2020). Companies are adopting automation in their production processes with digital systems. Not only the production process but also the management, distribution, and procurement of goods also use digital systems. This digital system is what causes a lot of changes from each entrepreneur and makes it a lot of comparison scales in broad competition.

This digital transformation with digital systems has changed many key aspects of running a company in terms of operations and also how it interacts with its customers. Not only internet users, the public is also increasingly accustomed and adaptive to electronic payment systems. The continuity between technology and business is the key to dominance and competitive advantage among companies. Technology and business must be optimized to get a high point in the profit performance and competitiveness of the company. Business strategy, operational efficiency, and added value to consumers are the right strategies to increase competitiveness in the market.

In today's digital era, the business paradigm has shifted from a focus on product sales alone to a more comprehensive integration of products and services. According to Reim et al. (2015), companies can no longer rely on product excellence alone, but must be able to provide added value through the services that accompany the product. This is supported by Tukker (2004) which shows that 70% of companies that successfully survive in digital competition are those that adopt product and service bundling strategies. Furthermore, Annarelli et al. (2019) emphasized that product-service integration not only increases customer satisfaction but also creates a barrier to entry for new competitors. This transformation results in a more sustainable business model and creates a better customer experience through a holistic approach. Companies that successfully integrate products and services can increase profit margins by up to 25% compared to companies that only focus on products (Baines et al., 2017).

Business competition results in companies having to keep innovating in order to win the competition and continue to maintain market share and customers. All business people must be able to adapt to the changes that exist (Setiawan, 2021). In the context of this increasingly dynamic competition, business model innovation is a necessity. One of the most prominent manifestations of adaptation is the evolution from a conventional approach based on product ownership towards a more integrated system. This transformation gave birth to the conception of Product-Service System (PSS), a paradigm that integrates tangible and intangible aspects in the value proposition to consumers. PSS has a significant impact on reducing the use of resources (Clark et al., 2009) and provides a renewed structure in services to facilitate sustainable production and consumption (Tukker, 2004).

Although the topic of PSS first emerged as a research field in the 90s, interest in it has continued to increase, with the number of publications steadily rising. This is probably due to a number of interrelated factors over the years, such as advances in communication and information technology and its increasingly widespread adoption by industrial organizations (Annarelli et al., 2019). According to PSS terms, products are defined as tangible goods produced for sale to consumers. Meanwhile, services are defined as activities that have economic value and are intended for commercial purposes. PSS is a system that adds economic value to a product by adding services to it. According

to Manzini et al. (2001) in a study on Product Service System Methodology, Product Service System (PSS) is a concept that changes business strategy by shifting the focus from selling products alone to providing integrated value between products and services. The offering dimension refers to the products and services developed by providers and presented to consumers (Beuren et al., 2023). The goal is to meet consumer needs with minimal environmental impact. Meeting more specific consumer needs and providing added value during the process of meeting those needs is the main goal of PSS. Commonly known as a “product-service system” (PSS), this value creation system combines tangible products and intangible services. This combination of products and services is designed in such a way that it can provide additional value that is able to meet the needs and desires of consumers more specifically. Product diversity can increase the intensity of business competition, especially in efforts to market and promote each other's products (Tri prasetya et al., 2023). Value creation is the process of generating positive differences or benefits for customers by comparing an existing solution to a need with a new value proposition offered by the company, designed to better meet that need (Gaiardelli et al., 2021).

PSS comes as a strategic response to contemporary market demands, offering solutions that overcome the limitations of traditional business models. This approach does not simply combine products and services, but creates a comprehensive value ecosystem, where each element reinforces the other to generate optimal benefits. According to the International Finance Corporation in 2021, 60% of MSMEs that implemented a PSS-based business model increased revenue significantly in the first two years. The advantage of PSS lies in its ability to deliver operational efficiency while maximizing consumer value.

The sustainability of the Teras Jajan MSME business is determined by winning market share or customers from the invasion of competitors. With technological advances and changes in consumer behavior, traditional business models also need to adapt, MSMEs Teras Jajan will use the PSS concept. The Product Service System (PSS) concept is suitable for Teras Jajan MSMEs to increase added value, sales, and profits for both customers and providers.

## 2. RESEARCH METHOD

This research was conducted at Teras Jajan MSMEs located in Limo, Depok, West Java with a period of three days starting from September 8, 2024. MSMEs Teras Jajan has five employees who cook and serve customers and in a day can sell 150 portions.

Descriptive qualitative research aims to display and analyze phenomena, events, social activities, attitudes, beliefs, perceptions, and thoughts of individuals and groups. This method produces descriptive data consisting of subject behavior and their spoken and written words. The research method used is a qualitative descriptive method with primary data type that refers to a research approach that aims to understand the phenomena that occur. This method is descriptive to focus on data collection and analysis by means of interviews and observations. Here are some stages of research using descriptive qualitative: (a) Planning, this stage identifies the problem, conducts a literature review, and also formulates, (b) Data collection, this stage can be done by observation, in-depth interviews, documentation studies, and also FGD (Focus Group Discussion), (c) Data analysis, this stage will reduce data, present data, and also draw conclusions, (d) Validation, this stage will use triangulation, namely sources, methods, and also time.

According to Fadhallah (2021) an interview is a face-to-face conversation in which one party explores information with the interlocutor. Interview is an approach that aims to find out and describe what phenomena occur in the Teras Jajan MSMEs where data collection with this interview method is carried out together with the owner with the

initials H (32). Qualitative methods through in-depth interviews are able to obtain more in-depth and rich information about the experiences and perspectives of respondents (DiCicco-Bloom & Crabtree, 2006).

Direct observation of objects in the environment, both ongoing and still in a certain stage, including using the five senses to pay attention to the object of study, and carried out consciously and deliberately in a predetermined order. Observation or direct observation is used to see phenomena from different perspectives and validate to obtain accurate data. These observations were made while employees were cooking, discussing with suppliers, and also interacting with customers.

### 3. RESULTS AND DISCUSSIONS

In this research, data is processed by filling out a questionnaire containing existing quadrants, eligible quadrants, and several questions related to product identification that will be discussed as well as the results of quadrants that are suitable for business development. Finally, questions regarding product and business identification to make it easier to determine suitable and relevant quadrants are the determination of products or businesses into product-oriented categories or what is known as product-oriented, use-oriented, and service-oriented. The eligible quadrant is a quadrant that contains proposals from researchers regarding quadrants that are considered suitable for use in Teras Jajan MSMEs.

Tabel 1. Product and Business Identification Questions

Number	Question	Yes/No
1	Does your institution offer products that are goods or services only (no combination)?	No
2	Does your institution offer products in the form of goods and services (simultaneously)?	Yes
3	Does your institution have specialized human resources who are members of a team of experts in the field of products that you offer?	No
4	Does your institution have specialized human resources to develop software?	No
5	Does your institution have sufficient financial resources to offer installments/lease? (e.g. if offering installments of 6 x payments per period, then the institution has available reserve funds equal to 6 x cashflow period)	No
6	Can the product/service provided to customers be enjoyed by different customers at the same time?	Yes
7	Does your institution have partners who can help distribute the products/services provided?	Yes
	If question 7 is answered yes, please answer the following questions	
7a	Is the business partner willing to distribute products/services provided by the payment method per unit of service?	No
7b	Is the business partner willing to distribute products/services provided in a tailored/customized manner (according to customer needs/desires)?	Yes

Tabel 2. Existing situation of MSMEs Teras Jajan

Product Service System		
Product Oriented	Use Oriented	Result Oriented
Product Related Service (Quadrant 2)	Product Lease	Outsourcing (Quadrant 8)
Advice & Consulting	Product Renting/Sharing	Pay Per Service Unit
Product Related Software	Product Pooling	Functional Result

Tabel 3. Eligible state of Teras Jajan MSMEs

Product Service System		
Product Oriented	Use Oriented	Result Oriented
Product Related Service (Quadrant 2) Advice & Consulting	Product Lease Product Renting/Sharing	Outsourcing (Quadrant 8) Pay Per Service Unit
Product Related Software	Product Pooling (Quadrant 7)	Functional Result (Quadrant 10)

Based on the data processing above, the research results show that of the nine Product Service System (PSS) quadrants, there are only four that are feasible to be applied to Teras Jajan MSMEs, namely Product Related Service, Product Pooling, Outsourcing, and Functional Result. This is in line with the problem of wanting to expand from how to reach a wider range of consumers and this business is growing so that it can increase profits and also a more varied business style. Therefore, the four quadrants were chosen to get a more in-depth analysis through the Product Service System (PSS) approach in Teras Jajan MSMEs as follows:

Product related service in the Product Service System (PSS) refers to how to incorporate service to the product itself as it already exists, namely they sell food that was previously given a service, namely making it into a finished food. There are additions such as customization of products such as adjusting spiciness, toppings used, portions, and food presentation that can be implemented to make additional value from the food. Then in terms of the atmosphere of Teras Jajan, additions can be made such as a special room for waiting, knowledge of the nutrition of the food served, a digital menu attached to the barcode so that customers can choose food while waiting in the queue to eat. There is also a loyalty program so that customers are interested in coming back again to collect points and exchange points so as to maintain long-term customer interest.

Product pooling in the context of Product Service System (PSS) has a concept where physical products get equal access between ownership or it can be interpreted that they can be used together by customers. This aims to reduce the need for inefficient ownership in order to provide maximum service. In Teras Jajan MSMEs, this product pooling means joint use in the main ingredients they use. They sell several types of food made from complementary ingredients. Customers can choose menu variations with a variety of flavors in one package and enjoy more than one variety in one purchase. Then they also provide a large area for eating together, they can also provide charging stations and wifi facilities so that customers can stay longer at Teras Jajan UMKM so that their chances of buying more are high.

Outsourcing or the concept is to use delivery services. This service has developed a lot and has become the main staple nowadays, namely by using GoFood, GrabFood, and also ShopeeFood where later the reach of customers and markets can be wider and there is also no need for additional investment in your own fleet. No need to worry about fraud that occurs, there is a tracking system that can be monitored from the delivery side and also the customer. In addition to delivery, it can also be in terms of raw materials such as selling frozen food so that when customers can enjoy their food anywhere. In addition to the two, there is also the implementation of outsourcing, which can be in the packaging where it will work with packaging vendors to have their own packaging design so that there is a characteristic of Teras Jajan. When there are sales based on food orders for an event, they can attract the attention of the event audience to Teras Jajan so that the exposure can be greater.

Functional Result itself can focus when they expand their business to online applications for food vendors such as GoFood, GrabFood, and ShopeeFood. Teras Jajan can provide guarantees such as taste satisfaction, warmth, and freshness of the food. This gives a sense of trust in quality because they dare to take responsibility. Then for on-site services, they can provide slogans such as "Serving a maximum of 15 minutes or

free” which shows that the capabilities of the server are fast and customers will choose to eat there because of fast service when they are presented with many other competitor options. Apart from services, it can also be in online applications or direct services such as holding promos when there are certain times such as twin dates or Friday blessings.

#### 4. CONCLUSION

Product Service System (PSS) is a business approach where we not only buy the product but also get services to increase the value of a product. Customers not only buy products, but also pay attention to economic, environmental and other factors (Purwaningsih et al., 2016). Product Service System (PSS) has a positive impact such as maximizing raw materials, increasing profits, then also maintaining the stability of the business being carried out. Based on the results of this study, there are four quadrants of the Product Service System (PSS) that are suitable for use in Teras Jajan MSMEs, namely Product Related Service, Product pooling, Outsourcing, and Functional Result. This is in line with what the owner wants, namely Product Related Service and Outsourcing, but there are two other potentials, namely Product Pooling and Functional Results that can be done by the owner to develop the business they are running.

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