

Title:

When *design-thinking* is no longer sufficient!

A new paradigm for social innovation

Abstract

Design-thinking is recognized as a solution-driven approach, emphasizing empathy for users, collaboration, creativity, and iterative prototyping to tackle complex problems. Despite its widespread adoption in the field of innovation, *design-thinking* faces criticism for its lack of transformative dynamics and may not suffice for addressing the inherent volatility, uncertainty, complexity, and ambiguity of today's environment. This paper, focusing on social innovation (i.e., the creation and execution of novel initiatives to tackle social needs and enhance human well-being.), explores: (a) the extent to which an organization applies *design-thinking* within its innovation processes; and (b) how this application has progressed. Based on an exploratory investigation carried out in Japan (a country renowned for its rich tradition of innovation and problem-solving with extensive long-term planning cycles), we introduce an innovative and dynamic concept called “*Futuro-Design*”. Theoretically, this paper moves beyond the conventional *design-thinking* model by pioneering a synthesis of *design-thinking* and *futures-thinking* paradigms, contributing an enhanced theoretical framework to the design community and the realm of social innovation. On an empirical level, we lay out the groundwork for this emerging paradigm, emphasizing the importance of forward-looking anticipatory governance, societal connectivity, imaginative exploration of future scenarios, and a systemic approach.

Keywords: Design-thinking; Futures-thinking; Social innovation; Futuro-design paradigm; Exploratory study; Japan.

Introduction

In confronting the complexities of our intricately interconnected world, the VUCA (volatility, uncertainty, complexity, and ambiguity) framework—originally crafted by the U.S. Army—offers a relevant perspective. Amidst these dynamic landscapes fraught with complex challenges, social innovation plays a crucial role, underscoring the significance of creating and executing novel ideas, concepts, or initiatives to address social needs and enhance human well-being. Notably, *design-thinking* has risen as a valuable paradigm, advocating for a human-centred and solution-oriented approach to propel social innovation forward. However, despite its widespread acceptance, *design-thinking* has faced criticism for its normative path-dependency and essentialist inclinations that often simplifies complex phenomena into fixed categories based on presumed fundamental attributes, leading to generalizations and stereotypes. (Carlgren et al., 2016; Magistretti et al., 2021). Given the volatile, uncertain, unpredictable, and complex nature of contemporary societal challenges, *design-thinking* does not seem to serve as a "panacea" for social innovation. Consequently, we embarked on an exploratory case study, focusing on social innovation, to investigate the extent to which an organization applies design-thinking within its innovation processes; and how this application has progressed.

This exploratory study was carried out in Japan, a country renowned for its long-standing history of innovation and problem-solving and long-term (up to 30 years) planning cycles. Leveraging the country's unique cultural, technological, and economic landscape, our investigation centred on a multinational conglomerate headquartered in Japan. Over the years, this company has actively pursued social innovation initiatives, utilizing its advanced technology and innovation capabilities to tackle diverse societal challenges.

Aiming to understand the dynamics and agency within societal transformation processes through empirical validation, we employed the method of middle-range theory (MRT), facilitating proposition development in this study (Geels, 2007), proceeding with iterative cycles alternating between theoretical abstractions, general empirical statements, and validations and refinements using empirical data. To provide a rigorous and structured method to generate new insights, we utilized a "research triangulation" approach together with the "systematic combining approach" (Dubois et al., 2017), systematically synthesizing and integrating findings from multiple sources to develop a more comprehensive understanding of complex phenomena.

This paper makes significant multifaceted implications. Firstly, it contributes to the literature on *design-thinking* by advancing an innovative paradigm called *Futuro-Design*, aimed at addressing normative and essentialist limitations inherent in the conventional *design-thinking* model. In doing so, it answers various scholarly appeals for a transformative paradigm shift. Moreover, backed by empirical evidence, our paper introduces practical frameworks within this new paradigm to advance social innovation, offering valuable insights for managers and policymakers. Equally noteworthy, this forward-looking design model lays the groundwork for future research in the fields of *design-thinking* and social innovation.

In the upcoming sections, we first embark on a brief review of pertinent literature and present our research questions, followed by an outline of the methodology employed. We then discuss our findings and introduce a derived pioneering framework. We conclude this paper by scrutinizing the implications and limitations of our study, along with offering suggestions for future research initiatives.

Literature

Design-thinking, often portrayed as a human-centred approach that integrates people's needs, technological capabilities, and business requirements to foster success (Brown and Wyatt, 2010), diverges from linear design processes, favouring a cyclical five-step method: empathize, define, ideate, prototype, and test (Martin, 2009). Over time, *design-thinking* has evolved into a versatile practice for creative problem-solving, encouraging stakeholder engagement across disciplines to harness their diverse skills for value co-creation and comprehensive fulfilment of end-user requirements. According to Verganti et al. (2021), *design-thinking* is not merely a practice like design, nor even a theory; rather, it represents one of the potential approaches to practicing design, innovation, or transformation. It can be examined as a paradigm encompassing a set of principles, methods, and tools for design practice (Verganti et al., 2021). Core principles such as human-centeredness, creative problem-solving, storytelling, value co-creation, stakeholder engagement, prototyping, and experimentation have consistently been central to the exploration of *design-thinking* as a paradigm, contributing to its evolution into a strand of innovation management research. This paradigm holds particular significance in the realm of managing social innovation.

Social innovation involves the conception and execution of novel ideas, processes, or models aimed at tackling social challenges and enhancing societal well-being (Pol and Ville, 2009; Avelino et al., 2019). It entails devising innovative solutions to intricate social issues such as poverty, inequality, healthcare, education, and environmental sustainability within a global, regional, or local context (Avelino et al., 2019). Considering that social innovation often stems from wicked and complex problems and seeks to address unmet needs (Mulgan, 2006; Painter,

2024), *design-thinking* presents a valuable approach to enhancing social innovation success. Moreover, *design-thinking*, grounded in its human-centred principle, fosters opportunities for diverse voices and stakeholders to participate in co-creating interventions within the social innovation process (Liedtka, 2018)

Despite its widespread adoption, *design-thinking* has drawn criticism for being "normative and essentialist in nature" (Carlgren et al., 2016). The lack of transformative dynamics restricts the potential for realization between *design-thinking* and social innovation outcomes (Seidel and Fixson, 2013). One core limitation lies in the fundamental principle of *design-thinking*. *Design-thinking*, with its iterative nature starting from what is "out-there," has an intrinsic path-dependent nature (Norman and Verganti, 2013). In other words, *design-thinking* tends to solve the problems of the past rather than envisioning future needs. Fundamentally, *design-thinking* bases its understanding of the future on things we know and tends to understate the uncertain and unpredictable. Indeed, the more it focuses on the existing problems and delves deeper, the more it becomes ensnared in an incremental design trajectory. Consequently, numerous prior studies (e.g., Verganti et al., 2021; Painter, 2024) advocate for a new paradigm. This necessitates a reconceptualization and reimagining not only of solutions but also of the frameworks used to perceive problems and devise solutions, which holds particular importance in the management of social innovation.

In today's constantly evolving and changing contemporary society, marked by a web of complex challenges, there is no singular approach to unravelling its intricacies. Therefore, there is a pressing need for new theoretical perspectives to effectively navigate the dynamic interplay between the *design-thinking* framework and the broader context of social innovation

endeavours. Consequently, we embark on an exploratory study, aiming to address two fundamental research questions:

- (a) *Within the realm of social innovation, to what extent an organization applies the design-thinking paradigm in its innovation processes?*
- (b) *How has this application progressed?*

Research Method

Social innovation in Japan represents a dynamic and evolving field addressing various societal challenges, including the aging population, environmental sustainability, regional revitalization, resilience in the face of natural disasters, and social inclusion. Our exploratory study involves a multinational conglomerate based in Japan. In response to the management crisis triggered by the Lehman shock (Nhung and Okuda, 2015), our focal company underwent a significant transition towards social innovation business. The objective was to address social issues through collaborative creation with customers, utilizing advanced information and operational technologies to tackle various societal challenges. This presented us with valuable opportunities for research within the domains of *design-thinking* and social innovation.

In researching social innovation, prior literature (see e.g., Lévesque, 2012) suggests that one must possess analytical sensitivity to various phases and shifts within social innovation processes. It emphasizes the importance of recognizing how the actions of specific agents involved in innovation (such as individuals, organizations, or communities) interact with broader societal changes. By acknowledging the evolving relationships between these agents and the larger processes of social transformation, researchers can gain deeper insights into the

dynamics and impacts of social innovation. As such, we have followed the concept of *middle-range theory (MRT)* for building up understandings of the dynamics and agency in societal transformation processes (Geels 2007). The development of Middle-Range Theory (MRT) commences with a fundamental empirical comprehension of the phenomenon being examined (Hedström, 2005). This is followed by an iterative approach that involves cycling between theoretical abstractions, broad empirical assertions, and the validation and refinement of these concepts through empirical data.

Data collection and analysis

To ensure robustness and reliability in research findings, we applied *the triangularity research method* (Guion et al., 2011). It involved gathering data from multiple sources or using multiple methods to investigate our research questions. In this study, these consisted of a dedicated conference with keynote speech, one-on-one interviews, and focus group together with company collateral. By triangulating data from different perspectives and sources, we enhanced the validity and credibility of our findings, as inconsistencies or patterns across different sources/methods can be identified and cross-validated. Triangularity also helped us to mitigate the limitations of any single data source or method, providing a more comprehensive and nuanced understanding of the research topic. As a result, the triangularity research method contributes to the rigor and trustworthiness of research outcomes in this exploratory study.

We utilized the *systematic combining approach* (Dubois and Gaddle, 2017) for data analysis, which is well-suited for a case study with developmental objectives. This method, employing abductive logic—sitting between deduction and induction—enabled the ongoing refinement of the emerging conceptual framework in line with our research objectives. Abductive logic

facilitated the intricate mapping of empirical data within a dynamic theoretical framework. Multiple iterations of within-case content analysis were conducted to interpret interviews and evidence, followed by cross-case pattern exploration. We employed NVivo-20 and tabulation techniques such as clustering and comparison/contrast for data visualization and simplification (Miles et al., 2014).

Findings and Discussion

Our investigation delves into two primary research inquiries: (1) To what extent is the *design-thinking* paradigm applied in social innovation? And (2) In what ways, if any, has the *design-thinking* paradigm been further developed within the realm of social innovation? Our study indicates that *design-thinking* remains a significant approach in social innovation. Several *design-thinking* principles have consistently surfaced across our study's synthesized themes¹, including *empathy, human-centeredness, creative problem-solving, value co-creation, collaboration, and engagement*. An intriguing discovery from our data is the consistent indication of approaches that are beyond the *design-thinking* principles.

Here, we present these findings alongside the resultant propositions. Firstly, our research highlights the significance of "anticipatory governance," which entails a proactive approach to decision-making and policy development aimed at addressing emerging challenges and uncertainties before they escalate into crises. This concept is exemplified in our study: "*We are eager to listen to the community's voice... we engage with the community to envision future scenarios... they imagine what the future society could be like...*" (Interview – Design Manager). This underscores the importance of considering future trends, risks, and opportunities

¹ Due to space constraints, the referenced quotes for these themes are available upon request.

systematically to guide present-day actions and policies (Guston, 2014). Therefore, we introduce our initial proposition:

Proposition 1: The principal of “anticipatory governance” plays a vital role in the management of social innovation.

In addition to the principles of human-centeredness and empathy in *design-thinking*, the notion of "Connecting-society" presents a practical approach to "*understanding necessary purpose in the future*" (as emphasized in the interview with the Design Manager). Significantly, it emerges as a critical (if not the most important) means to achieve the objective of value co-creation in social innovation (Nordli and Gesierich, 2023). This crucial approach to understanding has been consistently highlighted in our study: "*Our Social Innovation research department focuses on creating future customer value through co-creation...*" (Focus Group). Hence:

Proposition 2: "Connecting-society" paves the way for managing social innovation.

While "connecting-society" encourages collaboration between users and suppliers to co-create value for social innovation, results of our research suggest that it is visionary scenarios of '*capturing the Kizashi*²' that propel social innovation towards envisioning "what could happen" (rather than what will happen) to achieve positive outcomes in social innovation. This implies that merely addressing existing wicked problems (i.e., predicting what will happen) is no longer adequate. Instead, there is a need for a proactive approach to "*exploring forms of social systems*

² "Kizashi" is a Japanese word that can be translated as "omen," "sign," or "forewarning." It is often used to describe a premonition or a sense of anticipation about future events. In a broader context, "kizashi" can also signify a harbinger of change or an indication of potential developments to come. See e.g., Akashi & Maruyama (2016).

to come" (data from the Company collateral), which the company is actively pursuing. This concept is well articulated in the interview with the Design Head: "*...we engage with the local community... we imagine what the future society could be like and develop something that can be adapted and continuously refined based on visionary scenarios... and strive to attain a clear future scenario...*" These findings lead us to propose:

Proposition 3: The creativity and imagination of future scenarios drive the advancement of social innovation.

Furthermore, our research reveals that the company adopts a “systems approach,” recognizing the interconnections and complexity of factors that shape future societal outcomes (Tani et al., 2018). Our focal company exemplifies how such an approach is crucial in informing decision-makers about the challenges and opportunities in social innovation emerging over the medium and longer-term. As emphasized in the focus group: "*Our vision entails a paradigm shift from Society 4.0 to Society 5.0... There are numerous ways to develop future scenarios, and we value each unit's perspective...*" (Focus group). Indeed, advancing social innovation entails understanding the interactions among social, economic, technological, environmental, and political elements. Therefore,

Proposition 4: The systems approach serves as a guide for integrating various components of the ecosystem within complex social innovation endeavours.

In summary, our research has introduced a novel paradigm that integrates the principles of *design-thinking* with the forward-looking perspective of futures-thinking (Rohrbeck, 2012; Buhning and Liedtka, 2018). We coin the term "*Futuro-Design*" to encapsulate this paradigm.

It is noteworthy that despite their similar suffixes, *design-thinking* and futures-thinking are fundamentally distinct. Futures-thinking, in contrast to *design-thinking*, stems from traditional futures studies and employs structured approaches to envision and explore alternative futures, thereby offering value to businesses and public institutions that implement its methodologies (see e.g., Buhring and Liedtka, 2018). Futures-thinking employs strategic foresight to pose the question "*what could happen* that would have an impact on society?", diverging from the predictive nature of traditional forecasting, which focuses on "what will happen?" It promotes an open and innovative approach to problem identification, unbound by historical contexts, and emphasizes the exploration of potential future scenarios (Liedtka, 2018; Buhring and Liedtka, 2018).

In this context, the "Futuro-Design" paradigm utilizes *design-thinking* methodologies while embracing the forward-looking mindset of futurism. The term "Futuro" has its roots in Latin, where "futurus" translates to "*about to be*" or "*going to be*," emphasizing a proactive perspective that anticipates future trends and developments. It highlights the importance of future-oriented thinking, innovative ideas, and technologies that anticipate and shape future trajectories, rejecting traditionalism in favour of embracing modernity and the transformative potential of technology (Domanski et al., 2020; Pel et al., 2020). The theoretical integration of futures-thinking with *design-thinking* shows promises in enhancing social innovation processes.

Finally, the concepts of anticipatory governance, connecting-society, creativity/imagination of future scenarios, and the systems approach collectively foster a forward-looking outlook in a proactive manner. This forward-looking perspective encourages evaluations that extend beyond present feasibility, nurturing innovative solutions. In this context, futures-thinking

plays a pivotal role in surpassing traditional thought patterns, offering valuable insights for innovation. It assists organizations in envisioning and framing medium to long-term scenarios, thus enabling more informed present-day decisions toward sustainable development.

Conclusion

Previous literature has suggested that *design-thinking* and social innovation are closely intertwined concepts, sharing common principles and methodologies. Both prioritize human-centred problem-solving, collaboration, creativity, and empathy to tackle intricate social challenges. However, as we confront the complexities of our interconnected world, including factors like pandemics, global warming, and the advancement of artificial intelligence, relying solely on *design-thinking* may not suffice for future social innovation endeavours. To surpass the limitations of traditional *design-thinking*, this paper advocates for the Futuro-Design paradigm. This paradigm nurtures a contemporary approach that fosters the advancement of social innovation.

It is noteworthy that the escalating interest in social innovation aligns with the broader trend of expanding innovation-theoretical engagement beyond the conventional emphasis on novel technologies and products. This paper responds to the scholarly calls that underscore the necessity for more profound theoretical exploration to gain a comprehensive understanding of the dynamic interplay between social innovation endeavours and broader innovation management frameworks. This paper contributes to the widespread aspirations of advancing the field, augmenting theoretical and conceptual coherence to offer improved guidance for research, policy-making, and practical implementation within the realm of social innovation and design community.

Nevertheless, the concept of "Futuro-Design" remains relatively obscure and lacks established recognition both within innovation studies and the design community. Rooted in empirical evidence, our study contributes a fundamental framework to this emerging paradigm, drawing from the elements of anticipatory governance, connecting-society, creativity/imagination of future scenarios, and the systems approach. These elements encompass essential aspects of social innovation, such as prioritizing social impact, fostering collaboration, promoting inclusivity, and ensuring sustainability. Through which, our study establishes a framework that stimulates further theoretical and practical exploration in the future. Lastly, although our analysis is confined to a single company in a single country (Japan), it serves as a benchmark for future multi-case and cross-country research endeavours.

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