

Navigating the Landscape of Sharing Economy: Servitization-based Business Model Innovation

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Abstract. Contemporary business environment alongside the advancement of digital technologies inspires organizations to adopt different business model innovations, embracing concepts like product-service systems (PS systems) and sharing economy. Both approaches are primarily about the creation of added value for those involved in the ecosystem by focusing on providing access to goods and services rather than pure ownership. Consequently, this leads to achieving resource optimization, step-forward sustainable development and advancing overall user experience. While a shift toward models enriched by services, promises enhanced customer value, it also entails uncertainties, organizational challenges and various risks, including managerial, operational or financial. Therefore, this paper examines and compares servitization-based business models grounded on recognized features from the available literature. This should be a starting point for a better understanding of the mutual value of these approaches and the corresponding effects of their application.

Keywords. Business model innovation, servitization, product-service systems, sharing economy

1 Introduction

The wide array of contemporary business models has emerged influenced by many different elements of modern business landscape, but the importance of the sharing economy can't be denied in this context. The integration of sharing economy principles into product-service systems (PS systems) fosters innovative approaches to value creation and resource utilization. Traditional approaches, to balancing and utilising conflicted and inseparable offer and demand side of the market, have been reshaped beyond recognition, offering never never-ending spectrum of infinite possibilities for entrepreneurial and creative thinking (Curtis, 2021). This wave of innovative structures is associated with collaborative consumption, exploitation of underutilized resources and translation of technology among different industries. The phenomenon of sharing resources and other elements of businesses has sparked a thorough examination and pivoting of existing business models, as well as the development and implementation of new business strategies. These endeavours are typically aimed at ensuring efficient resource usage and enhancing the consumer experience (Öberg, 2023).

Blossoming in this environment, a diverse collection of innovative business models has sprung, bringing to light colourful group of unique ways to design, create and deliver value, each challenging conservative and common notions of ownership, transactions, belongings and utilization. The wisdom that has developed from those concepts suggests that there is a way to leverage technology and social constructs to facilitate collaborative ventures, and the examples can be found ranging from peer-to-peer rental platforms, through co-working spaces, all the way to subscription-based services and product-service hybrids (Curtis, 2021). In order to find a way to differentiate themselves from the competition in these lucrative surroundings, within the wide spectrum of innovative business models, strategists have directed their attention particularly on different ways to address evolving consumer preferences and demands. It is no wonder, then, that there is a primary focus on service-oriented patterns and hybrid PS systems. These approaches can provide the additional value that customers seek, either through delivering intangible services or integrating services within tangible product offerings.

2 Critical Examination of Theoretical Background and Literature

2.1 Sharing Economy Business Models

During the previous decade, sharing economy has blurred borders of industries, shifted traditional playing field for competition and redefined the way we see value creation (Öberg, 2023). Those swings have allowed for both well-known global giants, as well as small startups to try their chances in this innovative environment, delivering remarkable examples that range from Uber and Airbnb, to BlaBlaCar, BeWelcome and WeWork, and all the different platforms of varying size in between (Constantiou et al., 2017). This has also encouraged authors to do extensive bibliometric analysis, to fill the gaps and critically evaluate the extant literature on this subject (Duan, 2023).

The restructured business models, while not entirely novel, leverage digital technologies to enable a broader spectrum of business models, reflecting a growing trend of firms adopting multiple models to cater to diverse market segments or products (Li, 2020). Business models and platforms that sprung in a setting created by sharing economy principles, can be distinguished from traditional networks of suppliers or third-party intermediaries, because they combine both organisational and structural mechanisms, as well as market mechanisms, creating additional value along the way for the ever-evolving needs of customers (Barbu et al., 2018).

Evaluation among business models in literature is usually done by comparison between traditional ones and the ones induced by contemporary business landscape (Gatautis et al., 2018). When it comes to frameworks that can be used for assessing different types of business models, different authors have different approaches. Research (Gatautis et al., 2018) shows that Business Model Canvas by Osterwalder and Pigneur, can be used for qualitative analysis, with authors comparing local and global organizations that provide accommodation among categories like value proposition, customer segments, channels and support, and key activities, resources and partners, along with cost structure and revenue streams. Other authors (Munoz & Cohen, 2017) suggest that analysis should be done using descriptive criteria: (1) how much the business depends on a digital or physical platform for collaboration, (2) degree to which resources are shared, (3) varieties and significance of peer-to-peer interactions and transactions, (4) degree to which the business is receptive to integrate the users into value creation activities and benefits, (5) how pivotal are social and environmental value and impacts concerning economic value and the overall business operations, (6) to what degree does the business employ or emphasize alternative funding sources (grants, crowdfunding, or equity-based crowdfunding) throughout various stages of the venturing, and (7) how much does the business depend on technology.

2.2 Product-Service System

In the aforementioned context, taking into consideration that it is essential to adapt and pivot traditional structures in order to satisfy contemporary consumers, it is no wonder that shifting to the services has become a necessity (Bigdeli et al., 2018). PS systems embody a specific combination of tangible products and intangible services, which are represented in variable ratios depending primarily on the capability to gratify customer needs (Somers et al., 2018).

Amidst evolving business conditions, innovating business models can offer a competitive edge, even more so as product-oriented companies typically consider services as cost factors rather than revenue sources (Park et al., 2012). The concept of PS system, commonly explored in manufacturing and product-oriented sectors, holds considerable promise for service industries too, especially with the transformative impact of new technologies like cloud technology on sales, delivery, and support methods (Mihailović et al., 2022). Integrating services with products dictate novel business models, transitioning “from services for free to services for fee” (Witell & Löfgren, 2013). This type of business transformation is known as servitization, and it has been a subject of interest in different research since the late nineteen-eighties (Fritze, et al., 2018). Services focused on data, like condition monitoring and remote services, are becoming foundational for providing PS system, where customers pay based on production units rather than fixed fees (Soellner et al., 2024). Even though there are a lot of benefits to be gained from creating additional value for customer by providing them with added services, organizations stand to encounter significant challenges during this transformative process, mostly due to the fact that they can’t simply modify some parts of their operations, but they have to change the entire manner of conducting their business.



2.3 Servitization-based Business Models

The phenomenon of servitization has shepherded the development of a unique subset of business models that emphasize long-term customer relationships, continuous value delivery, and revenue streams based not only on sales of goods, but also on service provision. Those models can be categorized using numerous criteria depending on the purpose of classification.

Business model categorisation that will be used for analysis in this paper is by far the most supported in the literature and it is based on differences in terms of creating, delivering and capturing value, establishing three distinct business models, based on the subject of a contract and ownership: 1) product-oriented services, which involve selling products with added services; 2) use-oriented services, where the provider retains ownership of the product and offers it in a different form; and 3) result-oriented services, where the agreement is based on achieving a specific outcome without a predefined product (Tukker, 2004). Each model possesses distinct attributes, benefits, and risks, and familiarity with these traits aids organizations in selecting the most suitable business model aligned with their objectives, resources, and market dynamics. The following section will explore their similarities and differences.

3 Comparative Analysis

Business models based on *product-oriented services* entail selling of goods, but the value for the customer is enriched by adding service to the package. In this way, ownership is transferred to the customer. Illustrative examples can be found with Tesla (offers electric vehicles with added services like software updates and access to charging infrastructure), or Sony PlayStation (sells gaming consoles with added services like online multiplayer and exclusive content). In that sense (Tukker, 2004) offers two more specific types of PS system: *product related service* and *advice and consultancy*.

The second category is defined by *use-oriented services* where product still plays the key role, but the business model is not based on selling goods, and the ownership stays with the provider, while customer has a chance to use it and often share it with others, creating the following subtypes: *product lease*, *product renting or sharing*, *product pooling* (Tukker, 2004). These types of models are represented by Zipcar (offers car-sharing services where the provider retains ownership of the vehicles and offers them for use by customers) or WeWork (offers co-working space services where the provider retains ownership of the office spaces and offers them for use by entrepreneurs and businesses).

Third and the last type of business model is defined by *result-oriented services*, where there is a principal agreement between a provider and a customer about a wanted result, but there is no pre-determined product involved, and it can be in the form of *activity management/outsourcing*, *pay per service unit* or *functional result* (Tukker, 2004). Examples can be illustrated by Uber (offers transportation services where the agreement is based on achieving a specific outcome, such as reaching a destination), and Upwork (provides freelancing services where the agreement is based on completing a project).

Comprehensive overview of discussed characteristics is provided in the Table 1, enabling a straightforward comparison of the advantages and disadvantages of the described types of models.

4 Discussion and Conclusion

Each of the mentioned business models has its own specific characteristics, advantages and risks associated with it. Models based on result-oriented services have a high degree of flexibility, innovation and economic viability, but at the same time, they carry high risks and security challenges. On the other hand, the model based on product-oriented services may have high economic viability and demands the least adaptation to traditional models, but it also implies lower innovation and environmental sustainability. Comparison of value creation, sustainability and resource utilization on one hand and the potential risks and need for adaptation on the other, is of most value when choosing between different servitization-based business models.

Product-service innovation may not consistently yield anticipated benefits nor enhance firms' likelihood of survival. Organizations that plan to engage in product-service integration must take into consideration the possibility of early-stage financial losses due to heightened investment in business transformation.



Table 1. Comparison of Servitization-based Business Models (Source: Authors' work)

Criterion	PRODUCT-ORIENTED SERVICES	USE-ORIENTED SERVICES	RESULT-ORIENTED SERVICES
Type of product / service	Selling products with added services	Provider retains ownership and offers it in a different form	Agreement based on achieving a specific outcome
Ownership of product	Customer	Provider (until the end of agreement period)	Ownership isn't tied to a specific product and it is shared based on the agreement
Flexibility & User experience quality	The emphasis is more on the functionality and features of the product rather than the service aspect	Allows for customization and tailoring of the service to meet individual user needs	Since the focus is on achieving a specific outcome rather than owning a product, there's a strong emphasis on delivering value and meeting customer expectations
Resource Sharing Potential	Typically, low (because the ownership of the product remains with the customer, limiting the scope for resource sharing)	Typically, high (provider can facilitate resource sharing among multiple users)	Moderate to high (agreement is based on achieving a specific outcome and depending on the extent to which the provider facilitates sharing)
Environmental and Economic Sustainability	Emphasis is on selling products, which can lead to increased consumption and waste, but the economic sustainability may be higher as revenue is generated through product sales	Exhibits higher environmental sustainability (promotes resource efficiency through the sharing or reuse), can have favorable economic sustainability (subscriptions or fees)	Both environmental and economic sustainability in this model can vary depending on the specific outcome being targeted
Need for new capabilities, altering of organization structure or processes	May require fewer new capabilities and organizational changes since the focus is primarily on selling products with added services, with some level of adaptation to integrate services	Higher demand for new capabilities and a more significant alteration of organizational structure and processes (shifting from product-centric to service-centric operations)	Moderate to high since the focus is on delivering specific outcomes (organizations may need to develop specialized expertise, adopt new technologies, and reconfigure their operations)
Financial & Operational Risk	Moderately low financial and operational risks (due to reliance on predictable product sales revenue, and established manufacturing and distribution processes)	Moderate financial risks (investments in service infrastructure and technology), and higher operational risks (transition to service-centric operations and resource sharing complexities)	Potentially high financial risks (uncertain outcome delivery and resource-intensive investments) and moderate to high operational risks (planning and execution to achieve specific outcomes)



Entities must be ready to undertake significant operational risks amid high uncertainty when initiating and expanding service portfolios to provide value to customers (Bigdeli, et al., 2018). Assessing the balance between value generation, sustainability, and resource management alongside the associated risks and additional requirements is crucial for selecting the most suitable type of business model.

References

- Barbu, C., Bratu, R., & Sirbu, E. (2018). Business Models of the Sharing Economy. Review of International Comparative Management, 19(2), 154-166. <https://doi.org/10.24818/RMCI.2018.2.154>
- Bigdeli, A. Z., Baines, T., Schroeder, A., Brown, S., Musson, E., Shi, V. G., & Armando, C. (2018). Measuring servitization progress and outcome: the case of 'advanced services'. Production Planning & Control, 29(4), 315-332. <https://doi.org/10.1080/09537287.2018.1429029>
- Constantiou, I., Márton, A., & Tuunainen, V. (2017). Four Models of Sharing Economy Platforms. MIS Quarterly Executive, 16(4), 231-251. ISSN 1540-1960
- Curtis, S. K. (2021). Business model patterns in the sharing economy. Sustainable Production and Consumption, 27, 1650-1671. <https://doi.org/10.1016/j.spc.2021.04.009>
- Duan, C. (2023). A State-of-the-Art Review of Sharing Economy Business Models and a Forecast of Future Research Directions for Sustainable Development: A Bibliometric Analysis Approach. Sustainability, 15(5), 1-37. <https://doi.org/10.3390/su15054568>
- Fritze, M., Urmetzer, F., Khan, G., Sarstedt, M., Neely, A., & Schäfers, T. (2018). From Goods to Services Consumption: A Social Network Analysis on Sharing Economy and Servitization Research. Journal of Service Management Research, 2(3), 3-16. <https://doi.org/10.15358/2511-8676-2018-3-3>
- Gatautis, R., Vaiciukynaitė, E., & Vitkauskaitė, E. (2018). Comparative Study of Sharing Economy Business Models in Accommodation Sector. Digital Transformation – From Connecting Things to Transforming Our Lives, (pp. 593-606). Bled, Slovenia. <https://doi.org/10.18690/978-961-286-170-4.41>
- Li, F. (2020). The digital transformation of business models in the creative industries: A holistic framework and emerging trends. Technovation, 92-93, 102012. <https://doi.org/10.1016/j.technovation.2017.12.004>
- Mihailović, J., Stošić, B., & Milutinović, R. (2022). The Application of Product-Service System in Telecommunications. Sustainable Business Management and Digital Transformation: Challenges and Opportunities in the Post-COVID Era (pp. 329-342). Cham: Springer. https://doi.org/10.1007/978-3-031-18645-5_20
- Moro, S., Cauchick-Miguel, P., & Mendes, G. (2020). Product-service systems benefits and barriers: an overview of literature review papers. International Journal of Industrial Engineering and Management, 11(1), 61-70. <https://doi.org/10.24867/IJIE-2020-1-253>
- Munoz, P., & Cohen, B. (2017). Mapping out the Sharing Economy: A Configurational Approach to Sharing Business Modeling. Technological Forecasting and Social Change, 125, 21-37. <https://doi.org/10.1016/j.techfore.2017.03.035>
- Öberg, C. (2023). Towards a typology of sharing economy business model transformation. 123, 102722. <https://doi.org/10.1016/j.technovation.2023.102722>
- Park, Y., Geuma, Y., & Lee, H. (2012). Toward integration of products and services: Taxonomy and typology. Journal of Engineering and Technology Management, 29(4), 528-545. <https://doi.org/10.1016/j.jengtecman.2012.08.002>
- Shin, J., Kim, Y., Jung, S., & Kim, C. (2022). Product and service innovation: Comparison between performance and efficiency. Journal of Innovation & Knowledge, 7, 100191. <https://doi.org/10.1016/j.jik.2022.100191>



- Soellner, S., Helm, R., Klee, P., & Endres, H. (2024). Industrial service innovation: Exploring the transformation process to digital servitization in industrial goods companies. *Industrial Marketing Management*, 117, 288-303. <https://doi.org/10.1016/j.indmarman.2024.01.009>
- Somers, L., Ivo, D., & Baelus, C. (2018). Understanding product-service systems in a sharing economy context - A literature review. *Procedia CIRP* (pp. 173-178). Linköping, Sweden: Elsevier. <https://doi.org/10.1016/j.procir.2018.03.317>
- Tukker, A. (2004). Eight Types of Product-Service System: Eight Ways to Sustainability? Experiences from Suspronet. *Business Strategy and the Environment*, 13(4), 246-260. <https://doi.org/10.1002/bse.414>
- Witell, L., & Löfgren, M. (2013). From service for free to service for fee: Business model innovation in manufacturing firms. *Journal of Service Management*, 24(5), 520-533. <https://doi.org/10.1108/JOSM-04-2013-0103>