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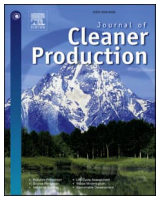

Aligning servitization and circularity: The role of institutional confluence in sustainable business models

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ABSTRACT

This conceptual study explores the alignment between servitization—a shift from selling products to offering services—and circularity principles. The study introduces institutional confluence—a configuration of institutional pressures that enhance business model legitimacy to stakeholders and facilitate operational success—which can serve as a driver aligning servitization with circular principles. Institutional confluence has the capacity to trigger novel business models, shape resources and processes, enhance value capture, and inhibit unsustainable business models. The study develops the concept and underscores the role of institutional confluence in promoting this alignment and subsequent environmental sustainability. The article utilizes illustrative case examples from servitization and circular business models to develop the concept of institutional confluence serving sustainable servitization. The study offers strategic insights for managers and policymakers, emphasizing the need for a holistic approach that integrates servitization and circularity from the outset of business model design. It advocates for policies that leverage regulatory, normative, and mimetic pressures to foster sustainable business practices. The article contributes to the servitization literature by delineating the mechanisms through which institutional forces facilitate or hinder the integration of servitization and circularity, offering directions for future research to explore these dynamics across different contexts and industries.

1. Introduction

This conceptual article explains how institutional forces align servitization business models with the principles of circularity. We introduce the concept of institutional confluence, *a configuration of institutional pressures that enhance business model legitimacy to stakeholders and facilitate operational success*. We argue that institutional confluence has the potential to intensify servitization and facilitate circular growth.

Businesses are increasingly adopting service-focused business models, driven by the lure of consistent income and heightened customer retention (Gebauer, et al., 2010), a strategy known as servitization (Ulaga and Reinartz, 2011; Vandermerwe and Rada, 1988). Concurrently, the argument for sustainability has never been more compelling (Schillebeeckx, et al., 2022), with circularity emerging as a pivotal concept for resource efficiency and sustainable value creation (Corvellec, et al., 2022; Frishammar and Parida, 2019; Bocken et al., 2018; Kjaer et al., 2018). Despite the synergistic relationship between servitization and circularity (Frishammar and Parida, 2019; Kuhl et al., 2023), both of which can advance resource efficiency, the dynamics of their integration remain underexplored.

Research recognizes that external, institutional forces—ranging from regulations to societal norms and mimetic pressures within the industry—affect businesses in diverse ways (Meyer and Rowan, 1977; Scott, 1995, 2005; DiMaggio and Powell, 1983). Research also shows that businesses seeking to implement servitization should be prepared to collaborate with others within their ecosystem and institutional environment (Vargo and Lusch, 2016; Tronvoll et al., 2020). That need directs attention to how external institutional pressures intersect with the internal workings of the firm (Vargo and Lusch, 2016; Tronvoll et al., 2020; Töytäri et al., 2018). Institutional pressures currently reflect a collective movement toward sustainable economic practices and resource stewardship (Bustinza, et al., 2024; Swannell et al., 2021;

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Masterson and Shine, 2022). At the same time, customers are increasingly supporting sustainability and servitization (Morewedge, et al., 2021; Kostiainen and Tuominen, 2020; Tinnila, 2016; Sharma and Sijariya, 2023). Accordingly, the current research responds to the call to examine the institutional forces affecting servitization beyond internal firm dynamics (Töytäri, et al., 2018). Despite the systemic foundations of servitization logic (Vargo and Lusch, 2016), much of the discourse around servitization concentrates on the internal dynamics of firms, suggesting that resource-efficient business models stem from in-house resources or innovations (Raddats, et al., 2019; Nag et al., 2021; Urbinati et al., 2017), albeit there are a few exceptions (Makkonen, et al., 2022; Skylar et al., 2019; Turunen and Finne, 2014). While we agree that internal dynamics are important, the mainstream perspective neglects the critical influence of external institutional pressures and the broader ecosystem within which servitization operates.

This article first examines how well servitized business models currently align with the key aspects of circularity. Using illustrative case examples, we conceptualize how institutional forces help to align servitization business models with facets of circularity and sustainability. Hence, the main question we address is: *What is the role of institutional confluence in shaping servitized circular business models?*

The article contributes to the servitization literature by exploring the alignment between servitization and circularity. It highlights the importance of integrating sustainability considerations from the inception of service-based business model designs. The pivotal contribution lies in the development of the concept of institutional confluence. We identify its roles and how businesses can navigate and leverage such pressures to align with circularity and sustainability goals. Consequently, the results enrich the discourse on the potential for resource-efficiency and sustainability with servitization. We also illustrate how external pressures can trigger new business models, shape resources and processes, enhance the ability to capture value and render certain business models obsolete.

The article also offers strategic insights for managers and policymakers, emphasizing the importance of aligning business models with institutional expectations to foster sustainability. Managers are urged to cultivate strategic foresight and consider the interplay of regulatory, market, and social pressures in their servitization endeavors. By embracing a holistic approach to sustainability, firms can shape customer demand and encourage industry-wide adoption of servitization models aligned with circularity principles of resource efficiency. Policymakers are encouraged to integrate normative and mimetic pressures into regulatory controls, fostering societal awareness and incentivizing businesses toward sustainable practices.

The remainder of the article is organized as follows: First, we discuss the alignment between servitized business models and circularity. We then introduce and develop the concept of institutional confluence and discuss its role in triggering, shaping, enhancing, or inhibiting servitized business models. Finally, we discuss the implications of our conceptual exploration and propose directions for further research.

2. Alignment between servitization and circularity

Servitization business models have the potential to advance circularity, with distinct advantages in promoting product longevity, repairability, and upgradability (Kuhl, et al., 2023). Prior studies highlight the alignment of those models with circularity principles (Frishammar and Parida, 2019; Kuhl et al., 2023), which underpin the transition toward sustainable practices. However, we argue that there is a critical disconnect between the commonly implemented servitization business models and the actual resource-efficient principles of circularity. Consequently, despite their related structures and aims, servitization logic and circularity are not always aligned to the extent that proponents of resource efficiency and waste management expect.

2.1. Servitization business models and the waste hierarchy

Servitization-based business models involve the integration of services into product offerings to create added value (Vandermerwe and Rada, 1988). The objective is to shift from merely selling products to providing comprehensive solutions. This article adopts the categorization provided by Huikkola and Kohtamaki (2018), which delineates servitization into four primary business models: product, service-agreement, process-oriented, and performance-oriented. We argue that it is important to understand how these models fit into the waste hierarchy, which is one of the guiding principles in circularity, prioritizing actions in a hierarchical order based on their environmental impact (Dong, et al., 2021).

Product Business Models represent the traditional model of selling physical products to customers. The revenue primarily comes from the sale of the product itself, encouraging a focus on selling as much product as possible. After-sales services, such as maintenance and repair, are limited, and the customer relationship remains transactional. Consequently, this is the baseline model, often criticized for contributing to the take-make-waste paradigm. Within this model, customers pay for the ownership of the product and essentially the value-in-exchange. The material waste of the product is the responsibility of the customer. Contemporary extended producer responsibility (EPR) legislation has shifted much of the liability for the cost and management of product waste to manufacturers (OECD, 2024).

Such legislation still rests on circular practices attributed to the recycling and recovery of energy from material waste. Such models thus align with the latter cascades within circularity, lower down the waste hierarchy (Dong, et al., 2021), as reflected in Fig. 1. In contrast, earlier cascades prioritized resource efficiency through sharing and maintaining, contributing to more sustainable outcomes in the circular economy.

An illustrative example might be a traditional car dealership focused on selling cars to customers. The revenue is generated from the physical sale of vehicles, although the dealership may offer limited post-sale services such as warranty repairs or maintenance. The customer relationship is transactional; customers visit the dealership to purchase a car, and interactions are mainly focused on completing the sale. Once the customer purchases the car, they own it, and the responsibility for maintenance, repairs, and eventual disposal rests with them. The product business model perpetuates linear cycles in contrast to more contemporary models offering a more servitized approach to car use through car-sharing, leasing, and service agreements.

Service-Agreement Business Models offer a product alongside service agreements or (extended) warranties. Revenue is generated through the sale of the product and ongoing service agreements. Customer relationships are sustained through service delivered and support. The benefits for manufacturers include securing additional revenue from service agreements over extended periods. Depending on the type of agreement, the manufacturer may also earn from additional services extending beyond the scope of a service agreement. Hence, it is in the manufacturer's interest to minimize the cost of servicing and to design easily repairable and serviceable products (Huikkola and Kohtamaki, 2018).

An example can be found within the electric vehicle (EV) automotive industry. Tesla, the EV company, offers a comprehensive service agreement to its customers that covers maintenance, repairs, and software updates for an extended period. Customers not only buy the physical electric car but also subscribe to ongoing support and updates to ensure the optimal performance and longevity of their vehicle. Tesla's service-agreement model extends beyond traditional warranty coverage, providing proactive maintenance and remote diagnostics through over-the-air updates (Tesla, 2024). This approach aligns with the principles of servitization by emphasizing long-term customer relationships and continuous improvement of the product/service ecosystem. Tesla's incentive to design for durability and ease of maintenance is reinforced by its service-oriented business model, which

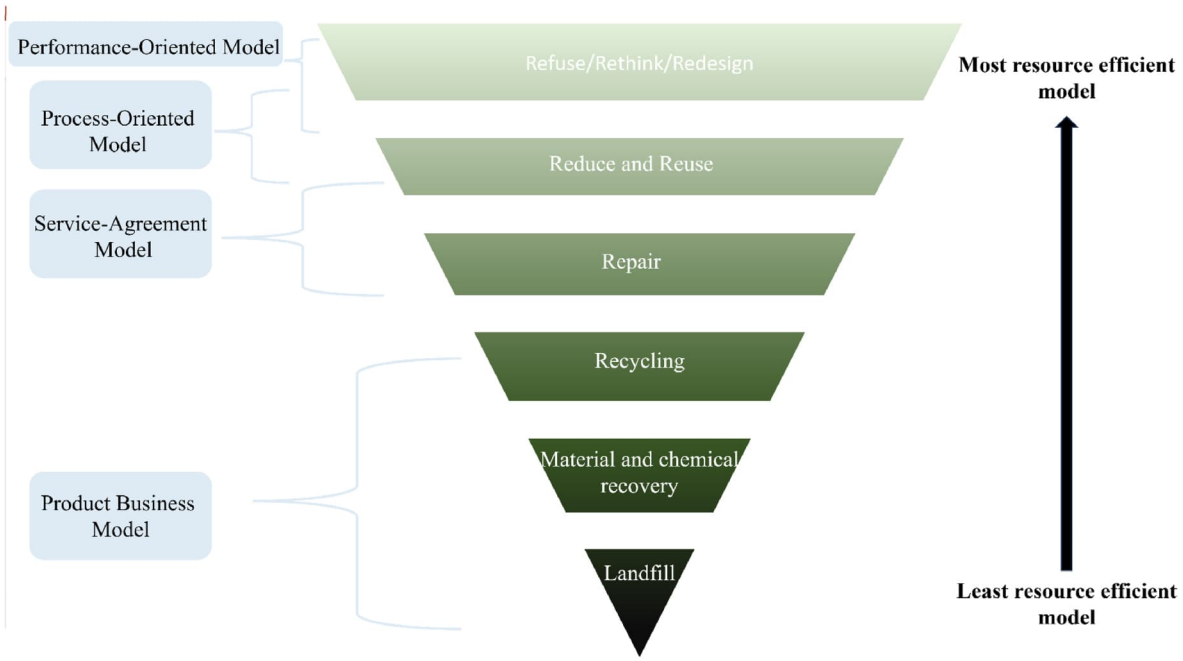

Fig. 1. Servitized circular business models and the waste hierarchy.
Source: Author's own elaboration, based on previous literature (Dong et al., 2021; Vendrell-Herrero et al., 2022).

means the firm bears the responsibility for ensuring customer satisfaction and vehicle performance throughout the ownership lifecycle. The model can be attributed to earlier cascades within the circular economy, such as *repair*, *maintain*, and *prolong*, due to the greater repairability of the product design. Such models are thus often more sustainable than the more traditional product-based business models and are placed higher up the previously acknowledged waste hierarchy, represented in Fig. 1 (Dong, et al., 2021).

Process-Oriented Business Models center on delivering a specific product function to customers. Customers pay for the availability rather than owning the product, thus focusing on the value-in-use principle. The focus is on delivering efficient and effective processes for the customer. Ownership of the tangible product is retained by the service provider, who sells the function of the product, often through sharing, pooling, and leasing designs. This business model links with circular objectives of reusing and renewing products.

An example of such a business model with sustainability and resource efficiency built into the core of the company is the clothing rental company, *Rent the Runway*. Rent the Runway allows customers to rent high-quality, designer clothing and accessories for a fraction of the cost of purchasing them outright. Customers pay for the experience of wearing fashionable attire for a specific occasion or period rather than owning the garments themselves. Ownership of the clothing items remains with Rent the Runway, which leases out the function of the clothing to customers (Rent the Runway, 2024). The process-oriented business model promotes sustainability by extending the lifespan of clothing items and reducing the demand for new garments. By renting instead of purchasing, customers can access a diverse range of clothing options without contributing to the overconsumption and waste associated with fast fashion. Rent the Runway's model aligns with circular principles by encouraging the reuse and sharing of clothing resources, thereby minimizing the environmental impact of fashion consumption. The model would thus sit high in the waste hierarchy (Dong, et al., 2021).

Finally, *Performance-Oriented Business Models* are relatively scarce (Nyvall, et al., 2022). This model emphasizes providing customers with a specific level of performance or results. Revenue is often generated based on achieving predefined performance metrics. The focus is on ensuring that the customer's needs and objectives are met. In this instance, products are entirely replaced by services. This business model potentially links with circularity by reducing the need for the products as product use can be optimized and shared more efficiently than in the process-oriented model. While the customer only pays for the outcome, the products can also be (eco)designed differently to be used by skillful operators with less need to consider aesthetics or status-driven needs (Sjödin, et al., 2020).

Although performance-oriented models are not as established as the types mentioned above, an example of this can be found in the lighting-as-a-service concept offered by companies such as Signify. Instead of selling light bulbs or fixtures, Signify provides lighting solutions based on predefined performance metrics. Customers pay for the outcome—the amount and quality of light rather than purchasing and maintaining the physical products. Signify thus has the incentive to design and optimize products with longevity, energy efficiency, and minimal environmental impact (Signify, 2023). This model excels by considering the waste hierarchy and cascading effects within the circular economy (Dong et al., 2021), as depicted in Fig. 1.

Servitization strategies that prioritize reuse, refurbishment, or remanufacturing of products promote the principles of the waste hierarchy by extending the lifespan of products and reducing the need for new resource inputs (Fernandes, et al., 2020). By offering products as services or leasing them to customers, businesses can retain ownership and responsibility for product maintenance and end-of-life management, facilitating reuse and resource recovery. Servitization models that focus on delivering outcomes or performance rather than selling products outright can also be more sustainable by incentivizing resource efficiency and waste reduction. These models encourage manufacturers to design products for longevity, durability, and ease of maintenance, thus minimizing the likelihood of premature obsolescence and disposal (Kuhl, et al., 2023). Businesses emphasizing product performance and functionality can prioritize the optimization of resource use throughout the product lifecycle, aligning with the waste hierarchy's goal of waste prevention and minimization (Dong, et al., 2021).

In contrast, business models that prioritize the sale of physical products without considering their lifecycle implications may perpetuate a linear consumption pattern and contribute to resource depletion

and waste generation. Additionally, latter circular cascades, such as *recycle* and *refurbish*, often have less impact on developing sustainability than earlier cascades, such as *reuse* (Campbell-Johnston, et al., 2020). That is primarily due to the increasing resource and energy intensity involved in recycling and refurbishment processes, compounded by technical feasibility and infrastructure availability issues.

Firms can also enhance business performance by intensifying servitization and extending product lifetimes in line with waste hierarchy principles (Vendrell-Herrero, et al., 2022). Critics of linear modes of production often point to manufacturers programming obsolescence into products to generate revenue from continued sales (Rivera and Lallmahomed, 2016). However, some contemporary scholars have articulated the financial incentives of investing in the development of advanced servitization capabilities for products with longer lifespans to enhance business performance (Vendrell-Herrero, et al., 2022).

The adoption of servitization could enhance a firm's income stability (Gebauer and Friedli, 2005). Increased switching costs can foster customer loyalty (Yang and Peterson, 2004), and mitigate the impact of competitors' cost-focused strategies (Ulaga and Reinartz, 2011). Beyond mere product provision, manufacturers embracing product-service systems can capitalize on enhanced margins stemming from digitalization and product differentiation, thereby diversifying revenue streams (Abou-Foul, et al., 2021; Parida et al., 2019; Sjödin et al., 2020; Sousa & da Silveira, 2017; Vendrell-Herrero and Parry, 2017). Moreover, the transition to servitization renders firms less susceptible to fluctuations in economic cycles (Ariu, 2016). By integrating servitization into their business models, manufacturers can protect themselves against the risks inherent in competing with saturated or mature markets (Bigdeli, et al., 2018; Brax, 2005).

Switching from traditional, linear modes of production to servitization models can certainly provide financial benefits for businesses. In addition, intensifying servitization models by extending product life to elevate them in the waste hierarchy can become part of a strategic business model design. Vendrell-Herrero, et al. (2022) suggest firms' strategic management and revenue streams could benefit from switching to intensive and resource-efficient servitization business models, particularly those higher in the waste hierarchy. Accordingly, intensifying such models leads to an enhanced value proposition, greater revenue diversification, increased customer engagement, greater resource efficiency and cost reduction, and a significant competitive advantage in the market (Vendrell-Herrero, et al., 2022).

2.2. Circularity and servitization

The circular economy (CE) is a paradigm focused on minimizing waste and optimizing resource use through a closed-loop circular system that promotes product reuse, repair, remanufacture, and recycling, thereby contributing to sustainability (Kirchherr, et al., 2017). This model contrasts with traditional linear economic models by extending product lifecycles and enhancing resource efficiency. A circular business model embodies circular principles to pursue sustainable development (Bocken, et al., 2018). While partially aligned, circularity goes beyond the internal focus of servitization, which merely shifts emphasis from product sales to service provision. However, servitization is increasingly associated with potential positive impacts on sustainability, waste minimization, and resource optimization (Plepys, et al., 2015; Corvellec and Stål, 2016; Frishammar and Parida, 2019). Such associations are underpinned by the circular practices of reuse, repair, remanufacture, or recycling of products and resources. Accordingly, servitization models specifically support circularity by designing products that are durable, repairable, and upgradable (Frishammar and Parida, 2019). Both circularity and servitization challenge the conventional take-make-dispose production and consumption model, aiming for sustainability through resource efficiency. Service-business models pivot from selling products to delivering services, including leasing, sharing, or providing lifecycle services to prolong product life (Annarelli, et al., 2019; Rabetino et al., 2015; Merli et al., 2018). Furthermore, circular principles have been found to drive the development of service-based business models, underscoring a symbiotic relationship between circularity and servitization in fostering sustainability (Nielsen and Hakala, 2023). Servitized circular business models can consequently be defined as business models integrating both servitization and circularity principles.

2.3. Challenges to the alignment of circularity and servitization

Although we attribute servitization models to circularity and resource efficiency, such an alignment is not always predetermined. When we consider the four outlined servitization business models, product-based models remain the most prevalent due to their familiarity and simplicity (Opazo-Basaez, et al., 2018). Despite the rhetoric surrounding sustainability and servitization, product servitization business models often fall short in terms of resource efficiency and waste management compared to the closer cascading process-oriented and performance-oriented models. Product models, while common and familiar, inherently prioritize the sale of physical products over the utilization of resources in a more sustainable manner (Huikkola and Kohtamaki, 2018). Revenue generation relies heavily on the continuous production and sale of new products, perpetuating the linear take-make-waste paradigm rather than embracing the principles of circularity.

It could even be that firms employing product servitization models utilize the rhetoric and culture of sustainability and circularity while employing resource-inefficient strategies and business model designs. One such example can be attributed to Apple's iPhone Upgrade Program. The program is a servitization model that allows customers to subscribe to the latest iPhone model and upgrade annually. The model is most closely aligned with the product business model in offering an opportunity to upgrade annually, with the core revenue stream still coming from the sale of physical iPhones. This program is marketed as a convenient and sustainable way for customers to access cutting-edge technology while reducing electronic waste (Apple, 2022). While Apple promotes the program as part of its commitment to sustainability, there are elements of the program that actually indicate resource inefficiency. The program still relies on the physical, annual sale of iPhones, perpetuating the linear process of electronic waste generation. In addition, Apple allegedly continues to design its products with planned obsolescence, making it difficult for customers to repair or upgrade individual components (Emerson, 2019; Das, 2023). Additionally, although Apple operates a recycling program for old iPhones, the actual recycling rates are relatively low compared to the number of devices sold (Eadicicco, 2022). Many old iPhones end up in landfills or are exported to developing countries for informal recycling, leading to environmental and health hazards (Yun, 2021).

Service-agreement and process-oriented models, which we argue sit higher in the waste hierarchy (Fig. 1), are also at risk of not aligning properly with the principles of resource efficiency and circularity. Tukker (2004) outlines that customer and client users of product-service systems and servitization models may treat products less responsibly than within linear transactions because they do not own the products, which in turn leads to an accelerated product lifecycle (Tukker, 2004). Additionally, scholars such as Barquet et al. (2016) and Corvellec and Stål (2016) outline that the resource-intensive processes of waste management, collection, monitoring, and reverse logistics implemented with the wider cascading and most popular forms of the servitization models, often lead to negligible or even negative effects for environmental protection and resource efficiency.

We thus argue for the further alignment of circularity and resource efficiency with servitization. Tighter cascading servitization business models, such as the process-oriented and performance-oriented forms (Huikkola and Kohtamaki, 2018) could offer high levels of resource efficiency due to their focus on optimizing processes and maximizing

performance outcomes. Consequently, proponents of sustainable business model design and resource efficiency should encourage the uptake of such businesses and seek to drive firm-level innovation and entrepreneurship within sustainable servitized circular business models.

Table 1 highlights the extent to which each servitization model can be attributed to and aligned with circular principles and the waste hierarchy. Additionally, each section highlights the challenges each model poses to sustainability and implementation. Finally, we have highlighted institutional initiatives and structures that encourage or influence the uptake of these models.

2.4. Institutional initiatives for the development of the circularity and servitization

The global push for sustainable economic practices and resource stewardship has led to the development of institutional initiatives that advance circularity. Global organizations such as the United Nations Environment Program (UNEP) and the World Economic Forum (WEF) advocate adopting circular principles as a means to address environmental challenges and promote sustainable development goals (Swannell et al., 2021; Masterson and Shine, 2022). National and supranational governments are implementing policies and strategies to accelerate the transition to a circular economy. In China, the Circular Economy Promotion Law mandates resource recycling and waste reduction measures (Order of the President of the People's Republic of China, 2018). Within the EU, directives such as the Circular Economy Action Plan and the European Green Deal serve as pivotal frameworks, emphasizing the transition toward a circular economy. Such policies are coupled with Corporate Sustainability Reporting Directives, requiring large companies to adhere to contemporary concerns of environmental protection (European Commission, 2024a). These directives both mandate resource-efficient production and consumption and incentivize businesses to adopt circular practices through regulatory measures and financial support (European Commission, 2020b). Similarly, in the United States, the Circular Economy Federal Strategy aims to advance circularity across key sectors, driving innovation and economic growth while reducing environmental impact (Environmental Protection Agency, 2023).

These global and regional institutional drivers set the stage for regulatory frameworks and also foster collaboration between businesses and civil society to promote circularity (Kaplan, 2022; Moreau et al., 2017). The initiatives provide a conducive environment for the development and adoption of servitized circular business. By aligning with circular principles, businesses can meet regulatory requirements and also tap into growing customer demand for sustainable products and services, thereby driving innovation and competitive advantage in the global market.

Alongside these political and legislative developments, customer behavior trends are becoming increasingly facilitative of the collaborative nature of value within servitization (Morewedge et al., 2021; Kostiainen and Tuominen, 2020; Tinnila, 2016). Clients increasingly favor experiences and outcomes over the mere possession of goods (Keränen, et al., 2021). This shift in client mindset is driven by various factors, including environmental consciousness, financial considerations, and a desire for convenience (Morewedge, et al., 2021).

The rise of the sharing economy exemplifies this trend, as customers

Table 1
Alignment of servitization business models with circularity and waste hierarchy principles.

Servitization Models and Circularity	Business Model Focus	Circularity Alignment	Waste Hierarchy Alignment/ Resource Efficiency & Sustainability	Challenges to Sustainability and Implementation	Initiatives to Enhance Model Aligned with Circularity
Product Business Model	Linear model of value creation and proposition, inclusive of 'some' elements of reverse logistics and service offerings. Firms prioritize re-sale of products and minimize the cost of recycling, and product lifecycle extension.	Utilizes recycling and recovery of materials and the end-of-life of a product.	Offers broad potential for resource efficiency. Products can be recollected with materials reintegrated into the value chain. Newer sustainable products may be introduced to replace older, less sustainable products.	Perpetuates linear modes of production waste generation. Products rely on wider cascading logistics and energy for efficient collection. Contributes faster-decaying material. Vulnerable to planned obsolescence as firms will prioritize future sales.	CE policies, inclusive of extended producer responsibility and right-to-repair legislation encourage firms to integrate reverse logistics into models for further resource efficiency. These models are best enhanced by further integrating servitization into the value chain.
Service-Agreement Model	Provides for aftermarket services through contracts, such as maintenance and repair. Revenue is maximized through selling ongoing service contracts to customers.	Utilizes repair and reduce for the product for lifecycle extension.	Offers more concise benefits for resource efficiency and waste management. Customers are provided with more access to maintain and repair their products through contractual services, which extends their product lifecycle and reduces waste.	The model still relies on the responsibility of manufacturers for the maintenance and lifecycle extension of products. Vulnerable to planned obsolescence to a certain extent.	Extended producer responsibility and right-to-repair strengthen such model designs. Normative social pressures for customer demands for repair and maintenance of products additionally prove vital.
Process-Oriented Model	The manufacturer retains ownership of the product. The company focuses on providing services through value proposition. Revenue is generated through the proposition of services and the availability of processes and services for customers.	Utilizes more efficient circular practices, such as reducing, reuse, and redesign for product lifecycle extension.	The model sits highly within the waste hierarchy. Through effective alignment with environmental protection initiatives, product lifecycles can be extended, and waste can be reduced.	The model requires active customer participation. Such a model can be complex to implement. Some models have still been critiqued as they have led to customer disinterest in product maintenance.	The model requires the integration of further social and normative pressures coupled with legislative developments. These should encourage the further participation of customers in value chain activities.
Performance-Oriented Model	The model shifts ownership and responsibility back to manufacturers. Value proposition focuses on delivering outcomes or results to customers rather than just products or services. Revenue is generated from maximizing the use of a product or service.	Utilizes redesign, rethink, and reuse circular practices. They extend the lifecycle of products but also rethink how outcomes can be offered in a more resource-circular manner.	The model sits at the most efficient levels of the waste hierarchy. Materials and waste can be redesigned out of value chain activities.	The model also exhibits complexity, and difficulty to implement.	The model also requires the integration of social and normative participation into models. These can be encouraged through coercive legislation. Market-based pressures and social pressures for sustainability should also encourage further uptake.

opt for renting or subscribing to products and services rather than purchasing outright. Platforms offering access to goods on a temporary or subscription basis, such as car-sharing services, clothing rental companies, and streaming platforms, have demonstrated significant growth in recent years (Sharma and Sijariya, 2023).

3. Institutional confluence for servitization and circular economy alignment

Enterprises are increasingly confronted with the imperative to cultivate circular and sustainable business models (Bansal and Roth, 2000; Schillebeeckx et al., 2022; Nielsen and Hakala, 2023). It is well recognized that institutional forces wield significant influence over organizational strategies and practices (Meyer and Rowan, 1977; Scott, 1995, 2005; DiMaggio and Powell, 1983). Meyer and Rowan (1977) and Scott (1995, 2005) elucidate that organizational structures, including business models, are emblematic of rationalized institutional rules predicated upon the pursuit of legitimacy within the broader socio-economic milieu. As such, the process of legitimation engenders organizational isomorphism, whereby firms align their structures and practices with prevailing institutional norms and expectations. The term *institutional pressures* here refers to the external influences exerted by the broader socio-economic environment on organizations (Meyer and Rowan, 1977; Scott, 1995, 2005; DiMaggio and Powell, 1983). DiMaggio and Powell's (1983) framework presents coercive, normative, and mimetic pressures to consider how external institutional pressures impel organizational adaptation.

Coercive pressures emanate from political and regulatory mandates, compelling firms to conform to specific standards or regulations. Currently, many coercive pressures push companies toward increased circularity. Extended producer responsibility (EPR) (Lindhqvist, 2000; Gehin et al., 2008) legislation has been embedded in regulatory frameworks across the world (e.g., the EU's WEEE Directive, Japan's Home Appliance Recycling Law, and South Korea's Waste Control Act) thereby compelling manufacturers to reassess their business models. The policies force firms to collect and recycle end-of-life products. Additionally, financial incentives or penalties tied to product recovery rates incentivize companies to design products for easier disassembly and recyclability, driving a shift toward more sustainable practices. For instance, companies like Dell and Apple have implemented product take-back programs to comply with EPR regulations, thereby altering their traditional product-centric business models to include some services such as recycling and refurbishment (Apple, 2022; Dell, 2024). In addition, policies, such as the EU's Ecodesign Directive, which imposes minimum energy and resource efficiency standards, have prompted manufacturers to produce environmentally friendly products (European Commission, 2024b). Companies like Philips and IKEA now integrate sustainable design principles into their product development processes by incorporating recycled materials and reducing reliance on virgin resources (Philips, 2024; IKEA, 2024). These firms' manufacturing processes thus embrace circularity. Third, right-to-repair legislation typically requires manufacturers around the world to provide spare parts and repair information to empower consumers to extend product lifecycles (Kahane, 2021; European Commission, 2023). It is important, however, to acknowledge that coercive institutional pressures do not always facilitate improved sustainability and resource efficiency. Liu et al. (2024) analyze the implications of institutional rigidity as a phenomenon that compels companies to prioritize existing metrics over independent criteria and self-creativity in project funding (Liu, et al., 2024; Grodal & O'Mahoney, 2017). Such strict standards imposed by coercive policy and regulation can subsequently hinder the innovation needed for advancing circular economy projects.

Normative Pressures stemming from societal expectations around sustainability and circularity have prompted companies to adapt their business models to align with prevailing socio-cultural values. For instance, companies like Patagonia have responded with the *Worn Wear* initiative (Patagonia, 2024) promoting repair and reuse of clothing. Similarly, Fairphone's integration of circularity principles into its business model reflects a strategic response to normative imperatives for sustainability and ethical consumption. By designing modular and ethically manufactured smartphones with extended warranties and repair services, Fairphone aligns its practices with societal expectations for environmentally friendly and socially responsible products (Fischer, et al., 2022). In summary, normative pressures to engage with sustainability, the circular economy, and social responsibility have spurred companies to rethink their business models and embrace practices that align with the societal expectations of environmental conservation, social justice, and ethical business conduct.

Mimetic pressures exert a profound influence on business model evolution, driving organizations to emulate established models and best practices within their industries. These pressures compel firms to adopt similar approaches to their competitors in the absence of clear guidance, resulting in a homogenization of strategies and practices. Industry standards, such as the forthcoming ISO5900× series, which covers definitional, implementation, measurement, and assessment aspects of circularity (Arana-Landin, et al., 2023) and certification schemes, contribute to homogenization by serving as benchmarks for servitized business practices, guiding firms in their pursuit of legitimacy and competitiveness (Oyelakin and Johl, 2022; Hojnik, 2018). For example, the transition from traditional software licensing to subscription-based services, observed in companies like IBM and Microsoft, highlights the impact of mimetic market pressures on business model innovation (Harris and Winglimpiyarat, 2020; IBM, 2024; Microsoft, 2024). Successful subscription-based models in other industries have persuaded these companies to offer Software-as-a-Service (SaaS). Best practices from other industries have led Interface, a global flooring manufacturer, to implement a closed-loop system that recycles and reuses materials to embrace circularity (Stubbs and Cocklin, 2008; Lugmani et al., 2017). Interface's *ReEntry* initiative collects used carpet tiles from customers, recycles them into new products, and reintroduces them to the market. In sum, by emulating established models and best practices, mimetic pressures drive business model innovation and adaptation.

Institutional pressures do not take effect in isolation (Guarnieri, et al., 2023). Fundamentally, the design of business models is influenced by a myriad of institutional pressures, spanning regulatory mandates, societal norms, and market conventions. To encapsulate the interplay of the diverse institutional influences, we propose the concept of *institutional confluence*, which we define as *a configuration of institutional pressures that enhance business model legitimacy to stakeholders and facilitate operational success*.

However, it is important to note that the success of institutional confluence as an agent of sustainability and circularity, is dependent upon the idiosyncratic context of the firm. Management's interpretation of institutional pressures, coupled with organizational capabilities and strategic intent, shapes the decisions and actions of the firm. While external pressures may manifest in similar forms across industries, the extent to which they are perceived and internalized varies, yielding divergent trajectories of organizational adaptation. Hence, although this particular article discusses institutional pressures pushing companies to adopt servitized circular business models, we view institutional confluence as a broader concept, one that captures the intricate interaction between multiple distinct external elements that affect organizations. This phenomenon is represented in Fig. 2.

4. The influence of institutional confluence upon servitization business model design

As mentioned above, confluence represents the blend of institutional pressures that challenges the traditional unidimensional framing often found in existing literature (Guarnieri, et al., 2023). It underscores the synergistic interaction and coalescence of coercive, normative, and mimetic pressures within organizations, leading to transformative

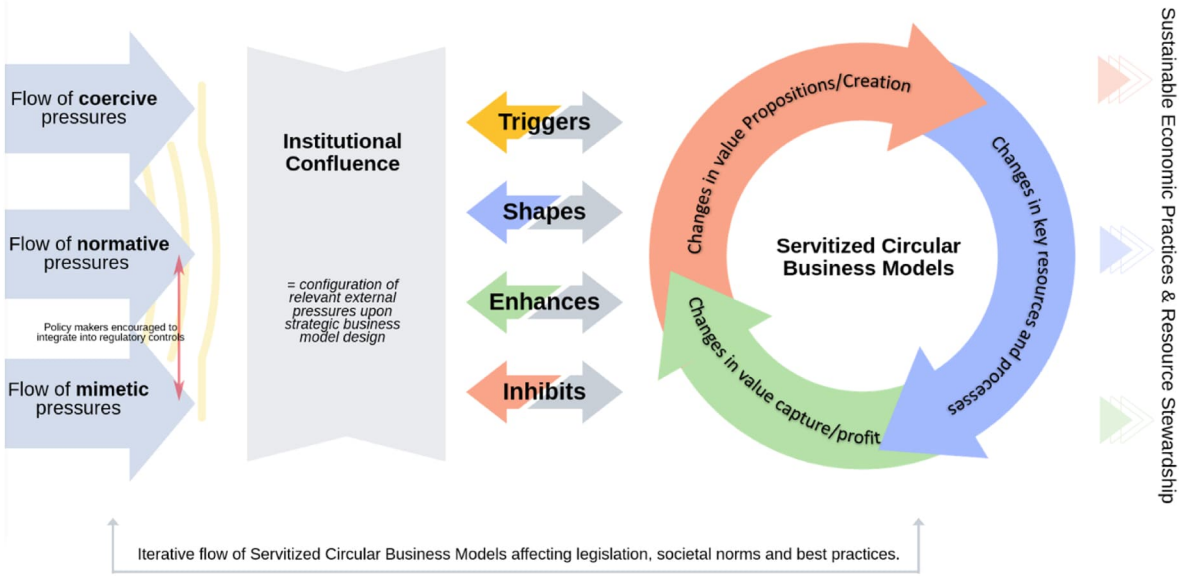

Fig. 2. Institutional confluence between institutional pressures and business model design.
Source: Author's own elaboration. Coercive, normative, and mimetic institutional pressures are established concepts within the institutional framework, stemming from DiMaggio and Powell (1983).

dynamics within business model design. This interplay may even produce an environment where one institutional pressure impedes the influence of another, thereby hindering transformation. Business models relate to the firm-level processes of value creation, delivery, and capture (Osterwalder and Pigneur, 2010; Sjödin et al., 2020). Owing to its idiosyncratic nature, confluence's precise impact on each business model is also dependent on decisions made in each firm (see Raddats et al., 2019; Nag et al., 2021; Makkonen et al., 2022). We posit that institutional confluence can manifest in this juxtaposition in four distinct roles: triggering novel business models, shaping resources and processes, enhancing value capture, and inhibiting or obstructing business model feasibility. These are represented in Fig. 2 as four arrows spanning institutional confluence and service-business model design aspects.

4.1. Understanding how institutional confluence triggers new service-business models

When using the term *triggering,* we refer to the emergence of novel business models in the market. Prior studies illustrate that circular pressures have created new business models in the packaging (Nielsen and Hakala, 2023), oil (Kaipainen and Aarikka-Stenroos, 2022), and transport industries (Saidani, et al., 2018). We argue that the confluence of institutional forces offers fertile ground for these business model innovations. Coercive regulations, in the form of environmental policies and mandates, serve as powerful triggers by imposing legal requirements for businesses to adopt more sustainable practices. These regulations compel companies to reevaluate their traditional linear business models and explore servitization approaches that prioritize product longevity, reuse, and resource efficiency (Makkonen, et al., 2022). For new businesses, the triggering effect of institutional confluence on servitized circular business models is particularly relevant as it presents both challenges and opportunities in navigating the competitive landscape and establishing a market presence. The emergence of coercive regulations imposes regulatory compliance burdens on new ventures, requiring them to design business models aligned with sustainability mandates from the outset. Such regulations force firms to accept compliance costs and operational adjustments but also create a level playing field where innovative startups can capitalize on their agility and adaptability to develop servitized circular business models. Those models can often confirm regulatory requirements more efficiently than those of established incumbents (Alonso-Almeida, et al., 2021; Hockerts and Wüstenhagen, 2010). Some jurisdictions nurture new business models by granting temporary relief from regulatory requirements by providing dedicated testing and piloting environments, referred to as regulatory sandboxes for circular innovation (e.g., Vietnam) (Nga, 2023).

Simultaneously, mimetic market forces exert pressure on firms to emulate competitors and industry leaders who have successfully implemented servitized circular business models. As businesses observe the strategic advantages and market positioning of these innovative approaches, they are triggered to explore similar business models to remain competitive and relevant in their respective industries (Haveman, 1993; Andjelkovic, 2014). Furthermore, normative social forces play a pivotal role in triggering the adoption of servitized circular business models by shaping consumer preferences and societal expectations. Expanding customer and community awareness of sustainability has increased demand for products and services that align with circularity principles, prompting businesses to respond by introducing sustainable servitization models (Fritze, et al., 2018). In essence, the confluence of these institutional pressures can create a triggering effect that compels incumbent and new-venture firms to implement servitized circular business model designs as a strategic response to evolving environmental, market, and social pressures.

The introduction of e-scooter leasing programs in urban areas exemplifies the triggering aspect. E-scooter firms such as Bird and Lime pioneered implementing a servitized business model. They achieved that by strategically situating e-scooters throughout cities and providing minute-based rentals through a mobile application (Kiessler, 2019). The coercive pressure from environmental policies incentivized cities to adopt greener transportation alternatives, opening up opportunities for e-scooter companies to operate within regulatory frameworks focused on sustainability. Furthermore, normative shifts toward environmental consciousness among consumers fueled demand for eco-friendly transportation options, further driving the adoption of e-scooter leasing as a sustainable alternative to traditional modes of transport. Consumer acceptance of leasing models within transport infrastructure has also increased and has been supported by facilitative app-based digital technologies (Kopplin, et al., 2021; Flores and Jansson, 2021). Finally, mimetic pressures exerted by early adopters of e-scooter services

encouraged many other firms to enter the market, creating a competitive landscape conducive to innovation in circular-oriented mobility solutions.

4.2. Understanding how institutional confluence shapes resource and processes

Institutional confluence also shapes the business models of incumbent firms. Those models are also subject to the interplay of regulatory, market, and societal influences and have often been adapted to reflect a servitized circular business model design. For many established companies, embracing circularity and servitization involves a strategic transformation of their traditional linear business models to align with sustainability goals and consumer demand. Coercive regulations play a pivotal role in shaping the business strategies of incumbent firms, compelling them to comply with environmental standards and regulations aimed at reducing waste, emissions, and resource consumption (Batles-delaFuente, et al., 2021). The shift has been accelerated by the need to compete with new ventures championing servitized circular business models (Santa-Maria, et al., 2022). Mimetic market forces, which drive incumbents to imitate successful competitors and industry leaders, play a significant role in shaping this response (Koen, et al., 2011). Seeing the positive reception and market demand for products and services offered by these new entrants, established companies recognize the need to reevaluate their own business models and strategies to align with evolving market trends and consumer preferences (Santa-Maria, et al., 2022). Incumbent firms might also strategically partner with or acquire innovative startups to access their expertise, technologies, and customer bases and accelerate the transition toward a circular business model (Tuladhar, et al., 2023).

We additionally argue that institutional confluence could challenge the force of institutional rigidity that hinders circular innovation (Liu, et al., 2024; Grodal and O'Mahony, 2017). As outlined previously, companies may prioritize existing metrics, implemented following well-meaning coercive regulatory pressures for circular growth, over independent criteria, self-creativity, and innovation in project funding due to institutional rigidity (Liu, et al., 2024). Applying the institutional confluence lens, we propose that a balanced configuration of coercive, normative, and mimetic pressures can effectively counteract the effects of institutional rigidity on firms engaged in circular economy projects. In the changing institutional climate, within a transition to sustainability and resource efficiency (Bor, et al., 2024), coercive pressures catalyze innovation by compelling firms to comply with standards aimed at reducing waste, emissions, and resource consumption. However, a supportive normative environment is crucial to ensure that such regulations foster rather than stifle innovation. Normative pressures play a pivotal role in shaping firms' behaviors and attitudes relating to innovation within the circular economy (Jabbour, et al., 2020; Arranz and Arroyabe, 2023). By emphasizing the importance of creativity, independent criteria, and ethical considerations in decision-making processes, normative pressures can counterbalance a rigid adherence to existing metrics flowing from institutional rigidity. Furthermore, mimetic pressures can promote a culture of innovation and experimentation (Kenneth and Tong, 2018).

Overall, the influence of new ventures on incumbent firms in the context of mimetic market forces underscores the dynamic interplay between innovation, competition, and adaptation in driving the transition toward servitized circularity. Incumbents who can learn from the strategies and successes of emerging players can position themselves for long-term growth, resilience, and relevance in a rapidly evolving business landscape shaped by sustainability imperatives and market demands.

The automotive industry provides an example of these shaping effects influencing servitization business models. Established manufacturers have transitioned from product-centric models to servitization-based approaches in response to changing consumer preferences, regulatory pressures, and market forces. Companies like BMW and Ford have leveraged their infrastructure and brand reputation to launch car-sharing initiatives and subscription-based mobility services that provide consumers with flexible access to vehicles (LeBeau, 2015; Roberts, 2019). For those incumbents, shaping their business models to reflect servitization goals has opened new revenue streams and met the demand for sustainable transport solutions. Evidently, they have not fully abandoned their well-proven business models but extended them, requiring changes in key resources and the processes required to manage their business. Similarly, for Dell Technologies, regulations mandating electronics manufacturers manage product disposal responsibly and societal expectations for corporate sustainability have led the firm to implement initiatives such as closed-loop recycling, product take-back programs, and design for disassembly to reduce waste and promote circularity (Dell, 2024).

Overall, the shaping role of institutional confluence highlights that existing incumbent businesses are adapting by redefining their value propositions, leveraging technology, and embracing servitization as a strategic response to market dynamics and sustainability imperatives. By aligning with circular principles and addressing consumer demand for sustainable products and services, these companies are trying to improve their position in the market, but often without radically changing their business models (Kaipainen and Aarikka-Stenroos, 2022).

4.3. Understanding how institutional confluence enhances the ability for value capture

We propose that the role that confluence takes to 'enhance' servitization is important for strategic management considerations as it is closely linked with the firm's ability to capture value. In the servitization literature, value capture refers to the process by which firms capture value from services they provide beyond the traditional product-centric business model (Vargo and Lusch, 2016). It relates to the way business models monetize the benefits generated by offering services alongside or instead of physical products (Baines, et al., 2009). In many cases, normative and coercive pressures for circularity may offer further value for customers but can also incur compliance costs for businesses when they seek to balance environmental concerns and pressures with contemporary market and economic pressures (Kautonen, et al., 2020). However, sustainable development and environmental protection initiatives also sometimes attract financial incentives or bring cost savings and additional revenue. Examples are found in the realms of emissions trading, environmental, social, and governance (ESG) regulations, and carbon credits (Ortas, et al., 2015; Jahid et al., 2023; Park and Jang, 2021). Additionally, as noted prior, introducing and intensifying servitization and product lifecycle extension models to foster resource efficiency can provide several tangible incentives that can yield a competitive advantage. These include greater customer retention and switching costs, protection from external economic cycles, and greater product diversification (Vendrell-Herrero, et al., 2022).

Enhancing also relates to the development and adoption of servitization models aligned with circular principles and resource efficiency further up the waste hierarchy. We can again consider the evolution of car-sharing business models. Companies such as Zipcar enhance their servitization models by adopting business model designs such as process-oriented and performance-oriented approaches that prioritize resource efficiency and circularity. By implementing advanced fleet management systems, predictive maintenance algorithms, and data-driven optimization techniques, these companies are maximizing the lifespan of vehicles, reducing maintenance costs, and minimizing environmental impact (Zipcar, 2022). Moreover, the shift toward electric hybrid vehicles enhances the sustainability of car-sharing services, reducing greenhouse gas emissions and reliance on fossil fuels. Companies like Share Now and BlueSG are leading the charge in electrifying their fleets, offering consumers access to zero-emission transportation

options that align with evolving environmental regulations and consumer preferences (ShareNow, 2024; BlueSG, 2024). In addition, Philips Lighting, now known as Signify, has transitioned toward circular business models to capture value in the lighting industry. Signify offers *Light as a Service* (LaaS) rather than selling traditional lighting products outright. The subscription-based model provides customers with access to high-quality lighting while Signify retains ownership of the products. At the end of the product lifecycle, Signify retrieves and refurbishes the lighting fixtures, allowing for the reuse or recycling of materials. By adopting circularity principles, Signify enhances its value capture by establishing long-term customer relationships, generating recurring revenue streams, and reducing environmental impact through product reuse and recycling (Signify, 2024).

4.4. Understanding how institutional confluence inhibits business models

Finally, we outline how the confluence of institutional pressures leads to the inhibition and obstruction of business model design and success. The confluence of institutional pressures can serve as a significant barrier to the success of servitization business models. Firms operating in industries subject to stringent environmental regulations face heightened accountability for their environmental footprint. Non-compliance with these regulations can result in severe penalties and reputational damage (Ouro-Salim and Guarnieri, 2023). Normative pressures can also inhibit non-sustainable servitization business models. Stakeholders now expect businesses to demonstrate their commitment to corporate social responsibility and environmental stewardship (Rizos, et al., 2016). Servitization firms that disregard the expectations of their stakeholders risk brand erosion and losing trust.

Moreover, normative pressures can influence customer behavior, with environmentally conscious customers favoring products and services that align with their values and beliefs (Raddats, et al., 2019). Servitization firms that fail to embrace sustainability may find themselves at a competitive disadvantage as they struggle to attract and retain customers in an increasingly environmentally conscious marketplace. Finally, mimetic pressures may lead to servitization firms that eschew sustainability, facing ostracism and marginalization within industry networks, limiting their access to valuable resources, partnerships, and market opportunities (Oyelakin and Johl, 2022).

There are numerous illustrative examples of firms that have been eliminated and inhibited due to the confluence of institutional pressures or the lack of such. E-scooter business models again provide an illustration. Despite being touted as eco-friendly alternatives to traditional fossil-fuel-powered vehicles, e-scooter and e-bike lease models have attracted significant criticism, usually relating to sustainability and environmental protection. The vehicles' lithium-ion batteries require rare earth minerals extracted through environmentally damaging processes and create disposal issues at the end-of-life (Reis, et al., 2023). Additionally, the proliferation of e-scooters and e-bikes in urban areas attracts complaints about their impact on urban space and infrastructure. Issues such as cluttered sidewalks, improper parking, and congestion in public spaces have led to stricter regulatory controls (Buckley, 2019). The uptake of these e-scooter business models is supported by the changes in normative standards to advance consumer ownership and producer responsibility (Morewedge, et al., 2021; Kostiainen and Tuominen, 2020; Tinnila, 2016). However, domestic regulation in certain markets has hampered the success of these businesses. Scoot, a shared electric scooter company, had to terminate its operations in Barcelona in 2019 after the city government introduced strict regulations on scooter-sharing services, including reducing the number of scooters allowed and imposing hefty fines for non-compliance (Buckley, 2019). Similar barriers have also been identified with Uber's Jump scooters in San Francisco (CBS Bay Area, 2020).

5. Iteration and reverse effects

Another key aspect of institutional confluence is its iteration. Servitization business model designs are impacted by their external environment, but these ideas and behaviors also permeate back into the external environment. Accordingly, the success of servitization businesses leads to a further normative acceptance and requirement for servitization and ownership values, which stimulates the continued growth of these models. This iterative process feeds into the process of confluence, interacting further with normative, and mimetic processes, eventually also leading to increasing coercive regulatory designs. Accordingly, in contrast to the case of e-scooters outlined previously, in which the suffusion of e-scooters into the urban landscape prompted coercive regulation of such process-based service models, the reverse has also been noted. When service-business models align with broader circular economic and sustainable development objectives, that can spark further legislation that supports service-based business model design. This phenomenon is reflected at the bottom of Fig. 2 in our conceptual framework. Alongside the identified example of e-scooter business models, we refer to such an iteration within Swedish packaging initiatives. A Swedish company, &Repeat, has been piloting a system for reusable food packaging for takeaway foods since early 2020; the results indicate this type of packaging-as-a-service system is feasible and acceptable to consumers (&Repeat, 2024). Such success has encouraged Sweden to lead the way with policies aligned with normative socio-cultural pressures alongside the more traditional coercive regulations. From 2024, offering reusable packaging as an alternative to single-use packaging will be mandated (Naturvårdsverket, 2023). While the regulation does not force customers to use reusable packaging, it may strengthen the normative pressure for customers to use that form, effectively supporting the development of packaging-as-a-service business models.

Table 2 includes brief explanations of the case examples utilized within the theorizing segment above. These summaries should facilitate a clearer understanding between the servitization business models presented in Table 1 and the concept of institutional confluence presented in Fig. 2.

6. Discussion

The article provides for a strengthening of the alignment between servitization and circularity, while acknowledging contemporary, practical discrepancies between the two paradigms. Some research suggests servitization business models are a potential panacea to contemporary concerns of waste management and resource inefficiency (Plepys, et al., 2015). The power of servitization models to maintain material and value within a closed and cascading loop provides value capture and proposition benefits for the customer and firm. These models can potentially contribute toward circularity principles of resource utilization and lifecycle extension (Kuhl, et al., 2023). While sharing common objectives in sustainability and efficient resource use, servitization and circularity are not universally compatible (Hojnik, 2018). As evidenced throughout this article, a business model may adopt circular and/or servitized strategies without necessarily achieving resource efficiency and sustainability. Nevertheless, exploring the interplay of institutional forces supporting circularity and sustainability can pave the way for developing servitized circular business models that are genuinely sustainable.

6.1. Contributions to theory

This article contributes to the CE and servitization literature by investigating the relationship between servitization and circularity and highlights the potential benefits of strengthening the alignment between the two paradigms. Given that the integration of services into traditional product offerings does not guarantee resource efficiency and

Table 2
Business model case examples.

Case Example Used	Type of Institutional Force	Example & Relevance	BM Type
Automotive Industry			
Traditional car dealership	We outline several institutional pressures on the automotive industry. ***Coercive*** regulatory controls and ***normative*** pressures have compelled automotive companies to introduce new, sustainable business model designs. ***Mimetic*** pressures have driven emergent firms to disrupt mature markets and have driven incumbent firms to counteract disruptive competition with intensified servitization.	Revenue is generated through transactions, with ownership of the product entirely transferred to the customer.	Product BM
Tesla		Tesla offers a service agreement alongside the transactional purchase of their vehicles, which covers maintenance, repairs, and software updates, utilizing subscription as a method of prolonging the manufacturer-customer relationship.	Service-Agreement BM
BMW *Ford*		Incumbent automotive companies such as BMW and Ford have introduced car-sharing and subscription initiatives, offering consumers flexible access to vehicles. Incumbents are thus ***shaped*** through institutional confluence toward greater circularity and servitization.	Process-Oriented BM
Zipcar *ShareNow* *BlueSG*		These car-sharing companies have ***enhanced*** their servitization toward greater circularity and resource efficiency as a result of a confluence of institutional pressures.	
Clothing and Fashion			
Rent the Runway	***Normative*** pressures have influenced clothing and fashion firms to align their business models with prevailing socio-cultural values.	Rent the Runway rents designer clothing to customers, retaining ownership of the product and generating revenue through a leasing model.	Process-Oriented BM
Patagonia		Patagonia's *Worn Wear* program promotes the repair and reuse of clothing, providing repair services and resources to facilitate the process. The program extends the lifetime of the product alongside the relationship between the service provider and the customer.	Service-Agreement BM
Cellphones			
Apple iPhone Upgrade	***Coercive*** extended producer responsibility pressures have encouraged incumbent firms, such as Apple, to implement 'take-back' schemes. ***Normative*** pressures have also influenced firms, such as Fairphone, to align their business models with prevailing socio-cultural values.	Customers can subscribe to the latest iPhone model, upgrading annually. The case is an example of a servitization model, marketed as a sustainability initiative, that actually perpetuates linear consumption and resource inefficiency.	Product BM
Fairphone		Fairphone has implemented service design into its business model, prolonging product life alongside the customer/service provider relationship. The firm has additionally implemented modularity and repairability into its design of products.	Service-Agreement BM
E-scooters			
Bird *Lime* *Scoot* *Uber Jump*	E-scooter models have been influenced by **coercive** regulatory controls, which have allowed or prevented their entry into urban markets. They have benefited from ***normative*** shifts toward eco-friendly travel options and outcome/performance-oriented consumer behavioral shifts. The success of such firms has encouraged other firms to enter the market through ***mimetic*** pressure.	These models have been ***triggered*** by the confluence of institutional pressures, introducing leasing programs in urban areas for e-scooters. Numerous models, however, have also been ***inhibited*** in urban markets owing to a lack of such confluence.	Process-Oriented BM
Technology			
Dell	Technology firms have been influenced by numerous institutional forces. ***Coercive*** extended producer responsibility and ecodesign pressures have encouraged firms to advance the transition toward servitization intensification and sustainable design. Doing so has involved includes take-back schemes, alongside the more modular and sustainable design of products. ***Normative*** and ***mimetic*** forces have additionally compelled firms to intensify their servitization, utilizing outcome-oriented models of service design and introducing tighter reverse logistics for the collection of waste and material.	Dell has implemented a take-back system to drive the reuse and refurbishment of materials into new products. As an incumbent firm, these business models are shaped by the confluence of institutional forces toward servitization and circularity.	Product BM
Philips		Philips has incorporated recycled materials into product development and design. We use this case as an example of companies responding to policies such as the EU's Ecodesign Directive.	
Signify		Signify provides lighting solutions through predefined performance metrics, whereby customers pay for the outcome rather than the physical product. This model has been ***enhanced*** from	Performance-Oriented BM

(*continued on next page*)

Table 2 (*continued*)

Case Example Used	Type of Institutional Force	Example & Relevance	BM Type
		previous linear models under Philips due to a confluence of institutional pressures.	
Microsoft IBM		IBM and Microsoft have introduced software-as-a-service models into their business model design, transitioning from traditional software licensing to subscription-based services.	Service-Agreement BM
Other Industries			
IKEA	***Coercive*** ecodesign pressures have led to sustainable design within product development.	IKEA has incorporated recycled materials into product development and design. IKEA exemplifies firms responding to policies such as the EU's Ecodesign Directive.	Product BM
Interface	Interface has been influenced through ***mimetic*** market forces to adopt circularity and servitization into its business model design.	Interface's *ReEntry* program collects used carpet tiles from customers, recycles them into new products, and reintroduces them into the market.	
&Repeat	*&Repeat* reflects iterative institutional influences, being pressured by ***normative***, ***coercive***, and ***mimetic*** pressures, but also influencing coercive policies, normative social behaviors, and mimetic market trends as a result of successful business model design.	&Repeat is a food packaging service for takeaway foods utilizing 'packaging-as-a-service' models, in which customers utilize reverse logistics in order to transfer ownership back to the service providers after use. The case reflects the ***iterative*** nature of our institutional confluence model by illustrating how their business model has influenced Swedish policymakers to introduce legislation mandating reusable food packaging.	Service-Agreement BM

sustainability (Kjaer, et al., 2018; Pieroni et al., 2019; Tukker, 2015; Zink and Geyer, 2017), we shed light on the complex factors that influence the adoption of servitization circular business models by explicating the alignment between circularity principles and servitization. While certain servitization articles (Fernandes, et al., 2020) imply sustainability, it is important to recognize that services are not inherently sustainable. Instead, the principles of sustainability and resource efficiency should be integral from the outset when designing service-based business models. Hence, this article extends the discussion of sustainable servitization (Kohtamäki, et al., 2024; Sjödin, et al., 2024) by suggesting the need to manage compatibility between circularity principles and servitization-based business models.

Second, this article introduces the notion of institutional confluence, underscoring the amalgamation of regulatory, societal, and market pressures that shape the development of servitized circular business models. Institutional confluence provides a conceptual framework for understanding the blending of institutional pressures, which in turn fosters the creation of sustainable service-based business models. This concept elucidates how regulatory, normative, and mimetic pressures collectively influence business model innovation to advance sustainability. The notion contributes to the wider discussion of how institutional isomorphism shapes product-based businesses toward service-design logic (Makkonen, et al., 2022; Turunen and Finne, 2014).

Third, we identified four key roles of institutional confluence. Institutional confluence affects service-business models by triggering, shaping, enhancing, and inhibiting certain types of business models. This insight enriches the discourse on how businesses can navigate and leverage institutional pressures (Töytäri, et al., 2018) and offers a nuanced understanding of how firms sense and even shape the dynamics at play in aligning business practices with circularity goals.

6.2. Implications for practice

For managers, this article underscores the importance of designing business models that align with institutional expectations to avoid resistance and leverage positive reinforcement from the market and regulatory environments. This alignment could foster norms that attract customers and spur industry-wide imitation, potentially shaping future legislation toward sustainability. Managers are urged to cultivate strategic foresight, proactively anticipating the interplay of coercive regulations, mimetic market forces, and normative social pressures. Through an enhanced level of strategic foresight, managers should then look to the design of business models that meet minimal resistance and inhibition from their wider environment and are met favorably by institutions and customers.

The discussion of how service-business models can influence institutional confluence ensures the article provides a strategic perspective for managers and policymakers. Firms and managers should design their servitization endeavors to incorporate a holistic approach to sustainability. Part of that should involve addressing how the firm could contribute toward a more positive normative, market, and legislative environment. Firms have the potential to shape customer demands for resource efficiency alongside changes in attitudes to ownership. Similarly, firms can leverage their position in the market and encourage positive mimetic pressures for other companies to adopt servitization models aligned with the circularity principles of resource efficiency and sustainability. In turn, the success of such business model designs and the ever-changing societal landscape can thus encourage further legislative developments and regulations for future circular economy and sustainability initiatives.

Managers should additionally recognize the pivotal role of circularity and servitization in contributing to sustainable development and the integration of ESG principles (Ortas, et al., 2015; Jahid et al., 2023). Managers seeking to implement corporate practices that have a positive impact should utilize ESG frameworks to facilitate circularity and servitization (Park and Jang, 2021). Managers are, therefore, encouraged to embed ESG principles into the fabric of their organizational decision-making processes. By prioritizing ESG factors in the design and implementation of servitized circular models, businesses can bolster their reputation, attract ethical investment, benefit from lower capital costs to sustain or grow their operations, and ultimately foster stronger relationships with stakeholders.

6.3. Implications for policy

The current research suggests policymakers integrate normative and mimetic pressures into their coercive regulatory controls to steer businesses toward sustainable practices. The CE initiatives of the EU have typically been broad in scope, which leaves a considerable amount of the implementation to be undertaken at the domestic level to reach supranational targets. Consequently, Europe now contends with a heterogeneous legislative landscape with varying degrees of coercive control and implementation. The cases outlined within this article suggest that

normative pressures contribute to a more resource-efficient servitization and circular business model design. Policymakers seeking to align policies with normative and mimetic pressures for these more sustainable models might adopt strategies that leverage societal expectations and industry norms and emulate successful practices. Legislative initiatives, such as those introduced by the EU under the Green New Deal program (European Commission, 2020a, 2020b) can be enhanced and strengthened by implementing stronger ecodesign directives that require businesses to design products and services with a focus on durability, repairability, and recyclability. Tax incentives and subsidies could be provided to companies that adopt resource-efficient practices and utilize closer cascading forms of servitized circularity.

Sustainability and circular economy initiatives should encourage awareness by fostering behavioral change within society as a whole. Leaders could harness normative pressures by promoting social awareness and fostering a culture of sustainability. Public awareness campaigns could target consumers to convey the environmental benefits of servitized circularity and encourage them to support businesses prioritizing resource efficiency. There are examples of progressive policies that have sought to utilize and enhance normative and social acceptance of such models. Examples can be found in Sweden, which has implemented policies to enhance normative and social acceptance of servitized circular models. The Swedish government has actively supported and facilitated collaborative initiatives where companies come together to create sharing platforms, enabling consumers to temporarily access products rather than owning them outright (Nordic Circular Hotspot, 2023).

Additionally, Sweden has integrated circularity principles into its public procurement policies, signaling to businesses that adopting circular practices is not only environmentally responsible but also aligns with societal values (Olsson and Öjehag-Pettersson, 2020). Furthermore, the Swedish government has invested in public awareness campaigns to educate consumers about the positive environmental and social impacts of choosing services over products (Nordic Circular Hotspot, 2023). By creating a normative expectation around servitization, these campaigns contribute to the societal shift toward a more service-oriented and circular economy.

7. Limitations and further research

While we hope our conceptual framework and illustrative case discussion offer valuable insights into the alignment between circularity and servitization, it is important to acknowledge some limitations. The assertions in this article need further validation through in-depth case studies that would enable more precise propositions that would also be suitable for quantitative investigation. In addition, the applicability of the framework to diverse industries and contexts requires further empirical validation and investigation of the conditions in which the institutional confluence is effective. Empirical research is thus encouraged to investigate the relationship between institutional confluence and the four roles highlighted in this article (trigger, shape, enhance, and inhibit). Such research should encompass servitization and circularity but also other factors shaping the business environment such as digitalization, artificial intelligence, or geopolitics.

We would also encourage further conceptual exploration of the alignment between circularity and servitization but also between them and actual sustainability and resource efficiency. Sustainably aligned and marketed circular firms have been criticized for sub-optimal environmental performance (Corvellec, et al., 2022). That might be attributable to deliberate obfuscation and greenwashing or the decoupling of rhetoric and objectives during actual CE implementation. In this article, we have attributed the principles of circularity to sustainable resource efficiency. However, latter cascading and resource-inefficient forms still dominate the landscape (Campbell-Johnston, et al., 2020). Further research should investigate how to advance the implementation of servitized circular business models that are coupled with resource efficiency.

Furthermore, future research considering the systems-driven perspective of the firm as an influential actor within the wider external world should investigate the impact of institutional confluence upon related paradigms. The topic should include the uptake of ESG and corporate social responsibility frameworks relevant to contemporary sustainability initiatives.

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CRediT authorship contribution statement

Daniel Stabler: Writing – review & editing, Writing – original draft, Investigation, Formal analysis, Conceptualization. **Henri Hakala:** Writing – review & editing, Supervision, Conceptualization. **Tuomas Huikkola:** Writing – review & editing, Supervision, Conceptualization. **Anne-Laure Mention:** Writing – review & editing, Supervision, Conceptualization.

Declaration of competing interest

We believe our paper "***Aligning Servitization and Circularity: The Role of Institutional Confluence in Sustainable Business Models*** would be good addition to your Journal of Cleaner Production special issue 'Sustainable servitization for a resource-wise manufacturing' and contribute to the academic discussion on sustainable servitization, which is important for scholars, practitioners, and policy-makers.

We contribute towards understanding the alignment of circularity and servitized business models. Using established theory and illustrative cases we discuss how external pressures affect the development of servitization-based business models, through novel concept of 'institutional confluence', defined as *a configuration of institutional pressures that enhance business model legitimacy to stakeholders and facilitate operational success*.

As a result, we contribute towards the gap highlighted in the call for papers for this special issue suggesting that the benefits and problems servitized circularity are not fully explored, and hope that our paper initiates further study on the external, institutional influences affecting servitization and sustainability business models.

We appreciate the opportunity to get feedback from the review process and look forward to any interactions.

Data availability

No data was used for the research described in the article.

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