

Business model innovation for sustainability: a new framework

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Abstract

Purpose – Sustainable business model innovation (SBMI) is a change in the way a firm operates in order to create positive impacts or to reduce negative consequences for the environment and the society. The aim of this paper is to explain what pathways a firm can take when it implements a sustainable business innovation process in line with Sustainable Development Goals (SDGs).

Design/methodology/approach – The article starts with the analysis of the existing literature about BMI and SBMI in order to extrapolate the main elements of these topics.

Findings – Thanks to the combined information from academic and nonacademic sources, the study proposes a new framework. It is divided into three sectors: value proposition, value capture delivery and value capture according to the main studies about the business model.

Research limitations/implications – Regarding theoretical implications, this study contributes to developing a theory of both BMI and sustainable innovation. Indeed it helps in the understanding of the dynamic vision about how the business model changes in order to incorporate triple sustainability.

Practical implications – From a practical view, the paper can serve as a guideline for corporate reorganization.

Originality/value – The new framework differs from some recent academic efforts first of all for its theoretical characteristics: BMI construct and not business model concept is the core of the framework. The business model represents the subject of innovation, not its vehicle. Another unique aspect that can be derived from the approach adopted is that it links theoretical with practical sources.

Keywords Innovation, Sustainable business model innovation, Sustainability, SDG, Business modeling, Framework

Paper type Research paper

Introduction

Business model innovation is a widely known topic and one of the most recurring keywords in managerial studies. It deals with a new way to do business aiming at prosperity in a dynamic environment through the reconceptualization of the underlying logic behind the value creation, capture and delivery (Richardson, 2008; Teece, 2010).

Firms increasingly need to innovate by modifying their business model by initiating changes, improvements and replacements in various organizational elements (Mitchell & Coles, 2003). It is relevant to understand these elements to facilitate the analysis of organizational processes and planning of transformation from one business model to another and to increase the firm's resilience and the probability of success (Geissdoerfer, Vladimirova, & Evans, 2018).

In recent years, a new form of business model innovation (BMI) has occurred by incorporating the sustainability concept into the firm's goals and processes. We define *sustainable business model innovation (SBMI)* as a change in how a firm operates to create positive impacts or reduce negative consequences for the environment and society.

Although there is a broad consensus about the importance of sustainability for firms, the academic studies on how to transform the firm into a sustainable organization remain



blurred (i.e. Lemus-Aguilar, Morales-Alonso, Ramirez-Portilla, & Hidalgo, 2019; Presenza, Messeni Petruzzelli, & Natalicchio, 2019). Moreover, the process of implementing a sustainable business model remains unclear. Indeed, the prior scientific research about this topic offers various reviews (i.e. Boons and Lüdeke-Freund, 2013; Bocken, Short, Rana, & Evans, 2014; Geissdoerfer, Bocken, & Hultink, 2016, 2018) or analysis of a specific type of SBM (i.e. circular economy, collaborative consumption, inclusive growth and targeting low-income consumers). Nevertheless, the dynamic vision on how the business model changes to incorporate triple sustainability has received insufficient attention.

For addressing these gaps, this paper aims to simplify the study of the change of a business model that becomes “sustainable.” In particular, the questions addressed by this study are follows:

how to understand the way value proposition, value creation, and value capture within a business model change to include economic, environmental, and social issues. What pathways can an organization take?

To achieve our goal, we propose a new multidimensional framework that allows researchers to study the changes that occur when a business model moves toward sustainability and to study firms that design and manage this transformation process.

To structure the new framework, we must combine elements and characteristics of various tools of both academic and practical matrices. Regarding academic studies, we must consider the three concepts of value proposed by Richardson (2008), the ten types of stakeholders identified by Bocken, Short, Rana and Evans (2013) in the *value mapping tool* and the *nine building blocks of business model canvas (BMC)* proposed by Osterwalder and Pigneur (2010). Then, we must analyze nonacademic sources. We must consider the *four areas of BIA* (B Impact Assessment) methods promoted by Blab and the elements of the *SDG implementation framework* created by the United Nations.

At the end of the design process, we identified three macro-areas, namely value proposition, value creation and delivery and value capture, and several elements to describe each of them.

Our paper contributes to enriching the literature about BMI and sustainable innovation by adopting the business model dynamic perspective and presenting a new tool helpful in understanding how the business model changes to incorporate triple sustainability. A holistic framework for developing sustainable BMI could represent a learning framework for researchers to help identify the current assumptions about the phenomenon and improve them. Moreover, this study assumes a theoretical relevance because it uses the BMI construct as a lens to design a new framework. In contrast, the business model represents only the subject of innovation, and previous studies have instead identified it as the vehicle of innovation or a mediating device that can help achieve sustainable innovation. From a managerial perspective, the paper offers new tools that can serve as a guideline for a reorganization that aspires to increase sustainability within firms and reduce resistance to modifying existing business models.

The present article is structured as follows: first, we show the existing literature on BMI and SBMI to capture the current data. In the second section, we describe the research setting and the methodology. Then we propose a new conceptual and integrative framework as a guideline in the business model transformation toward sustainability. Finally, the discussion and the conclusion summarize the results and show the study implications and its limitations and directions for future research.

Theoretical background

Business model innovation

In the last ten years, the literature on the business model has shifted from the defining aspects to the topic of BMI. It moves away from the idea that innovation is possible only if it is

technological, applied to a product or process. Therefore, it resides in the transformation of the business model and expresses how to do business in a new way (Amit & Zott, 2020).

There are several definitions for BMI (Table 1). According to Osterwalder *et al.* (2005), Labbè and Mazet (2005), Santos, Spector and Van der Heyden (2009), Amit and Zott (2020) and Yunus, Moingeon and Lehmann-Ortega (2010), BMI is a reconfiguration of the business model's elements, of the firm's activities or of the value proposition.

Furthermore, scholars have used BMI as a strategic tool or unit of analysis to study how firms can overcome the competitive threat of a specific industry, such as the creative and cultural industry (i.e. Lantano, Petruzzelli, & Panniello, 2022) or the tourism and hospitality industry (Prezenza *et al.*, 2019).

Other authors, instead, introduce taxonomies. The most famous is the classification provided by Geissdoerfer *et al.* (2018), which identifies four types of BMI – startup, transformation, diversification and acquisition – and by Cavalcante, Kesting and Ulhoi (2011) which talks about creation, extension, revision and termination.

Most studies on BMI frame it as a process based on these taxonomies. Andreini *et al.* (2021) identified five typologies of processes: cognition processes, knowledge-shaping processes, strategizing processes, value creation processes and evolutionary processes.

This vision implies the existence of various phases which can lead firms to achieve a competitive advantage. So, managers must connect people and processes to anticipate market trends and integrate strategic assets creatively. In this regard, a framework can help and support the change process.

Sustainable business model innovation

“SBMI” is a scientific topic that has received significant attention both in the literature of sustainability innovation and business models of the last ten years (Cilo, Messeni Petruzzelli, Ardito, & Del Giudice, 2019). This research field aims to strengthen the firm's ability to integrate sustainability into the business model to achieve the goal of sustainable development. In particular, SBMI is a change in how a firm operates to reduce adverse external effects and create new positive external effects for the environment and society (Prezenza *et al.*, 2019).

For explanatory purposes, currently, a growing number of firms integrate green innovation into their business model to attain the opportunities offered by the market and build a competitive advantage (Prezenza *et al.*, 2019).

A SBMI is characterized by (1) the incorporation into the existing value proposition of sustainable principles or goals, (2) the extension of value creation concept from economic value to shared value (Porter & Kramer, 2011), (3) the consideration of nonfinancial interests in the decision-making process and (4) managers who act as sustainability leaders to promote a new mindset within the whole organization (Stubbs & Cocklin, 2008).

The core activity is transforming the value proposition toward a sustainable value proposition that allows value creation by considering the needs of customers, shareholders, suppliers, partners, community, society and environment (Baldassarre, Calabretta, Bocken, & Jaskiewicz, 2017).

It must express economic, environmental and social outcomes. Managers who intend to avoid value destruction through BMI should assume the sustainable value proposition (Roome & Louche, 2016). The sustainable business model must mitigate the value destruction for society and the environment. To do so, managers must clearly understand what value is currently on the verge of being destroyed and consequently act on the business model.

The SBMI also considers the value creation in the carried-out activities and its delivery as eco-social benefits balanced among all the players. In other words, it may include changing energy inputs in the industry using renewable energies, such as the sun and the wind, or modifying the way products reach the market regarding transportation.

Authors	Definition
Mitchell and Coles (2004, p. 17)	“By business model innovation, we mean business model replacements that provide product or service offerings to customers and end users that were not previously available. We also refer to the process of developing these novel replacements as business model innovation”
Osterwalder <i>et al.</i> (2005, p. 24)	“Specifying a set of business model elements and building blocks, as well as their relationships to one another [...] a business model designer can experiment with these blocks and create completely new business models, limited only by imagination and the pieces supplied”
Labbè and Mazet (2005, p. 897)	“A business model innovation changes one or more dimensions of a business model (which are perceived by the authors as product-market combination, the architecture of the value creation, and the revenue model) so that a novel configuration of the elements is created and implemented”
Markides (2006, p. 20)	“Business model innovation is the discovery of a fundamentally different business model in an existing business”
Chesbrough (2007, p. 15)	Business model innovation is to “advance [the] business model [...] from very basic (and not very valuable) models to far more advanced (and more valuable) models”
Santos <i>et al.</i> (2009, p. 14)	“Business model innovation is a reconfiguration of activities in the existing business model of a firm that is new to the product service market in which the firm competes”
Gambardella and McGahan (2010, p. 263)	“Business-model innovation occurs when a firm adopts a novel approach to commercializing its underlying assets”
Yunus <i>et al.</i> (2010, p. 312)	“Business model innovation is about generating new sources of profit by finding novel value proposition/value constellation combinations”
Johnson and Lafley (2010, p. 114)	“The ability to innovate something more core than the core, to innovate the very theory of the business itself. I call that process business model innovation”
Bucherer, Eisert, and Gassmann (2012, p. 184)	“We define business model innovation as a process that deliberately changes the core elements of a firm and its business logic”
Abdelkafi, Makhotin, and Posselt (2013, p. 13)	“A business model innovation happens when the company modifies or improves at least one of the value dimensions”
Berglund and Sandström (2013, p. 276)	“A BMI can thus be thought of as the introduction of a new business model aimed to create commercial value”
Casadesus-Masanell and Zhu (2013, p. 464)	“At root, business model innovation refers to the search for new logics of the firm and new ways to create and capture value for its stakeholders; it focuses primarily on finding new ways to generate revenues and define value propositions for customers, suppliers, and partners”
Khanagha, Volberda, and Oshri (2014, p. 324)	“Business model innovation activities can range from incremental changes in individual components of business models, extension of the existing business model, introduction of parallel business models, right through to disruption of the business model, which may potentially entail replacing the existing model with a fundamentally different one”
Geissdoerfer <i>et al.</i> (2016, p. 1220)	“Business model innovation describes either a process of transformation from one business model to another within incumbent companies or after mergers and acquisitions, or the creation of entirely new business models in start-ups”
Foss and Saebi (2017, p. 216)	“We define a BMI as “designed, novel, and nontrivial changes to the key elements of a firm’s BM and/or the architecture linking these elements”

*(continued)***Table 1.**
Definition of business
model innovation

Authors	Definition
Geissdoerfer <i>et al.</i> (2018, p. 406)	“We define business model innovation as the conceptualisation and implementation of new business models. This can comprise the development of entirely new business models, the diversification into additional business models, the acquisition of new business models, or the transformation from one business model to another. The transformation can affect the entire business model or individual or a combination of its value proposition, value creation and deliver, and value capture elements, the interrelations between the elements, and the value network”
Landoni <i>et al.</i> (2020, p. 8)	“BMI is “ a strategic tool that helps overcome the resource constraints they face along the life-cycle”
Amit and Zott (2020, pp. 112–113)	“For startups, the term business model innovation often refers to the introduction of a business model that is novel [. . .] to the product-market space in which the firm competes. [. . .] A business model design of an incumbent firm to be innovative when the firm changes its activity system so that the new system is novel for the firm and possibly also in the product-market space in which it competes”
Andreini <i>et al.</i> (2021, p. 4)	“BMI is a set of deliberate acts that managers and entrepreneurs perform over time to change the BM components and architecture in a consistent and innovative way”
Lantano <i>et al.</i> (2022, p. 8)	“BMI is widely recognized as a crucial activity that incumbents have to perform in order to successfully face the threat coming from new and innovative entrants”

Table 1.

The last dimension of a sustainable business model that innovation must consider is the value capture mechanism, the amount of value that individual stakeholders appropriate for themselves (Amit & Zott, 2020). It requires firms to capture economic value for shareholders and investors and environmental and social value for stakeholders. We can affirm that in the SBMI, the subject-matter experts link the value concept to impact and sometimes replace it.

So, this activity is complex because the transformation process often involves incorporating heterogeneous metrics besides including various stakeholders’ needs (Snihur & Wiklund, 2019).

Despite this complexity, the literature on the sustainable business model (i.e. Lozano, 2018) and BMI for sustainability (i.e. Geissdoerfer *et al.*, 2018) has highlighted a gap in the SBMI design and implementation. Considering this scenario, we introduce, in the next section, a new helpful framework as a guideline for scholars and academics to theorize the correct business innovation process toward sustainability. Such a framework is also helpful for practitioners to plan actions at different firms’ departments and implement business model transformation.

Methodology

This study presents a conceptual framework summarizing the several SBM critical dimensions to support the complex process under the SBMI. We have detailed the research process of these phases: (1) the selection of scientific papers, (2) the establishment of the framework’s design and (3) the analysis of papers.

The selection of scientific papers

We have adopted the SCOPUS academic database to retrieve helpful literature for creating a new theoretical framework. To find the papers, we used the following keywords: [sustainable business model], [“business model innovation” and “sustainability”], [“business model” and

“sustainability”] and [sustainable business model innovation]. These keywords must be present in the abstract, the title and the paper’s keywords.

We have included only papers written in English and published between 2010 and 2021. Moreover, we included only papers belonging to the subject area “Business, Management and Accounting.” The database returned 520 results. After excluding conference papers and duplicities, we selected only papers that we considered relevant based on two criteria: the journal which has published them and the number of citations (>50 citations). For obvious reasons, we have not considered this last criterion for the most recently published papers (papers published from 2018 to 2021). The final search on SCOPUS returned 68 results.

Then, we read the abstract and the title to understand the papers’ consistency with the research aim. In the end, we have selected 51 papers after reading them in full.

Establish of framework’s design

We have identified three helpful principles to structure our framework:

- (1) To focus on value to integrate it into the triple bottom line dimensions (i.e. [Evans et al., 2017](#)),
- (2) To have a multi-stakeholder approach that requires systems thinking ([Seiffert & Loch, 2005](#)) and
- (3) To analyze every aspect of the business model according to a comprehensive approach.

Disregarding some of the principles mentioned earlier can cause them to lose consistency, and it will therefore fail if implemented ([Osterwalder, Pigneur, & Tucci, 2005](#)).

Following these principles, we have intersected the theoretical concepts (academic sources) with practical tools to identify the framework’s critical elements.

Academic sources. Regarding academic studies, we have considered the following principles:

- (1) The three *value concepts* proposed by [Richardson \(2008\)](#): (1) the value proposition concerning offers, target customers, differentiation, vision and mission; (2) the value creation and delivery system regarding resources, assets, processes, position in the value network relative to customers, competitors, collaborators and all stakeholders and (3) the value capture system linked to the way to make money.
- (2) The *nine building blocks* of a *BMC* proposed by [Osterwalder and Pigneur \(2010\)](#): value proposition, customers, relationship, channels, key resources, key activities, key partners, cost and revenues.
- (3) The *ten types of stakeholders* identified by [Bocken et al. \(2013\)](#) into the “value mapping tool”: customers, investors and shareholders, employees, suppliers and partners, environment, community, government, external agencies, media and academia.

Richardson’s classification does not list the business model’s possible elements, and he only focuses on the value concept and considers the latter only in economic terms. So let us add the *BMC* of Alexander Osterwalder that clearly shows all the components and their interrelationships. However, while being well-conceived and academically grounded, it has a narrow view of the value proposition, focusing only on the customer and not the stakeholder network. Therefore, we have needed a greater focus on the stakeholders. We considered the value mapping tool [Bocken et al. \(2014\)](#) proposed that aims to understand the positive and negative aspects of the value proposition of the network of stakeholders ([Bocken et al., 2014](#)).

Nonacademic sources. About nonacademic sources, we have considered the following principles:

- (1) The *four areas of the B Impact Assessment (BIA) method* promoted by Blab, a nonprofit organization: governance, community, environment and workers.
- (2) The *elements of Sustainable Development Goal (SDG) implementation framework*, created by the United Nations to guide companies to deepen integration of SDGs into business operations and stakeholder engagement: strategy and governance, operations and stakeholder engagement ([United Nations Global Compact, 2020](#)).

BLab promotes socially aware business practices by allowing firms to adopt responsible standards voluntarily. By voluntarily joining and meeting a certain level in socially responsible standards, a firm becomes a BCorp. The process of certification generates a B Report that includes several broad categories: governance, workers, community and environment. These categories include further subcategories: the governance category includes “transparency” and “accountability”; the workers category includes “compensation benefits and training”, “ownership” and “work environment”; the community category includes “community products and services” and further enumerated “community practices”; and the environment category includes “environmental products and services”, and further enumerated “environmental practices”.

We have also considered the SDG implementation framework linked to 17 Sustainable Development Goals to deepen the single elements. The 17 SDGs are a worldwide initiative introduced by United Nations in 2004 to encourage firms to adopt social and environmental behaviors.

The analysis of papers

We have analyzed the theoretical papers to describe the framework’s single elements identified in the previous phase. With this objective in mind, we have first organized the information into three macro-areas: value proposition, value creation and delivery and value capture.

Then we have identified the specific knowledge about (1) a firm’s purpose and governance, (2) stakeholder engagement, (3) customers impact, (4) environmental practices, (5) environmental resources, (6) workers, (7) stakeholders, (8) cost structure, (9) revenue stream and (10) corporate finance.

The third step regards the search for examples within papers for each framework dimension. We carefully read papers with case studies. Finally, the authors have discussed the results among them.

New framework to sustainable business model innovation

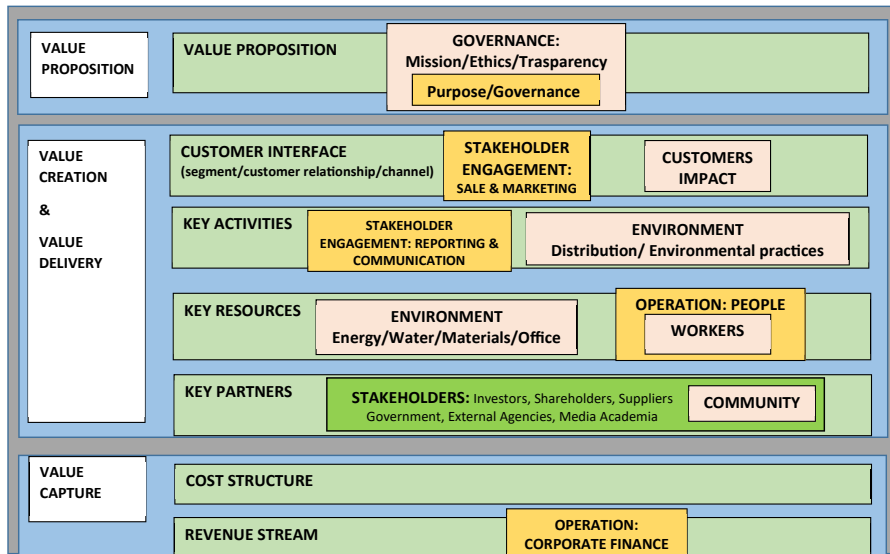
Based on the process discussed above, we proposed a multidimensional vision of sustainable BMI, which a specific framework, i.e [Figure 1](#) has illustrated. We discuss below the three macro-areas identified.

Value proposition section

The framework suggests starting the analysis from the value proposition section made up not only by describing new sustainable value, like existing tools, but also by explaining the governance.

The first step is aligning the firms’ aims with sustainable principles. The main action refers to renewing their mission, statements and core values. Organizations can focus on their strengths to achieve this triple positive impact through missions that support core business strategies and unlock the motivation of all employees and collaborators ([Geissdoerfer et al., 2018](#)). As an example, we quote Danone, a leading firm operating in the nutrition industry explicitly states that it studies and applies solutions that regenerate the environment by promoting the use of resources responsibly ([Jones, Hillier, & Comfort, 2015](#)).

FRAMEWORK FOR SUSTAINABLE BUSINESS MODEL INNOVATION



Note(s):

- Classification of value by Richardson
- Building blocks of Business Model Canvas by A. Osterwalder
- Stakeholders identify by Bocken in the Value Mapping tool
- SDG Implementation Framework created by United Nation
- Areas of BIA impact assessment method introduced by BLab

Figure 1.
Framework

The second step concerns transparency, which is often associated with the amount of information an organization is willing to disclose. Transparency cannot exist without ethical action as the presence of an ethical code and an ethical audit (Depken & Zeman, 2018). According to the example given by Enel, since 2002, it has adopted the Code of Ethics, which expresses the commitments and responsibilities in conducting business (Mazza & Furlotti, 2019).

The last element necessary to consider is governance since leading the transformation to a more sustainable business model must be a constant topic on the Board of Directors' agenda. The FCA (Fiat Chrysler Automobiles) board has adopted a "diversity policy" as they understand that diversity in the firm's composition, in terms of age, gender, experience, work background and nationality, is essential for promoting debate and making balanced decisions.

Value creation and delivery section

Following the framework's logic, we must consider how the value is created and distributed.

First, one must consider the customer area, carefully observing the impact of products or services on health and wellness, support and satisfied needs (Schaltegger, Hansen, & Lüdeke-Freund, 2016). Customers are interested in corporate sustainability. Consequently, the firm examines all marketing activities aimed at sustainability to satisfy the customers' needs. The sales team also plays a vital role in promoting the firm's values.

For example, we can mention Illycaffè, an Italian company operating in the coffee industry, which bases its customer relationship on maximizing the sustainable value created by reducing the environmental impact of products and packaging. The salesforce guarantees constant contact with B2B customers and updates on all the leading news regarding products, services, promotions and events. Instead of B2C customers, the firm offers shops based on beauty, socialization, creativity and food culture.

Then the framework requires an in-depth study of the leading resources, the key activities and the partnerships. Inserting sustainable ambition into periodical investor relations is relevant to ensure accountability, and the information enables the communication of long-term value generation. Reporting of sustainable progress requires defining specific metrics (Depken & Zeman, 2018). Some environmental dimensions of sustainability activities refer to reducing greenhouse gas emissions and waste management.

Another element refers to resources considered essential, such as personnel and the environmental.

Human resources play an essential role in achieving sustainable ambitions. Therefore, it is relevant to analyze some elements concerning workers, such as their benefits or wages, training, work environment, job flexibility and others. To illustrate, the Salvatore Ferragamo's Group considers the well-being of its workers and the internal environment as fundamental elements for its success. It implements many corporate welfare initiatives to favor balancing each employee's professional and private life (<https://sustainability.ferragamo.com/it>).

The use of environmental resources, such as renewable energy, is a significant talking point for some firms. There are several ways to purchase renewable energy: buying specific technologies, like solar panels, wind turbines or vegetable oil filters.

For example, AUDI aims to make all the activities "carbon neutral" by 2050, from the supply chain until production. The firm implements the circular economy model through the implementation of "remanufacturing," the industrial regeneration of used parts or through the introduction of the "Aluminium Closed Loop project": the scraps of the aluminum sheet are isolated from other waste and sent back to suppliers for new processing (Wellbrock, Ludin, Röhrle, & Gerstlberger, 2020).

Another element of the framework regards the partnership with all stakeholders. Collaboration with government, suppliers, academia, media, external agencies and the community can accelerate innovation to advance sustainable goals.

These external relationships help grow the core business and extend companies' social licenses to operate (Bruneel, Moray, Stevens, & Fassin, 2016). When companies come together with industry partners, they further raise the playing field for all and pave the way to engage with governments and policymakers to drive action. For example, we can cite the community representing Esselunga, a stakeholder group that influences sustainable practices. Esselunga is an Italian food and mass retail channel company that contributes to the community's economic, social, cultural and well-being development where it operates. The main initiatives implemented last year have focused on three macro-objectives: redistribution of food surpluses, promotion of culture and education, and support for scientific research.

Value capture section

The last area of our framework focuses mainly on the firm's results and their measurement.

The main question concerns how the firm assesses the impact. There are several metrics that firms can use to assess the triple bottom line integration in the new business model. Such metrics can assess the last year's turnover and net income, the number of new offices, the hiring of new workers, the new investments attracted, the environmental indices and the customer feedback (Breuer, Fichter, Lüdeke-Freund, & Tiemann, 2018). Tod's group, FCA or ENEL, like most listed companies, use the "Global Reporting Initiative for Sustainability Reporting Standards" indicators defined by the Global Reporting Initiative (GRI) to measure the results of its activities.

Integrating sustainable practices into the capital flow from an economic perspective is essential, and it is from sustainable initiatives that the economic costs derive and consequently the financial investment. These decisions are critical for progress on any sustainable process from investments toward research and development to capital allocations for new facilities.

Further activities concern the updating of risk expectations connected with revenue flows.

Indeed, in the value capture process, firms aim at monetizing the outputs of their activities. Due to products' social and environmental characteristics, managers can increase customer loyalty and willingness to pay, allowing firms to capture higher product prices.

This last section includes the qualitative measurement of the impact concerning mitigation of the destroyed value and the value not captured. To exemplify this qualitative measurement, we mention the permanence of waste from production flows, the nonexploited co-production and the sub-utilized resources about overworking capacity or insufficient use of skills and knowledge.

For each of the three dimensions, we have provided some questions the managers should answer at the end of the sustainable business innovation process and which scholars should study in-depth to provide further theoretical insights. In [Table 2](#), we have summarized the questions we would include in a possible checklist.

Discussion and conclusion

Subject-matter experts consider the SBMI a complex process that changes the core elements of the firm's logic to create new value for all their stakeholders.

The radicality of organizational change makes the adoption of a sustainable orientation easier for new entrants (start-up) and riskier for incumbents – the existing companies that have been operating their business for a long time. Indeed, the start-up does not transform an existing business model but creates new ones without a history to respect or a tradition to maintain. At the same time, incumbents' firms must start revising their current business model. The ambiguity of the situation also can bring uncertainty.

Consequently, the research questions based on this study are “*how to understand how the value proposition, value creation, and value capture within business model are changed to include economic, environmental, and social issues? What pathways can an organization take?*”

In order to fill this gap, we have proposed a novel framework that provides a multidimensional view concern to the SBMI process.

We have divided the new framework into three sections: value proposition, value creation delivery and value capture. We have made up each dimension by different elements deriving from the literature. Then we provided a helpful checklist to interpret the framework.

The section related to value proposition includes the description of new sustainable value. The renewed purpose should stem from an authentic motivation and passion within the firm's organizational culture. It is relevant notice that the governance became a central element to consider within this dimension despite studies on the business model often do not consider it. The second section of the new framework considers the customer's sphere to create value and the essential resources, activities and partnerships to delivery it. The literature reveals the importance of the sales team that plays a role in promoting the firm's values. Moreover, all the activities of this section must guarantee transparency and ethics. The last area of the framework focuses on the impact and its measurement.

Theoretical implications

The present study provides a new knowledge on the SBMI process design by introducing a new framework.

From the theoretical point of view, a comprehensive framework for developing SBMI could represent a learning framework for researchers. Indeed, the framework proposed should seek to identify the current assumptions about the phenomenon and improve them.

Check list
Sustainable business model innovation framework

Value proposition section

Is the mission of the company that includes aspects related to sustainability written in a document, publicly discussed or formally shared with the firm's employees?

Does the firm have a formal stakeholder engagement plan?

Does the firm have formal and ongoing processes to collect information from stakeholders?

Does the firm have a code of ethics?

How much and what information is released to the public in an open and honest way?

Does the firm publicly disclose the mechanisms and results of stakeholder engagement?

Who supervises the firm's management?

Does the firm have a sustainability committee?

Value creation and delivery section

Does the firm's product/service seek to address a social or economic problem for or through its customers?

Does the firm have quality certifications?

Does the firm have processes for receiving customer feedback, comments or complaints?

Does the firm monitor the level of customer satisfaction?

Does the firm have written ethical marketing, advertising, or customer engagement policies?

Does the firm manage the privacy and data security of its customers?

Are the company's products or processes structured to restore or preserve the environment?

Does the firm have implemented energy efficiency improvement programs, water efficiency improvement projects, or waste reduction programs (including recycling)?

Does the firm monitor, record and disclose its energy or water consumption?

What percentage of energy consumption comes from renewable sources?

What methods of conserving water resources have been implemented in the firm's offices or factories?

Is the firm adopting remote working practices?

How does the firm care about the virtual office environment for remote workers?

Does the firm have a recycling program for the materials used?

Does the firm assess or monitor the social and environmental impact of its main suppliers?

Does the firm implement some civic participation practices such as community services and investments, partnerships with non-profit organizations, free use of company facilities to host community events?

Value capture section

Which activity has led to savings in economic costs?

Did revenues increase after the business model innovation?

How much are the investments to follow the principles of environmental sustainability?

How much are the investments to follow the principles of social sustainability?

Does the firm have attracted new investors?

What are the goals and actions for next year?

Table 2.

The check list for sustainable business model innovation implementation

Adopting a dynamic perspective for the business model and introducing a valuable tool to understand how the business model changes to incorporate triple sustainability are contributing factors in the theory development of the BMI and sustainable innovation.

Another theoretical contribution lies in the approach adopted to find the critical areas of the new framework: we have linked theoretical and practical sources. We have sought to develop an integrative framework of elements that are easy to investigate to facilitate the BMI process. This approach is still rare in the published scientific articles and other theoretical frameworks dealing with BMI.

Moreover, the new framework differs from recent academic efforts (Breuer *et al.*, 2018), above all, by the theoretical approach at its foundation. For example, to build his framework, Ludeke-Freud considers the business model a mediating device that can help him achieve sustainable innovation (Lüdeke-Freund, 2020). So, the business model is the vehicle of innovation. In this case, the BMI construct is the core of the new framework, not the business model. The business model represents the theme of innovation.

Managerial implications

About practical implications, the proposed framework can serve as a guideline for a reorganization that aspires to increase the level of sustainability within an organization. It can help managers and consultants: (1) to experiment, orient, test and implement the business model transformation and the consequent organizational change and (2) to analyze and correct transformation processes that have already started.

Moreover, the study provides an essential feature of the sustainable innovation process, which is helpful for practitioners: they can initially analyze the identified elements in a sequence and then follow an iterative process that assumes continuous questioning of the business model until it achieves complete coherence between all parties.

Therefore, such a framework reduces resistance to modification of the business model within firms and promotes the commitment of individuals to the BMI implementation.

Even if the framework applies to all firms that want to change their business model toward sustainability, since the governmental organizations until the private businesses, experts have designed this framework for small and medium-sized enterprises (SMEs) that are less used to dealing with sustainable indicators and metrics. The scenario forces large corporations to follow the strict business model transformation processes and monitor them with indicators for implementing sustainability. For example, we can mention the listed companies that use the GRI Indicators to disclose their sustainable results in most cases. SMEs faced with these complex processes may become discouraged and implement the organizational change process incorrectly or not implement it at all.

Limitations and future research

This research is subject to certain limitations: we have used a theoretical approach in SBMI, and we have proposed a framework that may be interpreted differently by various researchers.

Consequently, the validation of the results, which one could do through the qualitative methodology of the case studies, is not present in this study due to space constraints in the article and the risk of sidetracking the reader. Therefore, future studies can use this methodology to understand our framework's applicability and suitability in different contexts and smaller and larger firms alike.

Moreover, future research might develop a system of metrics for each element of the framework to measure value delivery and value captured by the firm. Consequently, this could create the basis for future quantitative studies of SBMI, a segment of business model studies that is less important than qualitative empirical studies.

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