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EMBEDDING SUSTAINABLE VALUES IN THE HIGH-END MARKET THROUGH PREMIUM DESIGN.

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ABSTRACT | The sustainability challenge is one of the most pressing issues facing our world today, encompassing various environmental, social, and economic concerns. Addressing sustainability complexities necessitates a profound and radical transformation of our development model. This transformation involves not only production processes but also patterns of consumption and access to goods and services (United Nations, 2023). Design has emerged as a powerful tool to address these sustainability challenges (Walker, 2006; Bhamra & Lofthouse, 2007). Pioneering this integration of design and environment in 1985, Victor Papanek introduced profound environmental considerations into the design realm (Papanek, 1985). Building upon Papanek's legacy, the evolution of design for sustainability unfolded gradually from the early 1990s to the contemporary era, marked by diverse approaches and frameworks across different scopes and scales of innovation. In 2016, Adams et al. revealed a transformative shift from a narrow technical and product-centric orientation to an emphasis on system-level changes, addressing sustainability as a challenge to be tackled at a socio-technical-ecological system level (Ceschin & Gaziuluoy, 2020).

Confronted with an imperative challenge that demands immediate attention, the high-end market landscape is progressively under pressure and intensifying in its competitiveness. How to create new values in line with contemporary consumers and bring meaningful changes through design with a premium push to attain a long-term sustainable impact has emerged as a crucial subject for leading companies and organizations (Hemmings, 2019). The premium design encapsulates superior material quality, functional efficacy, and aesthetic allure into the fabric of products and services, thereby augmenting their perceived value and desirability within the high-end domain. It requires a delicate balance between shared value and banalization, ensuring quality preservation in the availability of products and services to a broader audience without diluting their fundamental essence (Ingaramo, 2022). This approach can mitigate irrational economic and environmental impacts through resource optimization while enhancing product quality and service efficiency. It resonates with consumers who value quality and ethical, environmentally conscious lifestyles and promotes the market's transition towards sustainable practices.

This paper employs a combined methodology, comprising a literature review and case studies, to elucidate the intricate interaction of the premium design approach across multiple design for sustainability levels. It aims to investigate the potential perspectives of such an approach in embedding sustainable values in the high-end market, ranging from product to service and social system spheres. The authors wish to offer valuable insights that can be used as a reference by fellow researchers engaged in exploring sustainability-focused design across relevant domains.

1. Introduction

The sustainability challenge is one of the most pressing issues facing our world today, encompassing various environmental, social, and economic concerns. Despite the declaration of a “code red for humanity” (United Nations, 2021) in the climate emergency, the prevailing trajectory diverges from the critical objective of limiting global warming to 1.5 degrees, posing a risk of exceeding 3 degrees by 2100 (COP26, 2021). While some progress is evident, an urgent call for decisive action to curb global temperature increases to the vital 1.5-degree threshold persists. A paradigm shift is imperative, emphasizing the transition from mere commitments to immediate, tangible actions, aligning economies with the natural world for a sustainable future. Effectively addressing the complexities of sustainability demands a profound and radical transformation of our development model, impacting production processes, consumption patterns, and access to goods and services. “We cannot simply continue with more of the same and expect a different result” (United Nations, 2023, p. 4). As emphasized by O’Brien, achieving comprehensive climate action requires a multifaceted transformation. Beyond technical and behavioral adjustments, a compelling need exists to reconfigure political structures, reshape belief systems, evolve values, and reconsider worldviews and personal behaviors (2018).

Confronted with an imperative challenge that demands immediate attention and action, the high-end market landscape is progressively under pressure and intensifying in its competitiveness. Most major advertisers have committed to achieving net zero by 2050, if not sooner. This commitment is mirrored globally among many leading brands, who have undertaken the pledge to achieve net-zero targets by 2050 or even sooner. Notably, a significant shift in climate action is observable within the Fortune Global 500. Thirty percent of these influential companies have either successfully achieved or publicly committed to ambitious climate goals by 2030, signifying a substantial rise from the relatively meager 6 percent reported in 2016 (Lu, 2021). In today’s dynamic business environment, brands are actively steering away from “greenwashing” while guiding their consumers in transforming sustainable intentions into concrete action through impactful, transparent, and positive messaging. Creating new values aligned with contemporary consumers and bringing meaningful changes to attain a long-term sustainable impact has become crucial for leading companies and organizations (Hemmings, 2019). Design, in the current landscape, has emerged as a potent tool in facilitating and driving such transformation (Walker, 2006; Bhamra & Lofthouse, 2007).

2. The Essence of Sustainable Design

Pioneering this integration of design and environment in 1985, Victor Papanek introduced profound environmental considerations into the design realm (Papanek, 1985). He critiqued the consumer-driven nature of design, challenging the prevailing consumerist culture and calling for a more mindful and responsible approach to creating products. In line with the title of his book “Design for the Real World,” Papanek underscored designers’ social and environmental responsibility, urging them to be agents of positive change, advocating for social and environmental justice through their work and emphasizing meeting the real needs of social communities. Building upon Papanek’s legacy, the evolution of design for sustainability unfolded gradually from the early 1990s to the contemporary era, marked by diverse approaches and frameworks across different scopes and scales of innovation. A study by Adams et al. found that the literature surrounding sustainable innovation has traditionally centered on technical solutions and gradual adjustments. However, recent perspectives highlight a shift towards people-centered innovation, viewing sustainability as a socio-technical challenge. Early emphasis on technical responses has evolved into a more comprehensive and systemic understanding, extending to a broader socio-economic system. Leading entities in this field now embrace novel business models and services with technological solutions (Adams et al., 2016). Building upon such insights, Ceschin and Gaziuluoy have expanded the design for sustainability framework by introducing an advanced innovation level. This elevated perspective envisions an earth-centric approach that comprehensively integrates socio-technical-ecological systems. Emphasizing a holistic view directs attention towards ongoing transitions, reflecting a forward-thinking stance in pursuing sustainable design (Ceschin & Gaziuluoy, 2020). As we progress into the upcoming

decades and witness the establishment of new dynamic equilibriums, another question emerges: What will define the essence of sustainable design in these post-transition contexts. Sametinger suggests that such essence may lie in interdisciplinary knowledge, the ability to transcend boundaries, and intrinsic motivation for ethical design practices, moving towards a “post-sustainable” (Sametinger, 2019, p. 41) design perspective: “sustainability by default” (Ibid.), which signifies that the fundamental values and principles of sustainability are seamlessly integrated into the design, constituting an inherent aspect rather than an additive element in the design process.

Defaults, in this context, encompass pre-established options individuals encounter, either predetermined or automatically assigned. Faced with these default choices, individuals often accept them without actively exploring alternatives (Smith et al., 2013). In behavioral science and marketing, default settings are potent tools to influence human behavior and capture a broader market share (Thaler & Sunstein, 2008). Within the design domain, practitioners and researchers are responsible for adeptly incorporating and standardizing this influential tool. This involves integrating sustainable values and principles into the design process “without awareness,” streamlining the decision-making process for consumers to choose sustainability and facilitating the adoption of sustainable lifestyles.

In the premium market and beyond, promoting sustainability as the default and superior choice for consumers is termed “eco-accidentalism” (Holmes, 2022). This concept involves inadvertently encouraging environmentally conscious decisions, making sustainable options the default and the best selections in various marketplaces. The emergence of the notion is rooted in many research findings revealing a pronounced disparity between consumers’ professed intentions and their actual spending behavior (IBV, 2022). Despite over half of consumers expressing a willingness to pay a premium for environmentally responsible brands (Orrell et al., 2021), a significant gap exists between their stated preferences and purchasing actions. To mitigate such a gap and fulfill unmet consumer needs, strategic initiatives must be directed toward overcoming obstacles throughout the consumer journey. By augmenting the accessibility of sustainable options while upholding product quality standards and facilitating a smoother transition for consumers, companies would have the potential to harmonize and influence consumer preferences, and consequently address environmental concerns and align with consumer demands within the market. This explains why the strategy of “eco-accidentalism” comes to the forefront as a potentially practical solution (WARC, 2022).

3. Premium Design: An Eco-Accidental Approach

The design discipline has undergone extensive exploration, evolving from its initial focus on endowing tangible objects with value to encompassing services and, more contemporarily, entire lifestyles (Celaschi, 2000). Design, in essence, involves imbuing products with material, functional, and aesthetic qualities, fostering a connection between form, functionality, materials, and surfaces. Throughout its evolution, these design elements have transitioned from mere characteristics to potent tools for enhancing the perceived value of goods and overall user experience within the marketplace. This evolution has intricately linked design with notions of high quality and luxury, which extends beyond the economic realm, forming a systemic landscape of values that attract, influence, and fulfil human needs, giving rise to a widely recognized premium paradigm (Volli, 2012; Harman, 2018).

In the contemporary landscape, the accessibility of high-end products and services has undergone a profound shift, evolving into a spontaneous, attainable experience by dismantling entry barriers. This evolution extends the potential for luxury to the middle class and the newly wealthy, less tethered to economic status but more to customer satisfaction (Bain & Company, 2021). The democratization of high-end markets signals a fading social stratification, granting everyone access to luxurious and exclusive experiences (Kapferer & Bastien, 2012). The concept of “premium” seamlessly aligns with this transformative narrative. Rooted in the Latin word “*praemium*,” denoting prize or reward, the term “premium” draws connections to attractiveness, ambition, and peer competition, where rewards are consequential to individual efforts and choices. Within the premium paradigm, the economic value represents only one aspect; the further importance lies in the acknowledgment

that extends from material to societal value transformations, which guides consumers to (un)consciously select and enrich a multi-dimensional user experience (Teil, cited in Kapferer and Bastien, 2012, p. 79).

In today's voracious and redundant consumerist society, values once deemed distant from high-end products are now recognized as distinctive imperatives. They play a pivotal role in enhancing and imbuing positivity into the overall consumer experience and utilizing products and services. Leading organizations and companies are currently emphasizing novel values to attract and retain a fresh wave of consumers. In this evolving context, premium design is ideal for elevating the consumer experience and integrating with this transformative reality. The premium design encapsulates superior material quality, functional efficacy, detail sophistication, and aesthetic allure, enriching products and services' perceived value and desirability in the high-end domain. It requires a delicate balance between shared value and banalization, ensuring that products and services maintain their quality even as they become accessible to a broader audience without compromising their fundamental essence (Ingaramo, 2022). Such an approach optimizes resources, mitigates irrational economic and environmental impacts, and encourages socio-technical innovation to enhance product quality and service efficiency. Nowadays, consumers anticipate and actively seek out this formula, which can resonate particularly well with those who value quality, ethical practices, and environmentally conscious lifestyles, fostering a market transition towards sustainability. The following sections present four case studies to explain this concept better.

3.1 Orange Fiber: An Innovative Citrus-Based Fabric

Orange Fiber is a Sicilian company founded in 2014. Since its inception, it has been driven by a mission to actively contribute to an environmentally friendly future for the textile industry. The story of this start-up of two young Sicilian women started with the idea of utilizing "pastazzo," the residue remaining after citrus juice production, which constitutes a substantial 60 percent of the fresh fruit's weight, to create a sustainable and vitamin-rich fabric. Their groundbreaking journey began in 2012 when, in collaboration with the Politecnico di Milano, they developed an innovative process capable of transforming over 700,000 tons of waste generated annually by Italy's citrus processing industry into high-quality fabric. Unlike current artificial cellulosic fibers, this solution significantly curtails the exploitation of land and water, along with the usage of environmentally harmful pesticides (Caruso, 2014). Commencing in Sicily, cellulose is extracted from citrus pulp, marking the initial step. Subsequently, the extracted cellulose embarks on a journey to Spain, where a strategic partner transforms it into yarn. The journey comes full circle as the processed yarn returns to Italy, specifically to a Como weaving mill. Here, it undergoes the final transformation into a luxurious and sustainable fabric tailored for the fashion-luxury sector (Blueislands, 2017).

Throughout the years, their transformative and sustainable initiatives have earned them numerous awards, demonstrating that innovative thinking, collaboration, and a dedication to sustainable practices can not only align with industry demands but also foster a positive global sustainable impact. Orange Fiber, patented in Italy in 2013, took a significant stride by registering its trademark the following year—a pivotal move in discerning products featuring their exclusive yarns and fabrics. With dedicated labels, end consumers can effortlessly identify garments and furnishings crafted from Orange Fiber's citrus fabrics, showing the brands committed to their innovative and sustainable materials (Ibid.).

In 2017, Salvatore Ferragamo launched a capsule collection in collaboration with Orange Fiber on the 47th Earth Day (Figure 1). Made in Italy, luxury fashion, premium design, and sustainable practice—all these elements are encompassed in this "Responsible Passion" project (Giannetto, 2017). The impeccable quality of Orange Fiber mirrors the luxurious appearance and tactile elegance of silk, the exquisite prints crafted by Italian designer Mario Trimarchi, and the distinctive style synonymous with the Salvatore Ferragamo Maison converge to create an exclusive collection reminiscent of a poetic ode to the Mediterranean lifestyle (Ferragamo, 2017). Orange Fiber's commitment to transforming waste products destined for disposal into sustainable and enchanting fabrics showcases a remarkable blend of innovation, environmental responsibility, and community engagement. The company's journey exemplifies how creative solutions and strategic partnerships can contribute to a more sustainable and circular future for the textile industry.



Figure 1. Ferragamo Orange Fiber Collection S/S 2017. Source: mariotrimarchi.design.

3.2 La Compagnie: An Exclusive All-Business-Class Airline

La Compagnie, a distinguished French boutique airline founded in 2013, is dedicated to revolutionizing business aviation. Operating as an exclusive all-business-class airline, it provides flights to New York from Paris, Nice, and Milan, aiming to redefine business class with a personalized travel experience at an affordable rate. In contrast to conventional aircraft with a seating capacity of 230 seats, La Compagnie's Airbus A321neo features a spacious 2-2 layout accommodating only 76 seats (Figure 2). This design prioritizes passenger comfort, offering fully reclining seats that transform into horizontal beds measuring 192cm in length, complemented by a luxurious, thick overlay. The Airbus A321neo distinguishes itself as an efficient, quieter, and environmentally sustainable aircraft, boasting a remarkable 30 percent reduction in fuel consumption compared to its predecessors, emitting a carbon footprint that is 20 to 30 percent lower than competitors flying similar routes (BARR, 2023). Additionally, La Compagnie's ticket prices are approximately 30 to 50 percent more economical than the business class offerings of other carriers, changeable tickets at no extra cost (Ibid.). In 2022, the airline achieved an average load factor of about 75 percent, reaching 80 percent during the summer peak. The seasonal route from Nice to New York excelled with an impressive 85 percent load factor (AirGuide, 2023). These robust load factors instill confidence in La Compagnie for future growth and the launch of new routes.

Regarding the demographics of travelers, the airline reports a well-balanced mix of American leisure and European business travelers. Designed for stress-free journeys, the entire travel experience encompasses expedited airport departures through time-saving fast tracks, creating a seamless transition to the onboard ambiance and in-flight atmosphere. Safety instructions are creatively delivered through an emotional yoga-style video, and each seat is furnished with an extra-large 15.6-inch screen display. The fast satellite unlimited wifi connection ensures uninterrupted streaming. The specialized "bistronomic" cuisine offers extensive special request meal options prioritizing passengers' health. Every tiny detail contributes to creating a comfortable and smart journey, ensuring the "Relax Onboard" experience (La Compagnie, 2023, p. 15)

La Compagnie's business model thrives on a flexible and premiumised structure, utilizing modern and efficient aircraft to capture business clientele and a substantial portion of the leisure market. Christian Vernet, CEO of La Compagnie, underscores their services' uniqueness and special nature, coupled with fare

flexibility, catering to a diverse audience that extends beyond business to include leisure travelers. Their focus on the “creative class,” encompassing individuals in startups, design, fashion, art, and the broader lifestyle realm, sets them apart. Vernet emphasizes the privileged perspective they have on this creative class. La Compagnie’s offerings are complemented by an optimal timetable, maximizing arrival and departure times, which is especially beneficial for business travelers. In essence, the airline distinguishes itself from competitors by providing superior travel comfort and user-friendly experiences. Vernet characterizes La Compagnie as a “Smart Business,” highlighting their competitiveness in terms of costs and agility, a significant advantage over rivals in the business class travel sector (Incorvati, 2023).



Figure 2. La Compagnie’s Relax Onboard experience. Source: lacompagnie.com.

3.3 NEXT: A Future Smart Transportation System

Established in 2017, NEXT Future Transportation stands as a pioneering Italian startup on a mission to revolutionize the field of road transport (Figure 3). The seeds of its groundbreaking concept were sown in 2012 by Tommaso Gecchelin, the visionary designer and founder of NEXT. He envisioned a prototype of self-driving vehicles for public transportation, with the audacious goal of seamlessly blending the convenience and sustainability inherent in buses with the nimble flexibility characteristic of taxis. The journey from conceptualization to realization gained momentum in 2015 when Tommaso Gecchelin found a crucial ally in Silicon Valley, the company’s co-founder Emmanuele Spera. Their collaboration catalyzed the ambitious vision into a tangible and transformative project (Perfetto, 2015). Together, they embarked on a mission to redefine the future of transportation, combining innovative design and cutting-edge technology to create a dynamic and sustainable solution for the evolving urban mobility needs.

NEXT has ingeniously engineered a modular bus equipped with electric modules that seamlessly connect and disconnect as needed. This cutting-edge design enables the bus to operate autonomously without a driver, ensuring total security and compliance with permissible areas. The hallmark of this innovation lies in the dynamic modularity, allowing these modules to seamlessly connect and detach on standard urban roads, creating an open corridor when joined. Passengers benefit from the freedom to stand and move effortlessly between modules. These modules follow a shared route before detaching based on passengers’ selected destinations, facilitated through a dedicated app (Gecchelin, 2023). The dynamic modularity ensures omnipresence and adaptability, akin to a personal car. Each vehicle can comfortably accommodate up to 10 passengers (six seated, four standing), measuring two and a half meters. Crafted

with a blend of lightweight yet durable aluminum, featuring four steering wheels, and powered by electricity, these buses provide enhanced coverage in geographically dispersed areas, elevating the overall level of comfort (Mazzucco, 2020).

In forward-thinking cities like Dubai, the concept of modularity introduces a paradigm of on-the-move transshipment. This dynamic approach optimizes system capacity, resulting in a substantial reduction of over 60 percent in fuel consumption, operating costs, and traffic congestion. Simultaneously, it enhances capillarity and passenger comfort, emulating an advanced on-demand shared taxi system free of intermediate stops and waiting times (Maci, 2020). The versatility of NEXT extends beyond sophisticated urban settings to simpler and easily implementable scenarios, such as the “variable capacity bus” concept. In this scenario, the bus driver dynamically adjusts the number of docked modules for traditionally scheduled services based on real-time data from NEXT. Even without autonomous driving and multiple drivers, this adaptive supply-to-demand approach ensures significant energy and maintenance cost savings, surpassing 50 percent (Gecchelin, 2023).

NEXT envisions a paradigm shift in the field of transportation, elevating it beyond a mere utility to become a living embodiment of “life in motion.” NEXT’s adaptability and transformative potential extend beyond conventional transportation, permeating domains such as retail and on-the-move services, healthcare, security, cargo transport, and airport services (Ibid.). More than just a mode of transport, NEXT represents a comprehensive solution. Its premium design and forward-thinking approach position NEXT as a catalyst for reshaping how we perceive and experience the journey, transcending traditional boundaries, and ushering in a new era of vibrant and seamlessly integrated mobility solutions.



Figure 3. NEXT modular, sustainable transportation solution. Source: (up) topsimages.com (down) aisociety-unipd.it.

3.4 The Line: A Revolutionary Vertical City

Nestled within the visionary Neom project in Saudi Arabia, The Line emerges as a groundbreaking linear smart city, stretching 170 kilometers across captivating landscapes, from the majestic mountains of NEOM to the enchanting Red Sea (Figure 4). This revolutionary urban development, a pivotal part of the Saudi Vision 2030 initiative, is designed with a singular purpose – to redefine the very essence of cities and urban living. Unlike traditional cities, The Line boldly discards the conventional concepts of roads, cars, and emissions. It is a cognitive city, standing as a mirrored architectural masterpiece soaring 500 meters above sea level, yet ingeniously compact with a land-saving width of only 200 meters. Its innovative design ensures a harmonious coexistence with nature, dedicating 95 percent of the land to preservation while operating entirely on 100 percent renewable solar, wind, and hydrogen energy. Excavation work, initiated along the entire length of the project by October 2022, signifies the ambitious vision of creating a city prioritizing the health and well-being of its residents over traditional transportation and infrastructure

concerns. The Line's blueprint envisions a utopian population of 9 million, comprising 25 percent of Saudi Arabia's current populace. The Line's reduced infrastructure footprint, spanning a mere 34 square kilometers, promises unparalleled efficiencies in city functions. This forward-thinking city ensures residents' convenience with daily essentials accessible within a five-minute walk and a high-speed rail facilitating an end-to-end transit time of just 20 minutes.

The ideal climate throughout the year further enhances the residents' experience, allowing them to blend with the surrounding nature seamlessly. As a pivotal component of the larger \$500 billion Neom project, The Line embodies the principles of sustainable urban development, stands as a testament to the transformative power of innovation, and underscores a bold vision for future cities (NEOM, 2022).

The Line introduces a revolutionary urban design paradigm, embodying the concept of zero-gravity urbanism, which means minimizing reliance on the natural ground plane by establishing multiple vertically organized ground planes at elevated heights (Barandy, 2022). Unlike conventional tall buildings, The Line's innovative approach abandons the classification idea of zones and lays various city functions vertically, integrating living, working, studying, and entertaining synergetically. Residents can effortlessly navigate in three dimensions—up, down, or across—to access all their daily needs within a convenient five-minute radius. This innovative morphology ensures equal access to public services and amenities for residents from all backgrounds, allowing them to choose living preferences either vertically or along its length based on personal preference (Ibid.).

This forward-thinking cityscape features an outer mirror facade that not only allows for captivating views and natural sunlight but also bestows a unique identity, seamlessly merging with nature despite its compact size. The Line's groundbreaking blueprint disrupts conventional urban design by fully digitizing the city's plans and embracing significant industrialization in construction processes. This entails pioneering advancements in construction technologies and manufacturing methods, signaling a departure from the norm. While facing criticism for deviating from traditional urban design and concerns regarding sustainability and feasibility, the realization of The Line holds the potential to revolutionize our way of life, echoing the words of Mohammed bin Salman, Crown Prince of Saudi Arabia and Chairman of the NEOM Board of Directors, who envisions, "The Line will tackle humanity's challenges in urban life today and will shine a light on alternative ways to live" (NEOM, 2022).

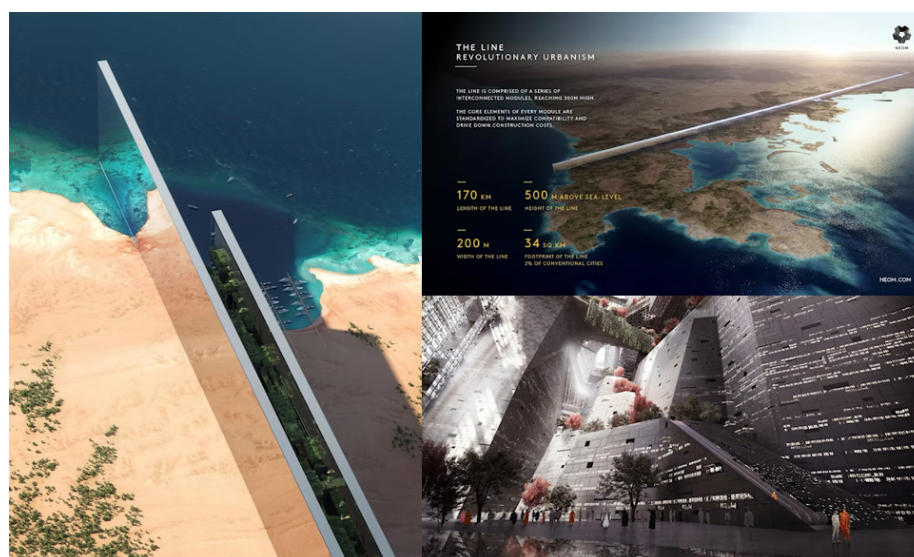


Figure 4. The Line: A vertical future city rises in the desert of Saudi Arabia. Source: cieloterradesign.com.

4. Discussion and Reflection

Premium design emerges as a potent tool for driving sustainable practices, leveraging the historical evolution of design elements from the refinement of tangible objects to the shaping of entire lifestyles. Beyond mere economic value, the democratization of high-end markets becomes a compelling narrative, echoing societal shifts and aligning with the dynamic values of discerning consumers. Analyzing the four case studies described above provides more precise insights into its potential to embed sustainable values within the high-end market.

Rooted in circular economy practices, where waste transforms into high-quality products, exemplified by Orange Fiber, the premium design approach helps transform an environmental challenge that navigates beyond material innovation into a luxurious and innovative solution, ensuring exclusivity and desirability. In the case of La Compagnie, adopting this approach not only harmonizes opulence with ecological mindfulness but also democratizes sustainable luxury, presenting distinctive and responsible value propositions to consumers who, consciously or not, embrace environmentally friendly alternatives. This overarching premium design philosophy extends to NEXT Future Transportation, where modularity and adaptability form its bedrock. The symbiosis of these values materializes in the form of modular buses, dynamically optimizing capacity and minimizing environmental impact—a synergy of optimal function and sustainability. This synthesis continues in The Line’s vision for sustainable urban living, where digitization and industrialization redefine traditional cityscapes. Here, the emphasis on renewable energy, reduced infrastructure footprint, and equal access to services for all residents signifies a holistic commitment to a harmonious future. These case studies across diverse industries showcase that design for sustainability is not just an ethical choice but a strategic one that can drive innovation, create new value and market shares, reshape consumer experiences, and redefine the post-sustainable paradigm for living. As we navigate the present challenges, integrating sustainability into the default choices of the best design holds the potential to reshape our long-term collective narrative toward a more sustainable post-transition world.

Within the framework of this paper, a blended methodology, merging literature review and case studies, has been employed. Its purpose is to elucidate the interaction of premium design across various sustainable design levels, spanning from product to service and social system spheres. The investigation delves into the potential perspectives of this approach in embedding sustainable practices within the high-end market, introducing the innovative concept of “eco-accidentalism,” which promotes sustainability as the default and optimal choice for consumers. The authors aspire to provide a valuable reference for fellow researchers navigating the design strategies centered around sustainability in both ongoing and post-transition contexts. Through this contribution, we seek to stimulate further inquiry and dialogue, fostering a collective advancement towards a more conscious future.

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