ALIGNING CIRCULAR FASHION BUSINESS MODELS WITH THE EU TEXTILES STRATEGY

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Abstract: *This article examines how circular fashion business models can be aligned with the European Union policy framework for sustainable and circular textiles. It analyses resale, rental, repair-as-a-service, and product-as-a-service as distinct but complementary mechanisms for extending garment life, intensifying asset utilisation, and recovering post-consumer value. Methodologically, the study adopts a qualitative conceptual approach based on a thematic synthesis of academic literature, institutional reports, and EU regulatory documents. The discussion focuses on four interrelated dimensions: design for longevity and disassembly; the economic tension between growth and circularity, particularly the risk of sales cannibalisation; data governance and digital traceability through the Digital Product Passport; and reverse logistics as a precondition for value recovery. The analysis suggests that circularity is viable not as a single universal model, but as a category-specific portfolio of strategies whose performance depends on durability, residual value, operational costs, and the quality of product information. The findings further indicate that the most plausible transition pathway for fashion firms is a hybrid management model that combines conventional sales with repair, resale, rental, and take-back channels. Within the evolving EU regulatory environment, competitive advantage will depend less on symbolic sustainability claims than on the organisational capacity to integrate compliance, traceability, and lifecycle monetisation into a coherent business architecture.*

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1. Introduction

The transition of the fashion industry from a linear model of production and disposal to a more circular logic is being shaped by both environmental pressure and regulatory intervention. In the European context, this shift has acquired particular strategic importance. The Circular Economy Action Plan established product sustainability, waste prevention, and resource retention as central policy priorities (European Commission, 2015), while the EU Strategy for Sustainable and Circular Textiles extended these principles to the textile and apparel sector specifically (European Commission, 2022). More recently, the Ecodesign for Sustainable Products Regulation and the Digital Product Passport have reinforced the regulatory emphasis on durability, repairability, traceability, and producer responsibility (European Union, 2024). In parallel, revisions to EU waste policy affecting textiles and ongoing consultations on the implementation of the Digital Product Passport indicate that circularity is increasingly being translated into operational requirements rather than remaining a purely declarative objective (European Commission, 2025a, 2025b).

Against this background, circularity should not be treated solely as a normative aspiration. It is also a managerial and economic challenge. Fashion brands are required to reconsider how value is generated once garments are understood not as short-lived commodities, but as assets whose utility can be extended, recaptured, and redistributed. This raises several interconnected questions. Which circular business models are most appropriate for different apparel categories? How can firms avoid or manage the risk that circular offerings merely displace new-product sales? What technological and logistical infrastructures are required for circularity to function at scale? This article addresses these questions through a conceptual analysis of the strategic alignment between circular business models and the evolving EU textiles policy framework.

2. Literature Review

Strategic Transitions towards Circular Fashion

The contemporary fashion industry remains predominantly structured around a linear 'take-make-dispose' model, which is resource-intensive and environmentally damaging (Niinimäki et al., 2020). In response, the circular economy has been advanced as a restorative framework aimed at reducing material throughput, minimising waste, and retaining value for longer periods (Ellen MacArthur Foundation, 2017; Meshram, 2024; Niinimäki et al., 2020). Recent studies on sustainable garment design emphasize the practical application of sustainability principles in the development of clothing collections (Graur et al., 2025). The literature commonly distinguishes between narrowing resource use, closing material loops, and slowing product flows through longer periods of use (Niinimäki et al., 2020; Rahee & Sarker, 2024; Scripcenco & Pashkevich, 2020). Among these approaches, strategies that prolong the active life of garments are often presented as especially important because they preserve more of the embedded value of materials, labour, and design (Ellen MacArthur Foundation, 2024; Niinimäki et al., 2020; WRAP, n.d.). Redesign, reuse, and 3D prototyping may contribute to more efficient sustainable fashion practices by extending product value and reducing material waste (Scripcenco & Graur, 2024).

A substantial body of scholarship argues that circularity must begin at the design stage. Design for longevity, design for repair, and design for disassembly are repeatedly identified as core principles of circular fashion systems (Niinimäki et al., 2020; Rahee & Sarker, 2024). These strategies concern not only technical durability, but also what has been described as 'emotional durability', namely the capacity of a garment to remain culturally, aesthetically, and functionally meaningful over time (Ellen MacArthur Foundation, 2024; Niinimäki et al., 2020). Innovative solutions for disassembly, including technologies such as Smart Stitch™, further demonstrate that recyclability is closely linked to early design decisions (Rahee & Sarker, 2024; Resortecs, n.d.).

The literature also highlights the growing importance of business-model innovation. Product-service systems, including leasing, rental, take-back, repair, and resale, shift attention from one-off transactions to repeated value recovery across the product lifecycle (Ellen MacArthur Foundation, 2024; Niinimäki et al., 2020; Rahee & Sarker, 2024). Examples such as Patagonia's Worn Wear and other branded repair or resale platforms illustrate how firms can combine environmental positioning with customer retention (Patagonia, n.d.). At the same time, recent studies in the regional academic context have framed circular fashion not only as an industrial transformation, but also as a pedagogical

and cultural one, linking business-model transition to competence development, design innovation, and changing consumption practices (Scripcenco, 2025; Scripcenco & Borș, 2024; Scripcenco & Pashkevich, 2020).

Despite these advances, several gaps remain. First, there is still limited evidence regarding the extent to which circular offers complement or cannibalise primary-market sales (Ellen MacArthur Foundation, 2024; Niinimäki et al., 2020). Secondly, economically viable reverse logistics systems remain difficult to organise because they require dense collection networks, sorting capacity, and reliable information flows (Ellen MacArthur Foundation, 2017, 2024; Niinimäki et al., 2020). Thirdly, information asymmetry persists across supply chains, especially with regard to fibre composition, chemical content, and product history, which constrains reuse, repair, and recycling (European Union, 2024; Niinimäki et al., 2020; Rahee & Sarker, 2024). These gaps justify a closer conceptual examination of how policy, design, logistics, and business strategy intersect in the circular transition of fashion.

3. Methodology

This study employs a qualitative conceptual research design. Rather than testing a single empirical hypothesis, it synthesises academic literature, institutional reports, and regulatory documents in order to identify the principal strategic conditions under which circular business models may become viable in the fashion sector (Ellen MacArthur Foundation, 2024; Niinimäki et al., 2020; Rahee & Sarker, 2024). The article is therefore positioned as a narrative review with an analytical purpose: to clarify how economic, logistical, and regulatory considerations converge in the transition from linear to circular fashion systems.

The source base was organised into three categories. The first comprised peer-reviewed academic publications on sustainability, textile technology, circular product design, and environmental economics (Meshram, 2024; Niinimäki et al., 2020; Rahee & Sarker, 2024). The second included institutional and industry reports, especially those published by the Ellen MacArthur Foundation and WRAP, which provide influential conceptual frameworks and widely cited evidence on product lifetimes, value retention, and systemic redesign (Ellen MacArthur Foundation, 2017, 2024; WRAP, n.d.). The third category consisted of EU policy and regulatory documents related to circular economy governance in the textile sector (European Commission, 2015, 2022, 2025a, 2025b; European Union, 2024).

The material was analysed through thematic synthesis. Four analytical dimensions were used to structure the discussion: theoretical foundations of circularity; design and business-model strategies; technological and informational enablers, particularly digital traceability; and economic or organisational barriers, including reverse logistics and the risk of sales displacement. This framework makes it possible to assess circularity not as an abstract ideal, but as a set of operationally differentiated and economically conditioned pathways.

4. Results and Discussion

Circular business models in fashion differ according to how they extend product life, intensify product use, or transform ownership relations. Resale preserves value by moving garments into secondary markets after initial use. Rental increases the number of users per product and is most appropriate where garments have high symbolic or occasion-specific value but low repeat use by a single owner. Repair-as-a-service prolongs useful life by

keeping garments functional and desirable for longer periods. Product-as-a-service goes further by retaining ownership with the firm and monetising access, performance, or duration of use rather than the transfer of ownership (Ellen MacArthur Foundation, 2024; Niinimäki et al., 2020; Rahee & Sarker, 2024).

These models are not interchangeable. Their feasibility depends on garment category, material durability, hygiene requirements, care costs, aesthetic obsolescence, and consumer expectations. High-value staples, children's clothing, and premium outerwear are particularly suitable for resale because they retain both functional and symbolic value after first use. Rental is more compatible with occasion wear, maternity clothing, or high-fashion items whose individual wear frequency is structurally low. Repair is especially relevant for products whose longevity can be restored through relatively standard interventions, such as denim, leather goods, and outerwear. Product-as-a-service is most plausible where reliability, standardisation, and lifecycle control matter more than personal ownership, as in uniforms or performance gear.

The analytical significance of this classification lies in demonstrating that circularity is not a single business model, but a family of models. The strategic question is therefore not whether a brand should become circular in the abstract, but which form of circularity corresponds to the economics and materiality of its products.

Table 1. Circular Fashion Business Models

Model	Best-fit categories	Strategic strength
Resale	High-value staples, luxury, children's wear	High consumer trust; comparatively low carbon impact per transaction.
Rental	Occasion wear, maternity wear, high-end trends	Maximises users per product for items with low individual wear frequency.
Repair	Denim, outerwear, leather goods	Strengthens brand loyalty; supports durability and after-sales compliance.
Product-as-a-service (PaaS)	Performance gear, corporate uniforms	Suitable for high-utility items where reliability matters more than ownership.

Source: *Authors' elaboration based on Ellen MacArthur Foundation (2017, 2024), Niinimäki et al. (2020), and Rahee and Sarker (2024).*

One of the principal objections to circular fashion is the risk of cannibalisation. If a consumer rents, repairs, or purchases used garments, the firm may sell fewer new units. In a conventional linear model this appears threatening because revenue is tied to throughput. However, the cannibalisation argument becomes less decisive once the firm shifts from a volume-based logic to an asset-based logic. From this perspective, the relevant question is not how many new products are sold, but how much cumulative value can be extracted from a garment over time (Ellen MacArthur Foundation, 2017, 2024).

This shift has several implications. First, product durability acquires a different economic meaning. In a linear model, rapid turnover may sustain sales; in a circular model, low durability becomes a cost multiplier because it undermines resale value, repair viability, and service continuity. Secondly, recurring service interactions can deepen customer relationships. Repair, take-back, and resale platforms create repeated points of contact that may enhance customer lifetime value even when primary sales decline. Thirdly, profitability depends on disciplined unit economics. Circular models are viable only when residual product value exceeds the operational costs of cleaning, sorting, authentication, repair, redistribution, and digital administration.

For this reason, circular fashion should not be idealised. It does not automatically produce superior returns. Its economic promise is conditional and category-specific. Nevertheless, the shift from sales volume to asset utility offers an important conceptual bridge between sustainability objectives and business performance.

If circularity depends on keeping products in use longer and routing them intelligently through reuse, repair, or recycling pathways, then information becomes a strategic resource. Circular systems require not only physical products but also reliable product identities. Composition, provenance, care history, repair records, and end-of-life options all influence whether a garment can be authenticated, resold, repaired, or disassembled efficiently. In this context, the Digital Product Passport should be understood as an enabling infrastructure rather than a simple compliance label (European Commission, 2025b; European Union, 2024).

Its value lies in linking sustainability information to operational decision-making. For resale, traceability can support authenticity and pricing. For repair, it can provide material specifications and intervention guidance. For recycling, it can improve sorting decisions and reduce uncertainty regarding fibre composition. The Digital Product Passport is therefore relevant across the entire lifecycle of textile assets. However, the usefulness of digital traceability depends on data quality and interoperability. A passport populated with incomplete, inconsistent, or commercially inaccessible information will not support circularity in practice. The core challenge is therefore one of governance: who records the data, who verifies it, who can access it, and how these data move across brands, platforms, logistics providers, and recycling systems (European Commission, 2025b; European Union, 2024; Rahee & Sarker, 2024).

Reverse logistics constitutes another strategic condition of circularity. In linear production systems, the return of products from consumers to firms is usually treated as an exception or a cost. Circular systems reverse this assumption. Reverse logistics becomes a core capability because it determines whether post-consumer garments can be captured, assessed, and redirected towards their highest-value next use. In this sense, take-back schemes are not simply instruments of waste collection; they are mechanisms for asset recovery and material intelligence (Ellen MacArthur Foundation, 2017, 2024).

The economic significance of reverse logistics depends on sorting quality. Returned garments must be differentiated according to condition, authenticity, repairability, resale potential, and material recoverability. Each route has different value implications. A garment suitable for direct resale preserves more embedded value than one that must be processed into fibre feedstock. A garment that can be repaired and returned to circulation may generate both service income and future resale value. Reverse logistics should therefore be understood not as downstream waste management, but as part of the upstream resource strategy of the firm.

At the same time, reverse logistics is one of the most difficult dimensions of circularity to scale. Collection density, labour intensity, transport costs, cleaning requirements, and uneven product quality can rapidly erode margins. Consequently, the strategic success of take-back schemes depends not merely on their existence, but on how effectively they connect physical returns with digital information and economically differentiated treatment routes.

A realistic transition pathway for fashion brands is unlikely to involve abandoning new-product sales altogether. A more plausible scenario is the development of a hybrid management model that combines conventional sales with circular service and recovery channels. Such a model recognises that firms must operate simultaneously within two

temporalities: the current market logic of new-product transactions and the emerging logic of circular asset management.

This hybrid model can be conceptualised in three stages. The first is stabilisation, in which the brand improves durability, introduces repair capacity, and begins incorporating compliance costs into business planning. The second is diversification, in which the firm develops controlled channels for resale, rental, or take-back in order to retain value that would otherwise migrate to third-party platforms or disappear into waste streams. The third is optimisation, in which product data, reverse logistics, and service history are integrated into a coherent management system capable of anticipating maintenance needs, routing products efficiently, and informing improved design decisions in future collections.

The advantage of the hybrid approach is that it does not present sustainability and profitability as absolute opposites. Instead, it treats compliance, service provision, and lifecycle management as components of a new business architecture. The challenge, however, lies in organisational coherence. Circular activities must be embedded in product design, sourcing, after-sales service, and information systems. If they remain isolated pilot projects, they are likely to stay peripheral and financially fragile.

Despite the strategic appeal of circular fashion, several barriers remain. The first is technological. Textile recycling is still constrained by fibre blends, additives, and quality loss, which limit the transformation of garments into high-quality secondary raw materials (Niinimäki et al., 2020; Rahee & Sarker, 2024). The second is informational. Interoperable data standards across suppliers, brands, service providers, and recyclers remain underdeveloped (European Commission, 2025b; European Union, 2024). The third is behavioural. Consumers may express support for sustainable fashion while continuing to prioritise low prices, novelty, and ownership. This gap between declared values and actual purchasing behaviour complicates the scaling of rental and service-based models.

A fourth barrier concerns cost distribution. Reverse logistics, repair systems, and digital traceability infrastructures require substantial upfront investment, yet the financial returns may emerge only gradually. Large brands may absorb these transition costs more easily than smaller firms. This raises an important policy question: whether regulation alone is sufficient, or whether circular transition also requires coordinated incentives, common technical standards, and support for innovation in material recovery, digital infrastructure, and business-model experimentation.

5. Conclusions

The transition towards circular fashion represents a structural redefinition of how value is created, retained, and measured in the textile industry. It cannot be reduced to recycling rhetoric or isolated sustainability initiatives. Rather, it requires the alignment of business models, material design, information systems, and logistics infrastructures with a policy framework that increasingly rewards durability, transparency, and responsibility for post-consumer outcomes.

The analysis developed in this article suggests that circularity becomes most persuasive when garments are managed as long-lived assets rather than one-time sales units. In such a framework, resale, rental, repair, and product-as-a-service are not peripheral additions, but alternative mechanisms for value extension and recovery. Their success, however, remains

contingent upon product category, data integrity, operational discipline, and the economic design of return and service systems.

For fashion brands operating within the European regulatory environment, the central lesson is clear: the competitive advantage of circularity will not arise from symbolic green positioning alone. It will depend on the organisational ability to integrate compliance, traceability, and lifecycle monetisation into a coherent, credible, and scalable business model.

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