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## Article

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# JOURNAL OF BUSINESS MODELS

## A tool for a Design-Driven Innovation Approach to More Sustainable Business Models

Tommaso Corà<sup>1</sup> and Lucilla Fazio<sup>2</sup>

### Abstract:

**Purpose:** The growing imperative for sustainable business practices has led to a recognition that companies must transform their business models to encompass economic, social, and environmental value. At the heart of this transformation is the triple bottom line framework, which evaluates business success in the three dimensions of profit, people, and the planet. Simultaneously, design-driven innovation embraces future-oriented approaches that include people and the ecosystem as stakeholders, while evolving the lenses of innovation, namely desirability (planet), feasibility (network), and viability (prosperity). This evolution offers a new perspective that extends the triple bottom line in business model design by considering the feasibility of achieving impactful, original, and useful innovations.

We explore a potential method for designing a business model anchored in the conceptualization of design-driven innovation and a tool to support the creative exploration and coherence assessment of more sustainable (than those currently in use) business models.

**Design/Methodology/Approach:** We built on previous knowledge of design, design-driven innovation, and business model design, and merged with insights from our direct experience as design-driven innovation practitioners, including in applying the tools in different instances with client companies.

**Findings:** We propose the Design-Driven Innovation Business Model Canvas, and provide initial anecdotal evidence from its potential to support the creative exploration and coherence assessment of sustainable business models.

**Originality/Value:** Our tool is designed to merge the design-driven innovation perspective with business design requirements to generate more sustainable business models than those currently in use. We also propose a new conceptualization of the three lenses of innovation, which we then relate to the triple bottom line.

**Keywords:** Design-Driven Innovation – Business Model Design – Sustainable Business Models – Three Lenses of Innovation – Impact – Planet – Prosperity – Network

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## Introduction

An increasing number of companies recognize the need to transform their business models (BMs), employing innovation to create and implement models that are more sustainable (Schaltegger *et al.*, 2016). This requires input from at least two key fields: sustainability and innovation.

In terms of BMs, sustainability is generally conceptualized by referring to the principles of the triple bottom line (Breuer *et al.*, 2018), a sustainability framework that examines a company's social, environmental, and economic impact (Elkington, 2018). The triple bottom line captures the value creation of a company along three dimensions, or "bottom lines": the traditional economic bottom line measured by financial performance (profit), the social and human impact of the company's activities on its stakeholders (people); and its impact on the natural environment (the planet), which some studies consider an additional stakeholder (Phillips and Reichart, 2000; Bocken, 2020).

Design-driven innovation (DDI) is an approach to innovation, rooted in design, that aims to simultaneously create value for people and businesses by creatively designing an impactful and original future (Buchanan, 2001a; Auernhammer and Roth, 2021; Design Council, 2022). DDI happens at the intersection of three principles, namely desirability, viability, and feasibility, which are also known as "the three lenses of innovation" (IDEO, 2015). According to Brown, desirability is defined as that which "makes sense to people and for people," viability refers to "what is likely to become part of a sustainable business model," and feasibility is whatever is "functionally possible in the foreseeable future" (2009:18).

We propose that the three lenses of DDI provide a human-centered perspective on sustainability that naturally expands the concept of the triple bottom line from stakeholders (desirability) and value created (viability) to the emergence of a business (feasibility). Feasibility is a key component in design's tension to create impactful and original futures (Steen, 2011) and in the management of the inner paradoxes of its practice (Gemser *et al.*, 2023). Design attains innovation through tangible designs that create value, empowering and enabling people in everyday life to

fulfill their goals and needs (Randhawa *et al.*, 2021; Auernhammer *et al.*, 2021). Sustainability is a crucial element of the DDI paradigm, but DDI has a broader purpose (Verganti *et al.*, 2021), which is to build a sustainable future for several stakeholders (Norman, 2023).

The principles of DDI introduce a new perspective to the design of more sustainable BMs by questioning which elements (or components) to consider in a BM and how to connect them. One way to explore this is to investigate how general BM frameworks might change if we need to account for the principles and main objectives of DDI.

In this paper, we introduce the Design-Driven Innovation Business Model Canvas (DDIBMC) which addresses the need to support the creative exploration and coherence assessment of a BM through the three lenses of innovation at the background of DDI. Here, "creative exploration" is the iterative interplay of design that simultaneously explores and co-evolves problems and solutions (Maher *et al.*, 1996), while "coherence assessment" refers to aligning design choices with the broader design context and objectives (Schön, 1983).

We start by introducing DDI and speculating on how the progressive shift of DDI from products to systems, including whole businesses and BMs, invites the consideration of a broadening of the original pillars of design into new concepts or principles, namely planet, network, and prosperity. Building on this extended view of the principles and objectives of DDI, we introduce the DDIBMC. We illustrate the tool, its main areas and blocks, and use an example to clarify its content, meaning, and significance. The objective of this paper is not to claim the objective validity or usefulness of the DDIBMC, but to initiate a conversation about the potential and purpose of the tool.

## Design-Driven Innovation

Design and design methodologies have become increasingly popular in business circles, mainly due to the codification and dissemination work by the d.School at Stanford University, the design thinking paradigm employed by the design firm IDEO (Brown, 2008), and the Double Diamond framework

developed by the British Design Council (2004). This trend has led to the recognition of the value of more “designerly” approaches that move beyond products and services and into business processes and BMs, while stressing the importance of “human-centeredness” innovation (e.g., Gruber *et al.*, 2015).

Design ideas and practices such as empathy, visualization, storytelling, sense-making, scenario-building, and prototyping, have been variously discussed and adopted by companies (Ancona, 2012; Candy and Dunagan, 2017; Liedtka and Ogilvie, 2011; Rothke and Gregory, 2019). The use of tools for the visualization of BMs, most notably the Business Model Canvas (Osterwalder and Pigneur, 2010), has made inroads into both early-stage startups and established firms.

From the early 2000s, design practices that were originally used for designing new products have expanded into new disciplinary areas, such as service design (Manzini and Vezzoli, 2003), systemic design (Buchanan, 2019; Sevaldson, 2013), and business design (Beausoleil, 2022). By addressing the intangible from a human-centered perspective, design has spread to new domains and moved closer to the behavioral sciences, systems thinking, and future studies. This expansion has caused design to embrace an increasingly holistic, multi-stakeholder view (Mager, 2020; Verganti *et al.*, 2021) and explicitly question the economic, social, and environmental impact of proposed solutions into design frameworks (Design Council, 2022).

Designers create models to examine complex problems, rely on prototypes to explore the value of potential solutions (Kolko, 2015), and iterate, balancing exploration and exploitation activities (Martin, 2009; Randhawa *et al.*, 2021). They search for the fit between solutions and problems and between users and solutions providers (Leurs and Roberts, 2017).<sup>1</sup>

If we define innovation as the realization of a creative idea, an original and useful mental representation of future implemented on a large scale (Seligman *et al.*, 2016), then design is used to identify the effect of an innovation over time. Thus, to understand and interpret the impact of an innovation, designers

speculate about its desirability, viability, and feasibility in a specific future.

The progressive shift in design toward holistic, systemic approaches has led the authors of this paper to rethink and expand the meaning of the three lenses of innovation (Corà *et al.*, 2023). The resulting perspective expands the original notion of desirability from a focus on customers, or users, to people and the natural environment. This broadening of boundaries is exemplified by the idea of “planet” (Norman, 2023; Verganti *et al.*, 2021). The meaning of feasibility is also broadened, from a focus on designing technology to solutions at the network level, because design (and business) increasingly happens in a globalized context, with multiple stakeholders operating in concert within a network (Ricciotti, 2019). The meaning of viability is also modified from its original focus on designing viable businesses to designing for prosperity and shared value (Baldassarre *et al.*, 2017; Jain and Chhabra, 2022). From this perspective, DDI introduces a focus on the creation of an impactful and sustainable future at the intersection of desirability (for the planet), viability (of prosperity), and feasibility (for the network) (see Figure 1).

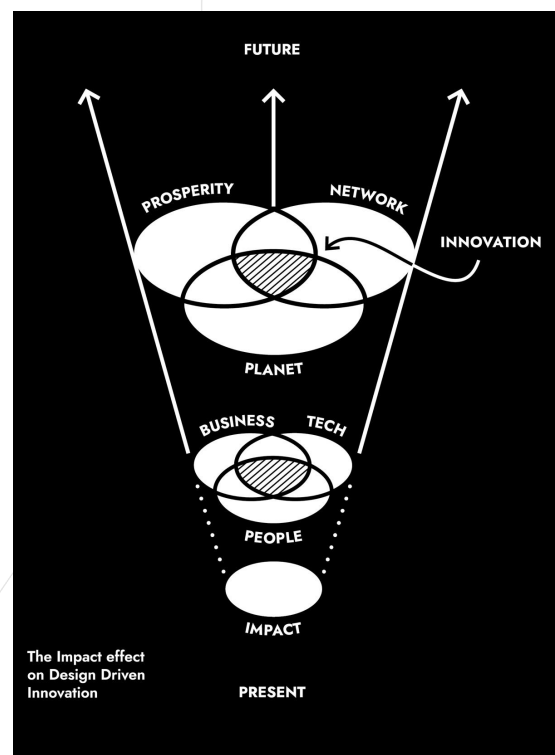


Figure 1: The progressive shift in design from confined to holistic and systemic, adapted from “The Three Lenses of Innovation” (Ideo.org, 2015)

<sup>1</sup> Some argue that, as the world is becoming more complex, the nature of design itself is shifting (Buchanan, 2001b).

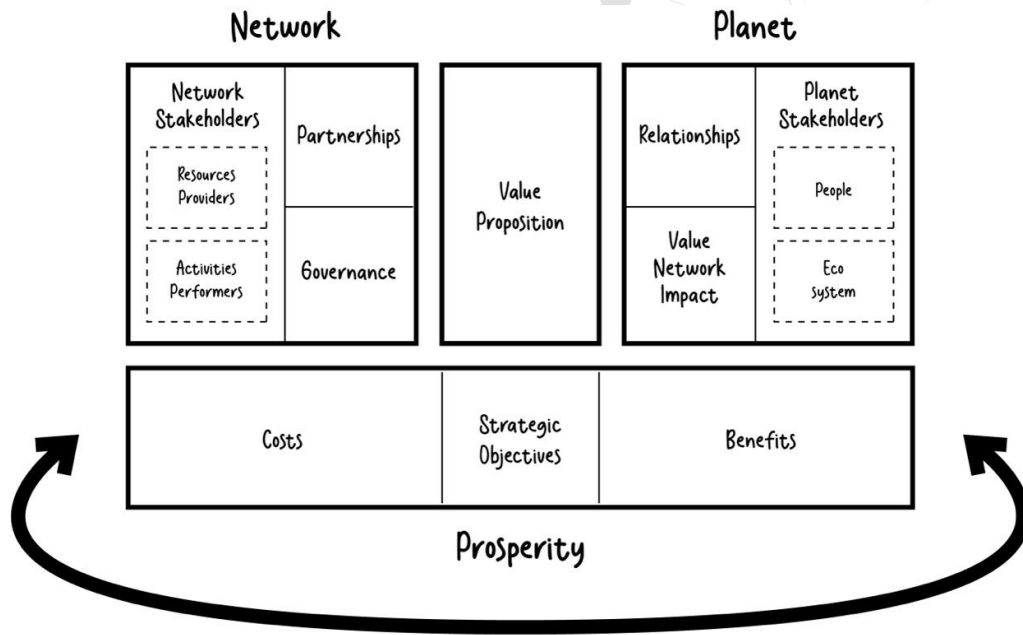


Figure 2. The Design-Driven Innovation Business Model Canvas.

## A Design-Driven Innovation Approach to More Sustainable Business Models

In this section, we illustrate a possible approach to the design of a BM anchored in the conceptualization of DDI we just discussed and present the DDIBMC, a

tool for the design of sustainable BMs. Its purpose is to support and guide the creative exploration and coherence assessment of ideas for BMs through the principles of DDI (see Figure 2).

We anchor the illustration of the tool in the case of Levante,<sup>2</sup> a company producing innovative products and promotional merchandise from waste, such as transforming tomato peels into candles, helicopter rotor blades into diaries, and electrode waste into bottle caps.

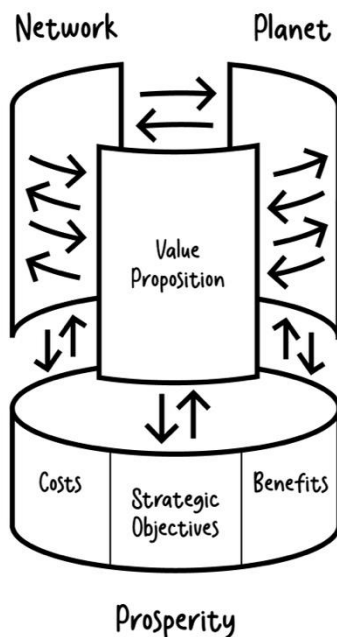


Figure 3: The spatial relationships between the blocks, and the iterative relationships between the stakeholders, in the Design-Driven Innovation Business Model Canvas.

## Areas and building blocks of the Design-Driven Innovation Business Model Canvas

The DDIBMC has three main areas: the planet, the network, and prosperity. Each of these areas is composed of different blocks, and all three revolve around a fourth area, the value proposition, which acts as the conceptual center of gravity. The areas are represented on a cylinder (see Figure 3) to emphasize the spatial and iterative relationships between them. The DDIBMC is based on a single canvas, designed to be a design space (Brown, 2008).

<sup>2</sup> The name has been changed for the sake of privacy.



## Value proposition

The value proposition area frames the value created by a business in its purpose to create an impactful and sustainable future for its stakeholders, similar to the “high-level-concept” in the Lean Canvas (Maurya, 2012). For example, Levante turns waste into promotional products that inspire positive behavior; in design terms, the value proposition is the outcome of a superior fit between a problem and a solution for all stakeholders. Levante generates value for the ecosystem by transforming waste into promotional products while reducing waste going to landfills. The company supports the local economy by identifying local technology partners and/or social enterprises to help with processing, thereby creating a positive social impact while generating value through inspirational practices. This fit is informed by a deep sense-making and an iterative process of co-creation (Baldassarre *et al.*, 2017). In this example, the value proposition is at the heart of the BM, at the intersection of the network (feasibility), the planet (desirability), and prosperity (viability).

## Planet

The second area is planet, encompassing planet stakeholders, relationships, and value network impact.

### Planet: planet stakeholders

The planet stakeholders block includes two sub-blocks—people and ecosystem—toward which a business addresses value. These sub-blocks respond to the implications of the DDI holistic approach, which considers not only customers, or users, but also people who live in a social and environmental context related with the business, in which humans and nature deserve equal consideration as stakeholders (Phillips and Reichart, 2000; Bocken, 2020; Verganti *et al.*, 2021; Norman, 2023).

People refers to individuals or groups to whom businesses deliver value. These people may be customers, users, interest groups that relate to the value proposition, or key influencers. For Levante, people are its clients (B2B customers, museums, stationery shops), the final users of its products (who are different from the clients), and others who are inspired by Levante's products to engage in sustainable practices.

Ecosystem refers to systemic actors who relate to the business from outside the business (Sevaldson, 2013) and who are increasingly included in value proposition design (Ceschin and Gaziulusoy, 2016). These actors include the natural environment, society, and national and local government institutions such as municipalities, tax authorities, and the healthcare system. In the case of Levante, the ecosystem encompasses the social enterprise workers involved in its supply chain and the environment, into which a small quantity of waste is released.

### Planet: planet relationships

The relationships block frames the connections between the value proposition and the planet stakeholders, including how and where they are developed. Relationships by their nature take place via different channels and involve different touchpoints (Verhoef *et al.*, 2015; Stickdorn *et al.*, 2018). These relationships can be mapped and designed at different levels of definition through service and system design tools. The shift from product to systems emphasizes the centrality of relationships within the design practice. Levante establishes relationships with its customers through its outstanding product design and the inspiring behavior it elicits in the public.

### Planet: value network impact

Value network impact refers to the impact on planet stakeholders caused by the value creation that occurs within the value network. This impact may be attributed to the resources provided, the agreed partnership, the performed activities, the adopted governance, or the outcome of a combination of any or all these elements (Sevaldson, 2013). Impact can be economic, contributing to the generation of prosperity; social, improving people's lives; or environmental, sustaining and conserving the natural environment. The impact can also be cultural, generating know-how or activating behaviors that affect the network via planet stakeholders (Bocken *et al.*, 2017; Herremans, 2020).

The key performance indicators (KPIs) for the value network impact can be qualitative or quantitative and depend on the strategic objectives chosen by the business. For example, Levante creates value by processing waste to produce its products. This reduces

waste to landfill and has a positive impact on the ecosystem and the planet. In this way, it encourages other companies to explore sustainable and circular BMs and technologies. Levante also relies on external assembly service providers organized as social enterprises, fostering social inclusion.

### **Network**

The network encompasses the stakeholders with whom the business creates the value proposition through interactions with them. It consists of network stakeholders, partnerships, and governance.

#### **Network: network stakeholders**

The network stakeholders block includes two sub-blocks—activities providers and resources providers—both of whom are involved in the value creation function. These sub-blocks respond to the implications of the holistic design approach, which frames contributors to product or service value creation as a network of collaborative actors (Wetter-Edman *et al.*, 2014; Nguyen *et al.*, 2022) connected in a nonlinear way (Kumar, 2021). This approach finds further validation from the field of business management in discussions about the transformation of the value chain (Porter, 1985) into a value network (Bocken *et al.*, 2013; Ricciotti, 2019) and in the emergence of stakeholder theory (Donaldson *et al.*, 1995; Joly, 2021).

Resources providers are stakeholders who provide elements fundamental to the creation of value. Resources may be tangible, such as natural resources or products made by others, or intangible, such as knowledge, and the providers can be human beings, organizations, or systemic stakeholders, such as the natural environment. At Levante, resources providers are manufacturing companies that need to process their waste, waste suppliers, recyclers, and other processors.

Activities performers are those who perform transformations useful to value creation; they may be internal or external to an organization, while activities may pertain to either products or services. At Levante, activities performers are technology partners, project managers, designers and waste and materials experts.

#### **Network: governance**

Governance frames the management of interaction that empowers value (co)creation in the network (Ranjan and Read, 2014), providing a structured framework for business decisions. Such frameworks can be deliberately designed by a business or be influenced by external factors, such as regulations or partners. Although design is not inherently a governance act, defining the architecture, components, and interactions of a system falls within system design (Sevaldson, 2019). In the case of Levante, governance encompasses several elements, such as the establishment of ethical and transparent supply chains (the company's purpose); the qualification of Levante as a benefit corporation; and compliance with current waste treatment legislation.

#### **Network: partnership**

The partnerships block frames the relationships that enable value (co)creation in the network. Partnerships may respond to strategic choices or external factors, such as environmental conditions, industry regulations, and a lack of alternatives. Explicitly regulated partnerships are influenced by governance. Design facilitation practice enables co-design and co-creation among the value network stakeholders (Jones, 2018) and supports partners in maximizing the value in all networks (Reypens *et al.*, 2016; Aguirre *et al.*, 2017). For example, Levante prioritizes short supply chains, opting for local partners and social enterprises to process materials, while its technology partners collaborate to develop innovative production solutions, sharing their knowledge.

### **Prosperity**

The prosperity area encompasses strategic objectives, costs, and benefits.

#### **Prosperity: strategic objectives**

The strategic objectives block frames what a business intends to achieve in the future. The cost-benefit equation, if not balanced by the strategic objectives block, could hinder the pursuit of innovation (Norman, 2023). Every business should be clear about its strategic objectives, and today, many companies are including a selection of the United Nations (UN) sustainable development goals (SDGs) in their corporate objectives. Identifying strategic

objectives can be a design process (Corà *et al.*, 2023); for example, Levante's management wants to create as many new circular supply chains as possible, creating new materials and products from the recovery of production waste. The company also wants to create local shared value with its stakeholders and to be a contaminating agent for the market.

### Prosperity: costs and benefits

The costs and benefits blocks frame value consumption and production in the pursuit of the strategic objectives through partnerships and relationships with stakeholders. DDI in its purpose is committed to a better balancing of economic, social, and environmental costs (Verganti *et al.*, 2021). The proximity of the costs and benefits blocks to the strategic objectives block emphasizes their consistency and alignment with the business purpose. In the innovation process, every business must set its own KPIs to measure progress (ISO, 2019). In addition to economic indicators, the UN has codified 231 other indicators (UN, 2017) that businesses can use to measure their results and set KPIs. Levante measures its revenues from royalties, products sold, technologies developed, research activated, products presented and prototyped, supply chain lengths, social impact, waste reduction, production and personnel costs, investment in research, training provided,

and awareness-raising meetings organized, as well as how well they are attended.

## Conclusion

The DDIBMC aims to merge the DDI perspective with the requirements of business design. Its three key areas—the planet, the network, and prosperity—provide a holistic perspective on the design of sustainable BMs. The DDIBMC has the potential to support DDI processes in organizations that want to create a more sustainable and harmonious future by creatively exploring their BMs and assessing their adherence to DDI principles.

Initial tests, conducted by the authors in their capacity as consultants and facilitators, have provided anecdotal evidence that the tool aligns well with the human and planet-centered approach of benefit corporations, though further research is needed to determine its applicability to other types of businesses. The diverse adaptations of the tool could provide an interesting platform to discuss not only the tool itself but also the sustainability of the BM analyzed. As design has become a crucial facilitator of innovation, the question of whether it can provide insights about sustainable BM now arises.



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