Digital Service Innovation: Redefining Provider-Customer Interactions

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The Advanced Services Group, Aston University

The Advanced Services Group (ASG) is a centre of excellence within Aston Business School specialising in servitization and advanced services. It delivers education, training, and research to help global manufacturers and technology innovators to develop services-led strategies. The Advanced Services Partnership is an international research network, which was formed in 2015, and comprises larger manufacturing organisations that are traditionally production-focused and are now in the earlier stages of exploring, developing, and deploying advanced services. It sustains a nurturing environment comprised of one-to-one support and roundtables that are structured so that experiences can be shared openly and constructively. Partners are drawn from across Europe and the USA.

Current Research

Servitization Impact Programme: Economic Productivity
& Environmental Performance

This ground-breaking research programme is set to shape industrial best practices and influence decisions around industrial policy associated with productivity and de-carbonisation. It will establish evidence to illustrate how servitization impacts both economic productivity and environmental performance (i.e., net-zero and the green economy) and use these insights to influence industrial policy and practice in the UK. This will clarify and explain whether, when, and how the adoption of servitization should be encouraged to maximise the economic and societal impact. Researchers, from The Advanced Services Group in collaboration with The Energy and Bioproducts Research Institute and The College of Engineering and Physical Sciences at Aston University together with researchers at Warwick Business School; will develop a strong theoretical foundation based on prior research on business model innovation and value networks.

The University of Tilburg

Tilburg University, located in Tilburg, the Netherlands, is a public university renowned for its research and education in social and behavioral sciences, business and economics, law, theology, and humanities. The university supports a vibrant academic community of approximately 19,900 students and over 2,200 staff members, fostering a diverse and inclusive environment. At the heart of its mission, Tilburg University is committed to advancing research and education. Research at Tilburg University is distinguished by its focus on societal impact. The institution is noted for its significant contributions in economics, where its Faculty of Economics and Management ranks highly globally. Also, in law and humanities, it has achieved top rankings in national and international assessments, reflecting its strong research output and academic excellence. The university's research also extends to pressing global challenges such as mental and preventive health, inclusivity in the labor market, climate change, and the impacts of digitalization. Through interdisciplinary collaboration, Tilburg University not only advances academic knowledge but also develops practical solutions in cooperation with regional and international partners.

In terms of education, Tilburg University is growing rapidly. The university offers 73 bachelor's and master's programs, with 43 taught in English, reflecting its global perspective. Each year, the university awards about 120 PhDs, underscoring its role as a crucial player in academic and professional training. This commitment to high-quality research and education aims to develop responsible leaders who are prepared to address complex issues, contributing to the welfare of society both now and in the future.

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Introduction

The Spring Servitization Conference (SSC2024) is dedicated to understanding how organisations develop and adapt their business models through servitization and advanced services. The theme will be Digital Service Innovation: Redefining Provider-Customer Interactions and will be held in Tilburg, the Netherlands. Once again, the conference will bring together the world's leading researchers, practitioners, and doctoral students to debate and engage with the theory and practice of servitization. SSC2024 will comprise the Servitization Doctoral Symposium (Sun 12th May) and the main Spring Servitization Conference (Mon 13th and Tues 14th May). On Sunday 12th May, we will host our third doctoral symposium for doctoral students whose research focuses on topics related to servitization (including Product-Service Systems, services-centric business models, and services dominant logic, etc.). On Monday 13th and Tuesday 14th May, we will follow the established format of a single stream where all contributors have an opportunity to present to the whole conference audience and engage in both structured and semi-structured panel sessions to discuss their work. The programme is designed to encourage extensive debate and bridge research theory and industrial practice. The conference will also feature keynotes from senior executives at leading manufacturing businesses. We will also dedicate some sessions to the early-stage research which comprise interactive keynotes by leading academics in the field, debates around emergent research themes, and poster reviews of proposed projects and doctoral theses.

Co-Chairs of the 2024 Spring Servitization Conference

FULL PAPERS – DAY ONE AND TWO.

CASE STUDIES AND EMPIRICAL RESEARCH / THEORY AND FRAMEWORKS.

ECOSYSTEMS, VALUE NETWORKS AND DIGITALISATION.

GRAND CHALLENGES, THE CIRCULAR ECONOMY AND NET-ZERO.

EXECUTIVE Papers– RESEARCH POSTER SESSIONS DAY ONE AND TWO.

Session One.

Session Two.

PRODUCT-AS-A-PRODUCT MASQUERADING AS PRODUCT-AS-A-SERVICE

Prof. Dr Shaun West and Prof. Paolo Gaiardelli

ABSTRACT

Purpose: this study explores service orientation in businesses, using a car rental experience to evaluate how Product-as-a-service (PaaS) models often blur the lines between traditional offerings, transitioning from services to products in consumer perception.

Design/Methodology/Approach: A longitudinal single-case approach is used to examine a PaaS model, while a journey mapping approach is employed to analyse customer experiences. Principles of service-dominant logic and service quality are introduced to understand value co-creation dynamics.

Findings: The analysis of the results suggests five key service quality failures, including communication barriers, inefficient change management, coordination issues, problem resolution inadequacies, and unclear policies. Through the lenses of product—and service-dominant logic, the outcomes underline the role of value co-creation and customer involvement in the successful implementation of service-oriented business models.

Originality/Value: through examination of barriers to adopting PaaS models, this work emphasises the pivotal role of organisational culture in delivering authentic service excellence amidst digital transformations. Moreover, it offers insights into the complexities of PaaS implementations, highlighting the importance of maintaining a service-oriented culture.

KEYWORDS: Product as a Service (PaaS), service-dominant logic, barriers, longitudinal case study.

1. INTRODUCTION

This study is inspired by the personal experiences of one of the author's unsatisfactory experiences with a long-term car rental service. It delves into the evolving business paradigm of "everything as a service." In particular, the study focuses on Product-as-a-Service (PaaS), a special form of Product-Service System which merges tangible products with intangible services to fulfil specific customer outcomes (Kesavapanikkar et al., 2022). While gaining popularity across various industries, this concept reveals a widespread misunderstanding among firms regarding the nature of services, which, unlike tangible products, are deeply intertwined with the cultural ethos of the provider organisation (D'Agostin et al., 2020; Gebauer et al., 2017). This cultural dimension significantly impacts service design, delivery, and consumer perception (Tukker & Tischner, 2017).

Based on this premise, our paper aims to understand service orientation issues in businesses. Through a single case study, we seek to understand how advanced service models such as long-term rental blur the lines between traditional product offerings and service delivery, often returning to product-dominant thinking.

The research question guiding our study is: "*when does a product-as-a-service model transcend its service characteristics and become a product?*".

2. LITERATURE REVIEW

The literature explores the shift from product to service-dominant business models, emphasising the integration of Products and Services to understand Product-Service Systems (PSS) and, in particular, Product-as-a-Service. It discusses challenges and opportunities in implementation before describing the importance of value co-creation and customer involvement in service delivery, highlighting a move towards more interactive and customer-centric business practices.

2.1 Integration of Products and Services

Integrating products and services through Product-Service Systems (PSS) and, in particular, Product-as-a-Service (PaaS) models represents a transformative shift in how businesses deliver customer value (Pan & Nguyen, 2015). This evolution emphasises a holistic approach that melds tangible products with intangible services to achieve personalised customer outcomes, fostering longer-term engagements rather than traditional product ownership (Baines et al., 2007). Such integration caters to specific needs and promotes sustainability by extending product lifecycles and enhancing resource efficiency (Hirschl et al., 2003; Petrolo et al., 2023). The move towards PSS and PaaS challenges conventional consumption and business models by prioritising functionality, personalisation, and sustainability (Tomiyama, 2001). This approach requires a significant organisational culture and practices shift from product-centric to service-centric models (Nuutinen & Lappalainen, 2012). Implementing these systems involves overcoming hurdles in product design, service delivery, and the seamless integration of both components to ensure a cohesive customer experience (Cavalieri & Pezzotta, 2012). Moreover, it necessitates organisational adaptations and a re-evaluation of traditional business metrics to accommodate the nuances of service delivery and customer engagement (Jaakkola & Alexander, 2014; Mourtzis et al., 2018).

The service culture within industries plays an important role in successfully delivering PaaS and PSS (Morelli, 2006). A strong service culture, characterised by employee empowerment and a focus on customer satisfaction, is essential for fostering a competitive advantage. Specialised services demand more customisation and customer interaction, underlining the importance of skills, knowledge, and value co-creation between service providers and customers (Mont, 2002). This co-creation process is central to the Service-Dominant (S-D) Logic, which views value creation as an interactive, context-specific activity that transcends the traditional goods-centric perspective (Vargo & Lusch, 2004). Integrating products and services through PSS and PaaS models challenges traditional business and consumption models (Tukker, 2015). It allows businesses to innovate, enhance sustainability, and deepen customer relationships. It requires a fundamental shift in organisational culture, a reimagining of value creation, and a commitment to understanding and meeting customers' evolving needs and expectations.

2.2 Challenges and Opportunities in Implementation

Implementing Product-as-a-Service (PaaS) models embodies a strategic shift from traditional business paradigms towards more integrated, customer-centric solutions. While promising enhanced value for customers and sustainability benefits, this transition poses several challenges and opportunities for organisations (West et al., 2022). One of the primary hurdles is integrating product design and service provision, which requires a profound rethinking of organisational processes and capabilities. The complexity of effectively combining tangible products with intangible services necessitates innovative design and operational approaches and a cultural shift within organisations. Moving from a product-centric to a service-oriented model challenges traditional revenue streams and necessitates a new understanding of value creation and capture (West et al., 2019). This shift often demands significant organisational adaptations, including changes in mindset, skills development, and possibly restructuring, to support a service-centric approach (West et al., 2021).

Implementing PSS and PaaS introduces challenges related to maintaining long-term customer engagement and ensuring continuous value co-delivery. Tailoring solutions to meet specific customer outcomes and emphasising functionality over product ownership requires a dynamic and responsive strategy that can adapt to changing customer needs and market conditions (Baines et al., 2009). However, these challenges also present opportunities. Focusing on sustainability through extended product lifecycles and resource efficiency aligns with growing environmental concerns and opens new market opportunities (Tukker, 2015). Furthermore, emphasising customer outcomes and long-term engagement offers a pathway to differentiate offerings in crowded markets, fostering deeper customer relationships and loyalty (Opresnik & Taisch, 2015). Successfully navigating the transition to PSS and PaaS can provide a sustainable competitive advantage, positioning companies as leaders in innovation and customer satisfaction (Guo et al., 2015).

2.3 Value Co-creation and Customer Involvement

The concepts of value co-creation and customer involvement, important within servitization-based business models, represent a significant departure from traditional business approaches (Liu et al., 2018). This paradigm shift, advocated by the Service-Dominant (S-D) Logic, posits that firms do not merely deliver value but are co-created through actor and beneficiary interactions (Vargo & Lush, 2004). This perspective emphasises the critical role of customer involvement in shaping service experiences, fostering a more dynamic and collaborative approach to value creation. In the context of servitization, value co-creation underscores the importance of moving beyond a goods-centric view, focusing instead on the coalescence of products and services to meet specific customer outcomes (Prahalad & Ramaswamy, 2004). It encourages organisations to engage customers directly in the design and delivery of services, allowing for a deeper understanding of their needs and expectations. This interactive process enhances personalisation and satisfaction and aligns with sustainable consumption patterns by emphasising functionality and long-term engagement over mere product ownership (Borg, 2020).

The emphasis on customer involvement in shaping service experiences challenges organisations to rethink their operational models and customer engagement strategies. It necessitates the development of platforms and systems that facilitate ongoing dialogue and feedback, enabling continuous improvement and adaptation of offerings (Gaiardelli et al., 2021). Furthermore, it highlights the need for an organisation's strong service culture, characterised by employee empowerment and a focus on customer satisfaction, to manage this interactive value-creation process effectively. Value co-creation and customer involvement within PSS and PaaS models offer a pathway to achieve sustainable competitive advantages, fostering innovation and deepening customer relationships (Liu et al., 2019). This approach challenges conventional business models and presents opportunities for organisations to differentiate themselves in an increasingly service-oriented economy.

Table 1: A comparison of product- and service-dominant logic

Dimension	Product dominant	Service dominant
Initiation	Centrally initiated, structured, technology driven: new technology or new use of existing technologies	Locally initiated, close to customers, ad hoc: new value creation potential identified
Strategic perspective	Inside-out	Outside-in
Key asset	Patents	Customer knowledge
Development	Closed process, involving R&D and production	Open process, involving sales companies and service organizations
Tools and methods	Stage-gate models	Service blueprinting, service engineering
Critical resources	Production facilities, components, subsystems, supply chains	Knowledge and skills, relationships and networks, including the resources of service partners
Actors	R&D and other central units and functions	Local and central units, customers, partners/dealers
Marketing and sales	Market to (push): management of customers and markets	Market with (pull): collaboration with customers and partners
Result	A tangible offering that is easy to understand	An intangible service that is difficult to visualize

3. METHODOLOGY

This study employs a single case longitudinal approach to delve into a Product-as-a-Service (PaaS) instance over four years, facilitating a thorough examination of its evolving dynamics and customer engagement. This methodology, aligned with Yin's (2009) advocacy for case studies to explore real-

life phenomena within defined boundaries, allows for an in-depth analysis of the intricacies of PaaS models.

The principal data collection method is journey mapping, which involves tracing the customer's experience from start to finish. From this, the key scenes or situations are distilled. This technique, which captures both tangible and intangible service aspects, is pivotal for offering a comprehensive view of customer interactions with the PaaS, as supported by Stickdorn and Schneider (2012). This longitudinal perspective is critical for observing shifts, adaptations, and the unfolding customer relationship with the PaaS, providing insights into long-term engagement and value realisation.

Journey mapping focuses on both product and service attributes of the PaaS model, aiming to dissect how these elements synergise to enhance the overall value proposition. Attributes such as tangibility, customisation, customer interaction, and value creation are examined, drawing from the principles of service-dominant logic (Vargo & Lusch, 2004) and established characteristics of products and services (Zeithaml et al., 1985; Kotler & Keller, 2016). Comparisons with interview outcomes from the service provider and partners will illuminate the congruencies or discrepancies between the perceived service experiences from both provider and customer viewpoints.

This analysis will identify patterns, anomalies, and insights related to customer experience and the value co-creation process, leveraging a product- and service-centric perspectives framework. This strategic approach facilitates a nuanced exploration of the balance between product and service elements within the PaaS model, contributing to the broader understanding of service-centric business paradigms.

4. CASE DESCRIPTION

This study examines the evolving business paradigm of "everything as a service" through the lens of one of the authors' long-term car rental experiences. Table 2 describes the key scenes and each author's experience. The motivation for the long-term car hire provides a contextual background to the case: "*I decided to try a long-term car rental service after a frustrating experience with my old car. The car was reliable, and the Japanese manufacturer provided excellent service. However, the problem wasn't with the car but the insurance company's poor handling of an accident I was involved in. Despite being the victim, the insurance only partially covered the damages, which led me to choose the rental service*".

Table 2: Long-term car rental experience based on key touchpoints

Key scenes	Details
Initiation	I discovered the rental deal unexpectedly at a supermarket. A partner company, usually catering to business clients, offered an attractive long-term rental to private customers. I found this convenient, with everything from maintenance to insurance handled by the rental company for a fixed monthly fee.
Early challenges	A significant insurance brand acquired the rental company four years into the contract, leading to noticeable changes. Contacts changed frequently, local service centres closed, and there needed to be more availability for assistance. The most significant issue arose with the car's mandatory inspection, which needed to be better scheduled and at an inconvenient location. I eventually resolved these issues, but they were just the beginning.
Contract renewal	As the five-year contract ended, I chose to renew it despite some issues, partly out of convenience. Close to the new car's delivery, I was informed of a three-month delay due to electronic component shortages. This delay was extended, and communications about the new delivery date needed to be more consistent.
Delivery complications	Almost a year late, the delivery was scheduled at a dealership 50 km away, with a tight timeframe to avoid extra charges. The commercial representative needed to be more responsive, and there needed to be more clarity about where to return the old car. This was eventually sorted, but the delivery was delayed again due to a battery issue in the new car.
Further difficulties and billing Issues	Coordinating the new delivery date was challenging due to poor communication and separate handling of the old and new car processes. To make matters worse, I was billed for both cars during the delay. Eventually, the company acknowledged this and adjusted future bills.

Key scenes	Details
Towards final delivery	Administrative errors continued, such as incorrect residence records and billing mistakes. The company's acquisition caused significant integration issues.
Final delivery	After an extended delay, I finally got the new car. The regional centre accepted the old car without a thorough check, possibly to expedite the process. However, I was left with winter tires in the summer and am still waiting for the swap six months later

5. DISCUSSION

The discussion evaluates the breakdowns in service quality presented in the case study, analysing the roots of these failures and proposing corrective strategies. It places these findings within the frameworks of product and service-dominant logic, aiming to address the research question effectively. This approach seeks to provide insights for practical management improvements and identify the theoretical implications.

5.1 Service quality failures

The analysis of service quality failures within a car rental service delineates five principal themes that collectively underscore systemic shortcomings in customer service and operational management:

i. **Poor communication and responsiveness** highlight customers' challenges in interacting with company representatives. This communication barrier resulted in numerous unaddressed customer inquiries and complaints, evidencing a significant gap in the company's customer engagement strategy.

ii. **Lack of coordination and integration** leads to the disconnection between various service components such as vehicle maintenance, insurance, and billing. This fragmentation led to a disjointed customer experience, underscoring the necessity for a more integrated approach to service delivery.

iii. **Inefficient management of changes** emerges from the company's acquisition, instigating alterations in contacts and procedural frameworks. The lack of effective management during this transitional phase precipitated customer confusion and inconvenience, pointing to deficiencies in the company's change management capabilities.

iv. **Inadequate problem resolution** reflects the company's failure to promptly and satisfactorily address and rectify issues, such as delayed vehicle deliveries and billing discrepancies. This inefficacy in problem-solving highlights a critical area of improvement in customer service and operational efficiency.

v. **Unclear policies** refer to the ambiguity and erratic application of the company's vehicle maintenance, contract renewal, and billing policies. This inconsistency contributed to customer frustration and misunderstandings, indicating a need for clearer, more consistent policy communication and implementation.

5.2 Cause of the service failures

The underlying failure mechanisms and remedial actions for the service failures within the car rental service case study can be categorised into five themes (Table 3).

5.3 Assessment of the case based on product- and service-dominant logic

This section evaluates the insights through product- and service-dominant logic lenses, exploring the integration of products and services, the challenges and opportunities encountered, and the role of value co-creation and customer involvement. This assessment is based on the literature.

Integration of products and services: the case underlines the transformative potential of seamlessly integrating products with services to create more customer value. However, it reveals that achieving such integration demands substantial shifts in organisational practices and mindset, moving away from traditional product-centric approaches to embrace service-dominant logic that prioritises customer outcomes and sustainability.

Challenges and opportunities in Implementation: implementing a service-dominant model presents notable challenges, including the need for cultural and operational shifts within

organisations. The case highlights how these challenges, if not adequately addressed, can lead to service failures. Conversely, it also showcases the opportunities for differentiation and customer loyalty that can arise from successfully adopting a service-oriented approach.

Table 3: Underlying failure mechanisms and remedial actions for the service failures

Theme	Cause of failure	Remedial actions
Communication and responsiveness	Lack of efficient communication and timely responses	Implement clear communication channels, automated updates/reminders, and train customer service teams.
Coordination and integration	Disjointed processes and poor integration across departments	Review and integrate management and operational processes, ensuring cohesion and seamless transitions.
Management of changes	Inadequate management of customer data and service history Insufficient focus on customer satisfaction	Regularly update and audit CRM systems for better personalization and service history management. Train employees at all levels to prioritize customer needs and satisfaction
Problem-solving	Lack of skills in communication and problem-solving	Introduce robust training for employees, focusing on effective communication, problem-solving, and product knowledge.
Service polices and standards	Lack of standard procedures and approaches across the service chain	Drafting clearer documents for customers and implementing consistent internal procedures, along with all the stakeholders.

Value co-creation and customer involvement: central to the service-dominant logic, the case emphasises the importance of actively involving customers in the service-creation process. It points out that failing to engage customers and co-create value undermines the service experience and diminishes the potential for sustainable customer relationships and loyalty. Effective customer involvement facilitates personalised services and enhances satisfaction, underlining the need for businesses to adopt practices that encourage customer participation and feedback.

The switch from a subscription (i.e., PaaS) model only brings a change to a customer-centric business model focused on delivering customer experiences if there is a culture change and focus on service delivery. Furthermore, firms may consider PaaS a revenue model change that helps them sell more products—changes to their culture, business processes, and perhaps to the employees' value belief system.

5.4 Identification product-as-a-product masquerading as product-as-a-service

The research question of this paper probes the threshold at which the essence of a service, characterised by its intangibility, heterogeneity, perishability, and inseparability, begins to embody product-like attributes—tangibility, standardisation, and durability. In the study context, transitioning from a service to a product-centric model is closely tied to the customer's perception and the firm's delivery mechanism. The PaaS model, which integrates tangible products with intangible services to fulfil specific customer outcomes, often blurs these lines. It challenges traditional consumption and business models by prioritising functionality, personalisation, and sustainability over product ownership.

However, this study finds that what is often marketed as PaaS may revert to a product-centric approach. In attempting to make the service efficient from a Service-as-a-Product (SaaP) perspective, the risk becomes that of taking an essentially efficiency-centred perspective, thus failing to sustain the service-centred values (Wirtz et al., 2021). Indeed, as many authors claim, orientation towards efficiency can affect customer expectations and employee engagement, thus creating large distances between service providers and customers (Andreini et al., 2015).

This misalignment, where the service is not significantly differentiated from a product except in minor service attributes, suggests that the model transcends its service characteristics when the implementation fails to leverage the core advantages of service orientation—such as customisation, ongoing customer engagement, and value co-creation. Therefore, the distinction between PaaS

transcending to a product occurs when the operational execution and cultural orientation of the company do not align with the service-dominant logic, emphasising relational exchanges and mutual value creation. Instead, it defaults to a goods-dominant logic, focusing on discrete transactions and product exchanges, thereby undermining the service qualities that define PaaS.

5.5 Management considerations

A key finding of this study is identifying the revenue model as subscription-based, a characteristic typically associated with service offerings. This model highlights a shift from traditional one-off transactions to more continuous customer engagement, central to service-oriented business models.

Throughout the four-year journey, there were numerous instances where the customer experienced poor service. These instances ranged from inadequate response times to issues in service quality, including but not limited to a lack of attention to customer requests, incorrect or misleading information, weak commitment of front office staff, and reduced accessibility of the service, thus reflecting a disconnect between the service promise and its delivery. Such findings indicate challenges in maintaining service consistency, an issue noted in service literature (Grönroos, 2007). Interestingly, the study finds that, in this case, what was positioned as PaaS was more akin to a Product-as-a-Product (PaaP) with some minor service attributes. This misalignment between the model sold and the actual customer experience raises questions about the authenticity and implementation of PaaS models in practice.

An underlying factor identified was the supplier's lack of ownership regarding the customer's (beneficiary's) experience. This lack of ownership, due to the presence of too many actors, often uncoordinated with each other and belonging to businesses where the relationship with the customer often concludes with the sale of a contract, was exacerbated by supplier firm contacts and ownership changes, which diluted customer focus and relationship continuity. The findings also reveal a loss of empathy from the supplier's side in understanding the impact of their service on the beneficiary. This lack of empathy and understanding manifested in diminished service quality and a failure to appreciate the customer's perspective, a key component in successful service delivery (Berry et al., 1988). Each interaction during the long-term relationship was treated as a standalone, one-off transaction rather than part of a continuous service journey. This approach contradicts the essence of service-dominant logic, which emphasises ongoing relationships and value co-creation (Vargo & Lusch, 2004).

5.6 Theoretical contributions

The study's findings contribute to the challenges and practical realities of implementing PaaS models in a real-world setting. The transition from a product-centric to a service-centric business model is a complex process beyond merely adopting a subscription-based revenue model. It necessitates a fundamental cultural shift within the organisation, emphasising customer empathy, sustained relationship building, and a deep-rooted commitment to service excellence. The case analysed in this study exemplifies the risks associated with superficially adopting a service model without integrating the core principles and practices essential to a service-oriented culture.

A critical observation from the case is that PaaS does not inherently equate to a service when the firm's culture needs a service mindset. This scenario highlights a significant risk as businesses increasingly gravitate towards digital and self-serve hybrid offerings. While offering efficiency and scalability, the digital transformation in service delivery may inadvertently lead to a depersonalisation of customer interactions if not managed with a service-oriented approach. Considering these findings, it becomes evident that there are distinct categories within the modern business landscape:

— Products: this category includes traditional and digital products characterised by tangibility or standardisation.
— Services: encompassing both traditional and digital services, this category is defined by its intangibility and the emphasis on customer experience and value co-creation.

— Service-product hybrid: in this model, a service is delivered in a manner akin to a product. This model poses unique challenges, as it may need a more personalised and empathetic approach that is central to effective service delivery.

The distinction between these categories underscores the need for businesses to carefully consider their strategic approach to service delivery, especially in digital transformation. As companies navigate this landscape, maintaining a service-oriented culture becomes paramount to ensure that the essence of service excellence is preserved in the pursuit of digital efficiency.

The findings and analysis underscore the complexity and nuances of PaaS models, particularly in the context of organisational culture and customer engagement strategies. As businesses evolve in the digital age, maintaining a balance between technological efficiency and service excellence will be critical in delivering value to customers and sustaining long-term business success.

6. CONCLUSIONS, LIMITATIONS AND RECOMMENDATIONS

The case demonstrates that transitioning to subscription-based models necessitates a cultural and business shift towards prioritising the service experience, aligning with service-dominant (SD) logic. It marks a move from episodic transactions to continuous customer engagement, which is vital in service-centric businesses. The case study identifies a consistent shortfall in service quality over four years, highlighting a gap between promised and delivered services. This discrepancy suggests a switch from a Product-as-a-Service (PaaS) model back to a product-oriented approach with a limited service focus, challenging the efficacy and genuine implementation of PaaS strategies in this instance.

A significant issue was the supplier firm's need for ownership over the customer experience, exacerbated by numerous actors and changes in supplier firm contacts, diluting customer focus and relationship continuity. The case highlights a loss of empathy from the supplier's side, manifesting in diminished service quality and a failure to appreciate the customer's perspective, which is crucial for successful service delivery.

The study concludes that PaaS only inherently equates to a service if the firm's culture has a service mindset, emphasising the risk of depersonalisation in customer interactions due to digital transformation. It categorises modern business landscapes into products, services, and service-product hybrids, underlining the importance of maintaining a service-oriented culture to preserve service excellence amid digital efficiency. The findings demonstrate the complexity and nuances of PaaS models, stressing the importance of balancing technological efficiency with service excellence to deliver customer value and achieve long-term business success.

6.1 Limitations

The study's limitations stem from its focused scope, which may restrict its broader applicability. This approach could hinder the generalisation of the findings. The reliance on qualitative data – primarily from one of the authors – introduces a risk of subjective interpretation, potentially influencing the study's objectivity. These constraints suggest further research to validate and expand upon the initial insights.

6.2 Recommends

Recommendations for future work based on this case study focus on several key areas to improve understanding and implementation of Product-as-a-Service (PaaS) models. These recommendations include:

— Further Research on Organizational Culture and Service Orientation
— Exploration of Customer Engagement and Value Co-creation in Digital Transformations:
— Investigation of Service Consistency and Quality in Long-term Relationships
— Assessment of the Impact of Digital and Self-Serve Offerings on Customer Interactions
— Study of the Risks and Challenges in Adopting Service-Dominant Logic:

These recommendations aim to address the gaps identified in the study and contribute to the broader understanding of implementing and sustaining PaaS models in various industries.
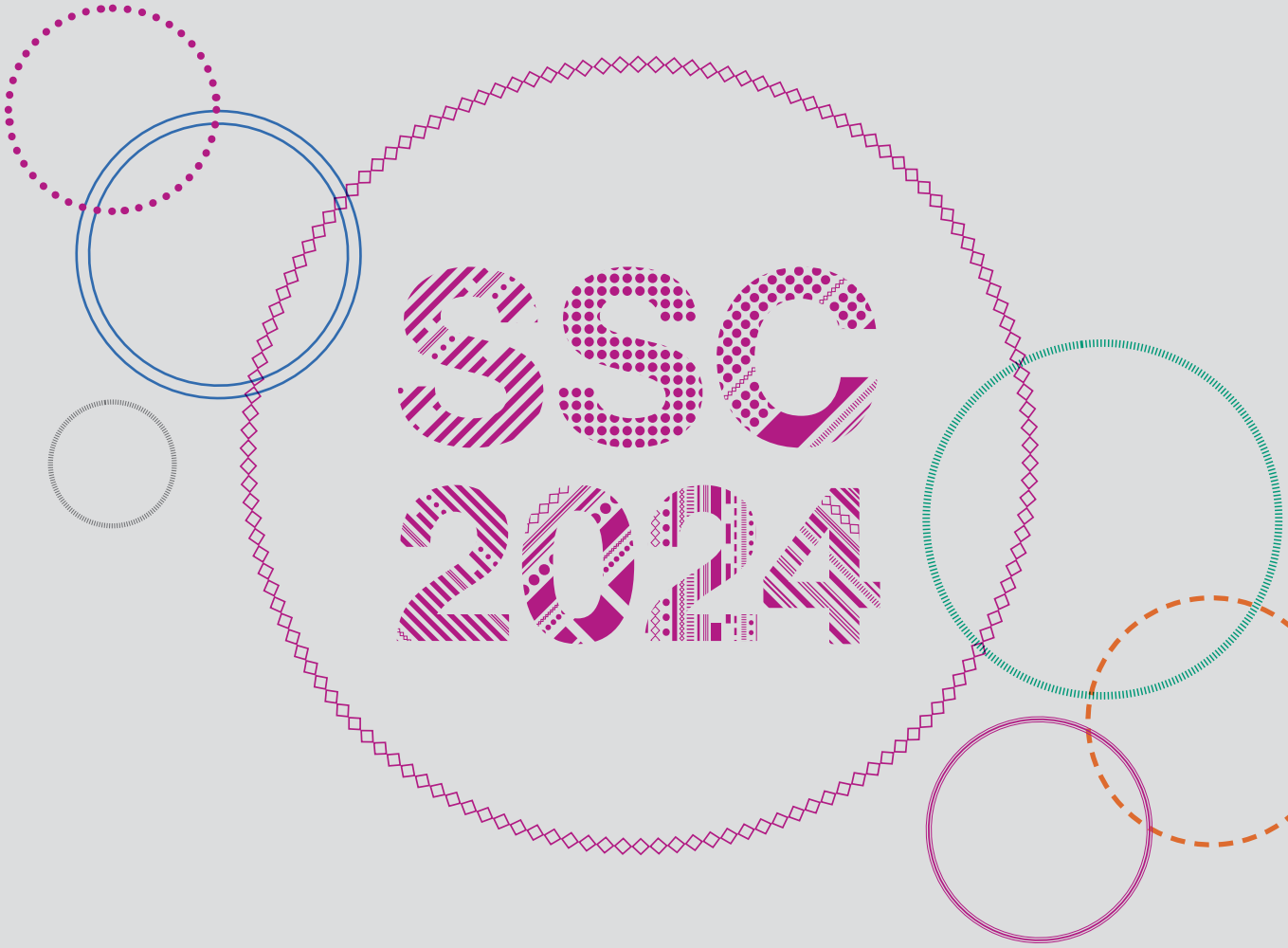
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