

OPTIMIZING BUSINESS STRATEGIES THROUGH THE APPLICATION OF PRODUCT–SERVICE SYSTEMS (PSS) AT TUANG RUANG

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Abstract

This study analyzes the optimization of business strategies through the application of Product–Service Systems (PSS) at Tuang Ruang, a construction-based enterprise that integrates architectural design and creative services. Although the company has adopted basic PSS elements, its current implementation remains limited and requires strategic enhancement to strengthen competitiveness and long-term sustainability. Using a qualitative descriptive approach supported by interviews, field observations, and PSS quadrant assessment, this research evaluates Tuang Ruang’s product–service integration and identifies opportunities for advancing its business model. The results indicate that the company currently aligns with Quadrant 3, which emphasizes advisory and consulting services. However, further analysis reveals several eligible quadrants that offer greater strategic potential, including Product Related Service (Quadrant 2), Advice & Consulting (Quadrant 3), Outsourcing (Quadrant 8), Pay Per Service Unit (Quadrant 9), and Functional Result (Quadrant 10). Proposed strategic directions include developing a digital application equipped with self-design and project monitoring features, establishing a dedicated architectural consultation studio, forming partnerships with third-party software providers, implementing flexible pay-per-use service schemes, and adopting performance-based contracting models. These initiatives support the transition toward a more integrated service-oriented framework that enhances operational efficiency, customer experience, and market competitiveness. Overall, the PSS-based strategy offers significant potential to transform Tuang Ruang into a more adaptive, innovative, and sustainable construction service provider.

Keywords: Business Strategy, Construction Industry, Product–Service System, Service Innovation, Tuang Ruang

Introduction

The growth of the architecture and construction industries has shifted business models from product-focused approaches toward strategies that emphasize value creation and sustainability. The Product–Service System (PSS) framework introduced by Goedkoop et al. (1999) has gained importance because it integrates products and services to deliver long-term value. Despite this relevance, most existing PSS studies still primarily examine large companies, resulting in limited insights regarding its application in small and medium enterprises.

Several researchers have further developed the theoretical foundation of PSS. Tukker (2004) categorized PSS into three main types, although his classification does not specify which model is most appropriate for micro, small, and medium enterprises (MSMEs). Mont (2002) discussed how PSS can shift value creation from products toward service-based solutions but did not outline concrete implementation methods for smaller firms. Baines et al. (2007) demonstrated that PSS can improve customer loyalty and resource efficiency, although their findings are mostly derived from studies on large-scale organizations. Reim et al. (2015) explored how PSS relates to business model innovation, especially in areas of value creation and value capture, yet the specific challenges faced by MSMEs remain insufficiently investigated.

From a sustainability viewpoint, Manzini and Vezzoli (2003) emphasized the strategic role of PSS in supporting environmentally conscious design. Gumulyo and Irwandi (2017) also noted that empirical research on PSS in Indonesia is still limited, even though the concept holds significant potential to strengthen the competitiveness of small businesses. These studies indicate that there is a clear research gap regarding PSS application within architecture, interior design, and construction MSMEs, particularly for companies like Tuang Ruang that operate with constrained resources while being required to maintain high levels of innovation.

Therefore, this study aims to determine PSS implementation strategies that align with the characteristics of Tuang Ruang by identifying key criteria, assessing strategic priorities, and formulating a business model designed to enhance competitiveness, increase resource efficiency, and improve customer satisfaction through an integrated and sustainable service approach.

Methods

This study uses a qualitative descriptive method grounded in the Product–Service System (PSS) framework to examine how Tuang Ruang integrates product and service components within its business activities. This approach aims to understand the company’s actual conditions, strategic practices, and sustainability initiatives by exploring the relationship between design, construction, and service delivery.

Instead of depending on numerical analysis, the method focuses on capturing the company’s value creation processes and its efforts to improve customer satisfaction through integrated and sustainable service offerings.

The data were collected through in-depth interviews and direct field observations. The interview was conducted on September 23, 2025, with the owner of Tuang Ruang at the company’s office in Jatirangga, Bekasi. This discussion provided detailed insights into the company’s operational practices, challenges, and PSS-related strategies. It also explored how Tuang Ruang combines design outputs with service-oriented activities such as consultation, customization, and post-project follow-up, which aligns with the principles of the PSS approach.

In addition to interviews, on-site observations were performed to document real-time operations and interactions within the service process. These observations supported the identification of how product and service elements are integrated in practice, contributing to sustainable performance and client-centered innovation. To enhance the credibility of the findings, information obtained from interviews and observations was cross-checked through data triangulation, which strengthened the validity and reliability of the study. Through this PSS-based qualitative method, the research provides a comprehensive understanding of how Tuang Ruang generates sustainable value by combining tangible products with intangible services.

Results and Discussion

This research began with distributing a questionnaire aimed at identifying Tuang Ruang’s current and potential business orientations based on the ProductService System (PSS) framework. The questionnaire covered four components: the existing quadrant, the desired quadrant, the proposed quadrant, and several guiding questions regarding product–service integration. The existing quadrant describes the company’s present condition, whether it is more product oriented, use oriented, or service oriented, while the proposed quadrant presents recommendations for a future orientation that better supports business sustainability. By analyzing the responses, the researcher identified the most relevant quadrant for Tuang Ruang’s development and summarized the results in a tabular format to clearly compare the existing, desired, and proposed conditions, providing insights into the company’s strategic direction toward a more service integrated and sustainable model.

Table 1. Responden Questionnaire

No.	Questions	Yes/No
1	Does your institution offer products that are goods only (no combination with services)?	Yes
2	Does your institution offer products that combine goods and services (simultaneously)?	Yes
3	Does your institution have specialized human resources who are part of a team of experts in the field of the products offered?	Yes
4	Does your institution have specialized human resources to develop software?	Yes
5	Does your institution have sufficient financial resources to offer installment or leasing options?	No
6	Can the products or services provided to customers be enjoyed by different customers at the same time?	Yes
7	Does your institution have business partners who can help distribute the provided products or services?	Yes
7a	If question 7 is answered yes, is the business partner willing to distribute the products or services using a per-unit payment method?	Yes
7b	If question 7 is answered yes, is the business partner willing to distribute the products or services in a tailored or customized manner to meet customer needs?	Yes

Table 2. PSS Quadrant Existing

Pure Product	Product Service System			Pure Service
	Product Oriented	Use Oriented	Result Oriented	
Customer Ownership	Product Related Service	Product Lease	Outsourcing	Service Providing
	Advice & Consulting	Product Renting/Sharing	Pay Per Service Unit	
	Product Related Software	Product Pooling	Functional Result	

Table 2 highlights Quadrant 3, which describes the company's current status, representing its existing strategies and operations. This shows PT. Elstone Mega Karya's current position in terms of its business model and operational focus.

Table 3. PSS Quadrant Desire

Product Oriented	Use Oriented	Service Oriented
Product Related Service	Product Lease	Outsourcing
		Quadrant 8
Advice & Consulting	Product Renting/Sharing	Pay Per Service Unit
Product Related Software	Product Pooling	Functional Result
Quadrant 4		

Table 3 illustrates the classification of Product–Service Systems (PSS) into three orientations: Product-Oriented, Use-Oriented, and Service-Oriented, each representing a different level of integration between products and services. Quadrants 4 and 8 illustrate the company's desire to optimize their operations.

Table 4. PSS Quadrant Eligible

Product Oriented	Use Oriented	Service Oriented
Product Related Service	Product Lease	Outsourcing
		Quadrant 8
Advice & Consulting	Product Renting/Sharing	Pay Per Service Unit
		Quadrant 9
Product Related Software	Product Pooling	Functional Result
		Quadrant 10

Table 4 illustrates the classification of Product–Service Systems (PSS) into three orientations: Product-Oriented, Use-Oriented, and Service-Oriented, each representing a different level of integration between products and services. Quadrant 2 (Product-Related Services), Quadrant 3 (Consulting and Advisory), Quadrant 8 (Outsourcing), Quadrant 9 (Pay-Per-Unit Services), Quadrant 10 (Functional Outcomes) Each of these quadrants offers unique opportunities to enhance the business, optimize its operations, and position it for sustainable growth and competitiveness.

Quadrant 2: Product Related Service

Tuang Ruang can develop technology-based services through digital applications that support the company's main activities. Based on an interview with the owner of Tuang Ruang, the application can be designed with two main functions: an independent design feature for customers and a project monitoring feature for internal company use. Through independent design, customers can customize building designs according to their needs and preferences before construction begins, thereby increasing participation and satisfaction. Meanwhile, the project monitoring feature allows clients to view construction progress, work schedules, and progress reports in real-time through an integrated platform. The presence of this application not only improves communication efficiency and transparency, but also strengthens the company's relationship with clients through innovative services that provide added value

Quadrant 3: Advice & Consulting

Currently, Tuang Ruang already has product-related services in this field. However, based on the interview results, the company plans to develop these services by building an architecture studio as a more comfortable and supportive consultation space for customers.

Quadrant 8: Outsourcing

Tuang Ruang's desire to develop its business in product-related services is not yet eligible at this time, but Tuang Ruang can collaborate with a third party, namely outsourcing, to provide software that supports Tuang Ruang's operations and marketing, such as company applications/websites as customer access and increasing productivity and schedule reliability through data-based project control and material intelligence using a special dashboard for internal companies.

Quadrant 9: Pay Per Service Unit

In this quadrant, Tuang Ruang can implement a payment system based on volume or units of service used. Examples include building maintenance services with rates per square meter, heavy equipment rentals with hourly fees, or project supervision services based on the number of visits. This flexible payment model makes it easier for customers because they only pay according to their needs, while also helping the company reach more clients with varying financial capabilities.

Quadrant 10: Functional Result

Construction companies can transform themselves into providers of functional results by offering performance-based contracts, such as build–operate–maintain or turnkey projects, where clients pay when facilities function according to targets. Companies can also manage smart buildings that ensure energy and operational efficiency. With this approach, the focus of services shifts from physical construction to

achieving results that provide tangible benefits to users, thereby increasing the company's competitiveness and strategic value in the market.

Conclusion

The results show that applying a Product–Service System (PSS) in construction companies such as Ruang Ruang can be an effective approach for increasing business value and strengthening competitiveness. Through the integration of products and services, the company is able to transition from a strictly product-based business model to one that is more sustainable and service-oriented. The PSS quadrant assessment identifies several potential areas for development, including Product Related Service, Advice and Consulting, Outsourcing, Pay Per Service Unit, and Functional Result. Initiatives such as developing digital applications, creating a comfortable architectural studio for client consultations, forming collaborations with external partners, offering flexible payment options, and implementing performance-based service agreements represent concrete measures that support adaptive and modern business transformation. In essence, the PSS framework enables construction firms to expand beyond the delivery of physical projects and focus on building long-term customer relationships through value-added services that prioritize comfort, efficiency, and sustainability.

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Authors' Bibliography

She was born in Jakarta, Indonesia, in 2005. She is presently undertaking her undergraduate studies in Industrial Engineering at Universitas Pembangunan Nasional Veteran Jakarta. Throughout her academic journey, she has developed a strong interest in industrial management and product–service systems, with a focus on how these areas can support operational enhancement and drive innovative service solutions.