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Transformative Approaches to Sustainability: Case Studies in Industry Strategy and Service Design

Shuo-Fang Liu and Yu-An Chen

Department of Industrial Design, National Cheng Kung University, Tainan, Taiwan

ABSTRACT

Since the Industrial Revolution, industries have evolved through multiple transformations, with corporate sustainability emerging as a global priority. The rise of ESG and the UN's 2030 Sustainable Development Goals (SDGs) has increased regulatory demands, particularly for small and medium enterprises (SMEs), requiring them to adopt sustainability reporting and strategic policies. This study explores the intersection of service design and sustainable transformation, analyzing how innovative design approaches can support corporate sustainability efforts. The research examines international sustainability policies and their impact on business operations through a literature review and case study analysis. Semi-structured interviews with sustainability consultants and corporate officers will uncover key service strategies and business models in sustainability-driven enterprises. The findings will identify gaps between corporate sustainability implementation and international goals, offering practical insights for SMEs and sustainability professionals.

Keywords: Sustainability transformation, Industry strategy, Service design, ESG practices, Circular economy

INTRODUCTION

The evolution of Environmental, Social, and Governance (ESG) principles and initiatives, such as the United Nations' 2030 Sustainable Development Goals (SDGs), has accelerated corporate efforts toward sustainable transformation (United Nations, 2015). As industries face increasing pressure to integrate sustainability into their operations, the demand for innovative approaches to bridge strategic gaps has become more evident (Eccles & Klimenko, 2019).

Taiwan's industrial landscape, particularly among small and medium-sized enterprises (SMEs), is undergoing a shift toward sustainability reporting and policy implementation. Many countries, including Taiwan, have introduced mandatory sustainability disclosure requirements, aligning corporate reporting with the Global Reporting Initiative (GRI) and the Task Force on Climate-related Financial Disclosures (TCFD) (GRI, 2021; TCFD, 2017). However, many businesses struggle to align their sustainability

strategies with these evolving standards while maintaining operational efficiency.

Service design methods offer a potential solution by providing tools to enhance sustainability-related business processes and customer engagement. Service design emphasizes holistic, user-centered innovation, enabling organizations to develop more effective and sustainable solutions through iterative co-creation processes (Stickdorn & Schneider, 2018). In the sustainability context, service design can assist businesses in developing circular economy models, optimizing supply chain sustainability, and improving stakeholder collaboration (Bocken et al., 2016).

CURRENT STATE OF CORPORATE SUSTAINABILITY TRANSFORMATION AND ESG DEVELOPMENT

The concept of Corporate Social Responsibility (CSR) has gradually been integrated into corporate business models, encouraging companies to consider environmental and social impacts alongside economic benefits (Schaltegger et al., 2016). With increasing global emphasis on sustainability, enterprises are shifting from traditional CSR approaches toward Environmental, Social, and Governance (ESG) strategies, aligning with international regulatory frameworks and market demands. In Taiwan, the Taiwan Stock Exchange (2023) mandates that publicly listed companies exceeding a certain market value must disclose sustainability reports, further propelling businesses toward ESG implementation. However, small and medium-sized enterprises (SMEs) continue to face challenges in sustainability transformation, including limited resources, a shortage of sustainability professionals, and market adaptation difficulties (Geissdoerfer et al., 2018).

One critical strategy facilitating corporate sustainability is Green Supply Chain Management (GSCM), which integrates environmental considerations into supply chain operations to enhance both ecological and business performance (Vijayvargy, Thakkar & Agarwal, 2017). With the increasing prominence of sustainable development, GSCM has been widely studied in academia and adopted in corporate practices. Studies conducted in India reveal that SMEs demonstrate similar levels of GSCM adoption as large enterprises, but improvements are still needed in environmental management systems and supplier evaluation mechanisms (Vijayvargy et al., 2017).

THE ROLE OF SERVICE DESIGN IN SUSTAINABLE TRANSFORMATION

Service design plays a pivotal role in corporate sustainability transformation, especially in supply chain management and green procurement. By emphasizing a user-centered approach, service design applies design thinking methodologies to optimize service processes and improve operational efficiency (Stickdorn & Schneider, 2012). For example, in supply chain management, service design can enhance green procurement processes, reduce environmental impact, and increase business competitiveness (Carter & Rogers, 2008).

Additionally, service innovation contributes to the development of sustainable business models, particularly in Business-to-Business (B2B) markets. Through service design, companies can integrate supply chain information, improve carbon footprint management, and strengthen overall environmental sustainability within industry ecosystems (Seuring & Müller, 2008). Compared to Business-to-Consumer (B2C) markets, the impact of green procurement is significantly broader in B2B markets, presenting a greater potential for future growth.

INTERNATIONAL CASE STUDIES IN INDUSTRIAL SUSTAINABILITY TRANSFORMATION

Several internationally recognized enterprises have successfully implemented sustainable transformation strategies by incorporating service design and circular economy principles into their business models

Fairphone, an electronics company, exemplifies circular material technologies and a sustainable supply chain approach, emphasizing carbon footprint reduction and ethical labor practices in raw material extraction (Bocken et al., 2016).

Philips pioneered the "Light as a Service" model, shifting from selling products to providing lifetime maintenance services for lighting systems, reducing waste and promoting long-term sustainability (Mont, 2002).

Delta Electronics, a leading Taiwanese company, has actively developed green energy solutions and carbon footprint data management platforms, establishing itself as an ESG benchmark in the international market (Delta Electronics, 2023). Repair Café, a community-driven initiative, exemplifies a grassroots approach to circular economy principles, promoting product reuse and extending product lifecycles through local repair workshops (Van der Laan & Aurisicchio, 2019). Repair Café (Van der Laan & Aurisicchio, 2019).

Table 1: Service design models in international industrial sustainability strategies.

Company	Industry	Service Design Model
Fairphone	Electronics	Circular Supply Chain & Ethical Sourcing
Philips	Lighting & Electronics	Product-as-a-Service (PaaS) - "Light as a Service"
Delta Electronics	Green Energy Solutions	Data-Driven ESG Platform & Energy Efficiency Services
Repair Café	Community-Based Initiative	Collaborative Repair & Circular Economy Workshops

METHODOLOGY

This study adopts a qualitative research approach, utilizing literature review and focus group interviews to analyze the application of industry strategies and service design in corporate sustainability transformation. The research is structured into three main phases: literature analysis, interview data collection and coding, and results analysis.

A semi-structured interview approach is employed to gain in-depth insights into corporate strategies and challenges in sustainability transformation and to explore how service design influences corporate sustainability service models.

To ensure a diverse range of perspectives, interviewees are selected from different types of enterprises, including Founder of a sustainability consulting firm specializing in corporate ESG transformation and industry matchmaking services. Project manager of a green procurement e-commerce platform, responsible for promoting ESG-compliant products and supply chain management. Service designer providing circular packaging solutions and advocating for corporate procurement sustainability.

To guide the interviews, this study employs a How Might We (HMW) approach, structuring the inquiry around four key themes:

Enhancing intrinsic ESG motivation: Exploring how businesses can proactively engage in ESG transformation beyond regulatory compliance.

Clarifying ESG procurement standards: Identifying challenges in sustainable sourcing and opportunities for standardization.

Improving ESG partnership matchmaking: Examining how service design can facilitate effective collaboration within ESG ecosystems.

Encouraging AI adoption in ESG procurement: Investigating barriers and opportunities for AI-driven decision-making in sustainability practices.

RESULT AND DISCUSSION

Corporate ESG transitions are largely driven by government regulations rather than internal motivation, with high-carbon industries being the most proactive in adapting due to compliance pressures. However, the lack of standardized ESG processes presents a major challenge, making implementation inconsistent and complex. Many businesses still exhibit low sustainability awareness and market acceptance, further slowing adoption.

To address ESG procurement needs, companies are increasingly seeking standardized green procurement mechanisms and turning to B2B platforms for structured sourcing. However, uncertainty remains regarding how to evaluate ESG-compliant suppliers, highlighting the need for clearer guidelines and certification frameworks. Some organizations are assisting by providing ESG-compliant product selection and integrating storytelling marketing to enhance appeal.

In ESG implementation, many businesses rely on matching platforms or consulting services to connect with sustainability partners. Membership-based models are gaining traction, helping companies reduce sourcing costs and enhance participation. E-commerce platforms are also emerging as facilitators of B2B green procurement, streamlining access to sustainable products.

While AI has the potential to enhance procurement efficiency and ESG compliance, corporate adoption remains cautious and limited. Companies are still in the early stages of evaluating AI-driven selection tools, with concerns over credibility and accuracy hindering full-scale implementation.

This suggests a need for further refinement and trust-building before AI becomes a mainstream solution in ESG procurement.

Table 2: Summarizing the key themes derived from the interviews.

Theme	Interview Content	Key Findings
Challenges in ESG Transition	"Most companies are motivated by government policies rather than driven by their own initiative."	Corporate ESG transitions are primarily policy-driven.
Green Procurement Needs	"Some companies still lack perpetuity awareness and market acceptance needs to be improved." "Carbon footprint audit demand is the highest."	Companies seek standardized ESG supplier selection.
Matching and Service Models	"Membership-based matchmaking services can help companies find the right ESG partners." "Companies lack green procurement standards, and we hope you can provide a feasible screening mechanism."	Businesses prefer consultant-based or membership-based ESG solutions.
AI in Green Procurement	"Companies' interest in AI tools to screen sustainable products is still in the wait-and-see stage." "If AI can help us screen suppliers, it would be valuable."	Companies are hesitant about AI tools in ESG selection.

CONCLUSION

Corporate ESG transitions are primarily policy-driven, with international frameworks such as GRI, TCFD, and CSRD promoting standardized reporting. However, unclear guidelines and fragmented supply chain practices make implementation difficult for many companies. High-carbon industries are actively adapting to meet regulatory requirements, yet supplier evaluation and green procurement standardization remain critical challenges. Compared to global leaders integrating sustainable supply chain management, SMEs still lack structured mechanisms to assess ESG compliance, creating a gap between policy expectations and practical execution.

Service design plays a key role in facilitating ESG transitions, providing user-centered, scalable, and systematic solutions for B2B green procurement, sustainable logistics, and circular economy initiatives.

By integrating structured service models, corporate matchmaking, and sustainability consulting, businesses can more effectively align with international ESG policies. Future research should explore how service design methodologies can enhance ESG adoption across industries and leverage big data tools to help real-world corporate transformation strategies seamlessly align with sustainability policies through standardized frameworks.

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