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Sustainable Business Models: An Imperative in the Strategic Management of Companies and Organizations

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Abstract. *In the last decade, sustainability has become an imperative for strategic management of companies and their business models. Through the necessity of adapting to green energy and environmentally friendly processes, products and services, companies have started to reorganize their business model canvases according to the sustainability concept, that imposes a redesign from before the production process until the end of the lifecycle of the product or service. The objective of the present article is to contribute to the classical theoretical business model canvas of Osterwalder and Pigneur with sustainable elements, which could serve as a basis for scientific literature, but also for practical implementation in the private business field. The paper contributes through the additions to the existing elements of the business model canvas with elements necessary to ensure a ''clean'' production and consumption process from producer to consumer. The relevance of the paper lies in the fact that the business model elements need to be improved continuously with the increased dynamics of the economy and the need to ensure a sustainable future for the next generations, which is still an emerging topic practically and theoretically.*

Keywords: *sustainability; business model; business model canvas; strategic management; value creation.*

Introduction

Sustainability has gained a significant role in the strategic management of companies and has become one of the most debated topics in the political, business and social sectors, as the need for finding solutions satisfying the triple bottom line ''people, planet, profit'' in all fields of activity have become a necessity. If a decade ago the main focus of companies was to ensure a qualitative product or service or to bring periodically improvements to the existing offer, currently the creation of value perception for customers and other stakeholders is the essential element for the future development of a company. At the moment sustainability in the sense of a sustainable offer of products and services represents one key factor in the perception of stakeholders for value creation. That is why today many companies are reshaping their business models, products, and services in order to ensure environmental friendly, stakeholders oriented offers and strategies and also ensure their financial gain.

The term sustainability has been frequently interpreted as ecology, ecology oriented strategy, and other environmental friendly related topics. However, sustainability was defined as fulfilling economic objectives of the society without affecting the chance of future generations (WCED, 1987), thus, implying the triple bottom line. The business model definition was given by Osterwalder and Pigneur (2010, p.14) as a business model that ''identifies, generates and captures value'', the authors also providing a complex illustration of nine building blocks of the business model of the company. In relation to this definition of sustainability, a sustainable business model is a business model, that creates competitive advantage through superior value creation for the customer and contributes to sustainable development of the company and the society (Lüdecke-Freund, 2010). While numerous authors have referred in the scientific literature to the concept of sustainability (Lüdecke-Freund, 2010; Yilmaz & Flouris, 2010), only a few, such as Stubbs and Cocklin (2008) or Bocken et al. (2014), have referred to applied elements of a sustainable business model.

Although the scientific literature offers various definitions and elements of business models for the different type of organizations, not many authors refer to sustainable business models in the sense of applied elements based on the current economic, social and environmental context. This offers a basis for future research in the field in the sense of possible contributions to adding sustainable elements to the existing models and thus, possible improvements, that can be applied in the theory and in the business field practically as well.

The main objective of the present study was to develop a sustainable business model canvas based on the canvas of Osterwalder and Pigneur (2010), by adding to the existing nine building block illustration of a business model elements, that could reflect potential solutions to adding sustainability to the production-consumption process in the sense of the triple bottom line by taking into consideration current practices and companies' strategies for increasing sustainability integration within the business. The relevance of the study lies in the novelty of the subject, as it is an emerging topic in the private field and also for future scientific research, that will add further to the topic.

Literature review

As mentioned in the introduction the need to restructure and redesign business models, products, and services in the direction of sustainability is now a main strategic issue of company management globally. As the need for sustainable elements increases, such as, for example, renewable sources of energy, 'clean' products, that produce less or no waste or that allow reintegration and recycling of product parts at the end of their use, the companies are striving to redesign their business models accordingly.

A business model is practically "identifying, creating and capturing value" as mentioned by Osterwalder and Pigneur (2010, p.14) and was divided into nine

building blocks, that form the structure supporting this value creation for the stakeholders ultimately:

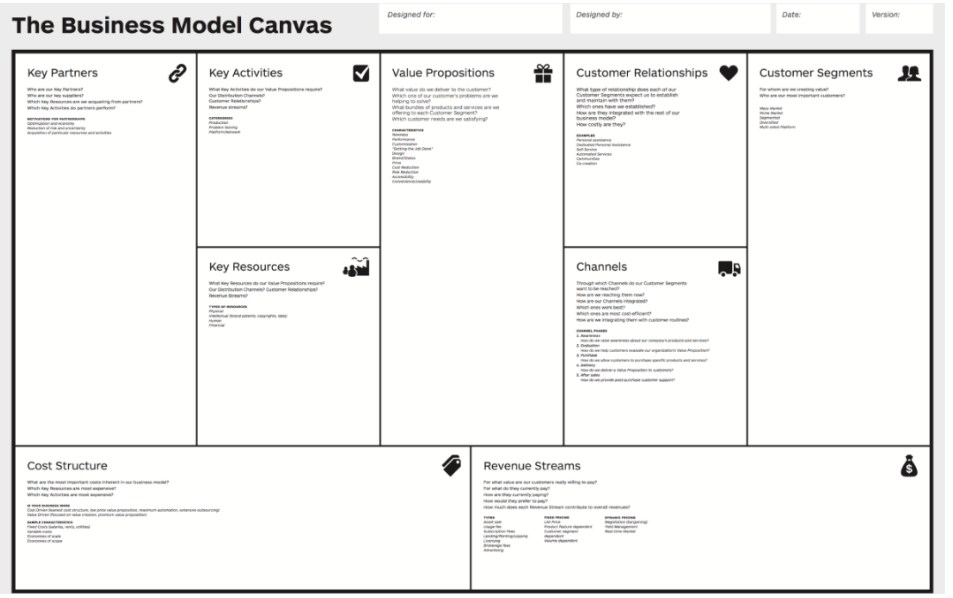

Figure 1. The business model canvas (Osterwalder & Pigneur, 2010, pp.15-44)

As seen in Figure 1 the main elements are represented by:
a) The value proposition, that represents practically what differentiates the offer of a supplier from competition and how their customers can benefit from it;
b) Customer segments, representing practically the target audience;
c) Key activities or essential activities, that contribute to the success of the organization;
d) Customer relationship, including methods of building the connection with one's own customers, for example, through a direct relationship, such as personal banking or an indirect relationship;
e) Key resources, that permit the efficient implementation of activities;
f) Key partnerships or the partners of the business;
g) Revenue streams the company obtains from each customer segment;
h) Cost structure including the costs of the business;
i) Channels used to deliver the value proposition to clients.

The authors mention the importance of the value proposition and of customer segments as the basic factors, that have to be clearly defined before all other elements are analyzed. Without a clear and proper definition of the differentiating offer of the value proposition and targeted customer segments, all other factors cannot be applied correctly for the market.

Daum (2010) emphasizes the importance of a suitable business model at the right moment for the proper target group. This implies the business model becomes suitable if several elements match, respectively the offer creating value, the way to

create value and the profit model match the target groups' and stakeholders' requirements, bringing a competitive advantage. Practically, value creation and the concept of business model are strongly linked according to more authors. For example, the value is recognized as the internal source of competitive advantage of a business, through which a business can be differentiated from its competitors (Lambert & Davidson, 2013, pp.675-676). Morris, Schindenhutte, and Allen (2005, p.734) state the importance of implementing the SMART concept (simple, measurable, achievable, reachable and time oriented) for a business model, which should also be simple to communicate and logic for both employees and management, which can be done with the help of a set of rules. This way the business model has to comprise a complex overview of a business so that the objectives of the management and the development potential of the company become achievable.

Rodgers (2010) mentions variables, that lead to value creation, such as company characteristics and the industry, that determine the factors creating the value and eventually through the strategic abilities of the firm the final objective of value will be reached. A balance is necessary between all these elements in order not to damage the final scope of value creation. Teece (2010) also supports this view, as he emphasizes again this concept of value creation and mentions a business model is the way a company uses and converts resources and competences in economic value. Practically this implies using resources and competences to deliver value to customers, that are stimulated to pay for this value and then the manner or the development of the ability to '' convert those payments into profit'' (Teece, 2010, p.172).

While corporate sustainability refers to ''obtaining a competitive advantage through strategic adoption and development of processes for ecological and social processes of production and of products and services of a company as mentioned by Yilmaz and Flouris (2010, p.163), a sustainable business model assumes a model, where sustainability is an essential element for defining key objectives and for decision taking (Stubbs & Cocklin, 2008). An author, who debated the issue of a sustainable business model and the elements that it contains was that of Bocken et al. (2014), that described the following factors as specific variables for such a model, as described in Table 1.

Table 1. Sustainable business model elements (reformulated based on Bocken et al., 2014)

Economic characteristics	**Environmental characteristics**	**Social characteristics**	**Multidimensional characteristics**
-Measuring performance by taking into consideration the three bottom line (people, planet, and profit) - Change of perception that profit is the final goal, but a tool	-Closed loop system in the sense of taking responsibility for the product throughout the whole lifecycle -Industrial ecosystems and	-Involvement abilities of stakeholders -Educating stakeholders -Involving stakeholders in organization decisions	- System approach: Cooperative strategy and planning Cooperative model, that includes the supply chain: competitors, government institutions, etc.

- Lobby for changes in the taxing system and regulations in the direction of sustainability - Shareholders investing for social and environmental reasons, but also for financial reasons	stakeholders' networks - Nature is treated as a stakeholder	-Implementing an approach also from the perspective of stakeholders -Adjusting to stakeholders view	A model based on demand and not on offer, respectively the concept of discouraging the selling of excessive quantities and only quantities and items the consumers need -Medium and long term focus -Consumption decrease

According to Bocken et al. (2014), it offers one of the most specific overviews of the elements, that should be contained by a sustainable business model as illustrated in Table 1. An interesting fact for this description is that besides economic, social and environmental elements, the author refers to multidimensional factors, that combine the earlier mentioned and also emphasize the macroeconomic conditions necessary to reach the sustainability goals, such as consumption decrease, a medium-and long term perspective opposite to the current short-term perspective and discouraging individual strategies of overselling from the part of the companies. The profit is also seen as an instrument and not as a final goal as the existing business models have viewed it so far as the ultimate goal of the company for which all aspects of the business have to be adjusted accordingly.

This type of model described in the Table above is also emphasizing the importance of a cooperative type of activity through the involvement of all stakeholders of the company and especially taking into consideration all perspectives before implementing changes or decisions. Bocken et al. (2014) also recognize the need to educate stakeholders for a medium-to long term, as they should understand and apply the significance and principles of sustainability and be willing and able to cooperate efficiently in this direction with companies and other types of organizations.

Practically in a sustainable business model, a change of mentality of the management is needed, as the company does not focus anymore on constant profit for a short term, but focuses on an overall medium-and long term perspective. This type of focus assumes an analysis for the future of the consequences of the enterprise actions and of the benefits, that could be created by it for people, planet, and profit. The Ellen McArthur Foundation (2018) also refers to redesigning products from before the production phase, namely to create a "system that is restorative or regenerative by intention and design, that can be achieved by eliminating waste through the superior design of materials, products, systems and, within this, business models". Also, partnerships between the business field and the academic sectors will often be necessary as the need for finding solutions will imply cooperation with partners from all fields (Dima, Hadad, & Luchian, 2017), including the research field as a basis for conceptualizing the necessary decisions for the integration of sustainable business models within an organization. Brătianu and Pînzaru (2015) also emphasize

knowledge and intellectual capital of universities represent currently an important core competence in getting a competitive advantage. In the same time, involving students and other key stakeholders in knowledge management strategies leads to positive outcomes (Zbuchea, Pînzaru, & Anghel, 2014). The sustainable business models concept is also strongly related to the circular economy concept through the approach of the planet perspective, by minimizing waste, recycling, and reintegration and producing renewable energy and clean products and services, according to Yamamoto and Hosoda (2016), circular economy referring to the concept of recycling based economy of 3R ("reduce, reuse and recycle").

The sustainable business model elements of Bocken et al. (2014, p.120) also contain some ideas of the four principles of a circular economy described by Williams (2014), namely:

1. A real circular economy produces zero waste. All elements are used and no rests are thrown away because waste has already been designed out by making things for repair, disassembly, and reuse.
2. "There are two types of industrial components: disposable and durable. Disposable ingredients are those that can biodegrade, such as paper or fabric. Second, there are 'technical' ingredients like metal or plastic that can be reused. Things must be one or the other so that everything can be either reused or put back into nature. More complex objects should be designed to be dismantled so that they can be sorted into those two categories at the end of their lives.''
3. "If this industrial cycle is to be sustainable, then the energy that powers it needs to be entirely renewable. This also reduces businesses exposure to resource depletion or supply shocks." In this sense, renewable energy projects have been a main addition to the landscape of many regions globally in the last years.
4. Clients are no longer consumers; they are considered users. This implies that companies will insure taking back the materials, that result from usage. That could also imply a reward to return things at the end of their useful life, or it could mean more leasing, renting and sharing. This last type of concept is already applied for multiple business initiatives globally, especially to return plastic items, whereas the users are usually rewarded with a low financial gain in certain regions, that stimulates though the returning of the products.

All four elements of the circular economy principles as described by Williams (2014) can be found in Bocken et al. (2014) sustainable business model, which again emphasizes the link of these type of business models also to the circular economy concept. Referring to the design of products and services from before the phase of production, one must address the issue of choosing raw materials, implemented technologies, estimated produced waste quantities, as well as the whole process of recovering the waste. A sustainable business model ensures all these steps, in order to limit and control the potential environmental and public harmful consequences, that could be caused by the offer and processes of the organization. This is why the management of an organization needs to document the future steps from purchasing raw materials to storing, production, selling, and service, maintenance and recycling.

Based on the existing business model canvas of Osterwalder and Pigneur (2010, pp.15-44) a new canvas is proposed integrating sustainable elements, respectively a sustainable business model containing the following elements:

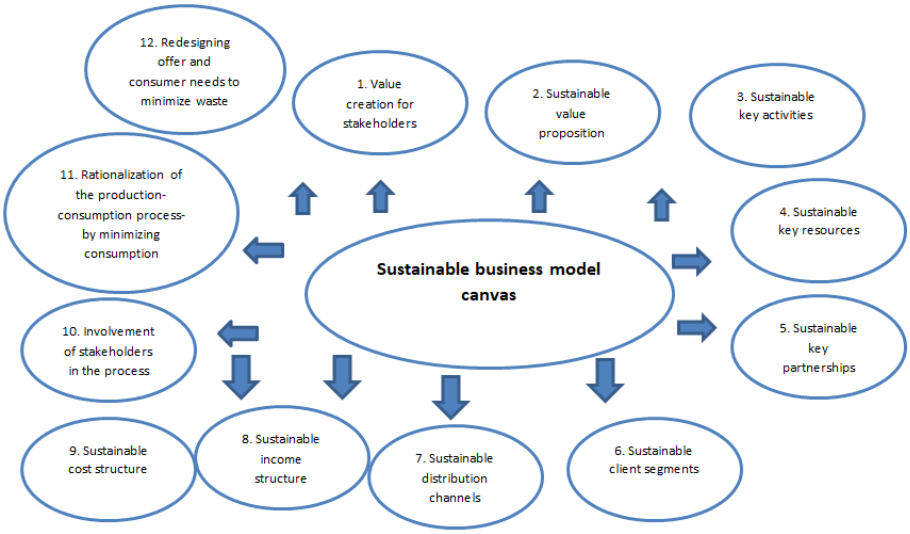

Figure 2. Sustainable business model canvas (Author's own research based on Osterwalder and Pigneur business model canvas, 2010)

Besides the nine existing elements of the Osterwalder and Pigneur business model canvas, that are also transformed into sustainable elements, the current canvas also adds four more specific elements in the sense of sustainability, namely: value creation for stakeholders in the sense of perceived value creation, involvement of the stakeholders in the process of production and recycling or reintegration of waste, rationalization of the production-consumption process by minimizing consumption, in the sense of unnecessary consumption and redesigning offer and consumer needs in order to minimize waste. The first three added sustainable elements of the sustainable business model canvas were added based on the scientific literature of Bocken et al. (2014) and Stubbs and Cocklin (2008), who mention partly these aspects in their papers.

1. The creation of value for the stakeholders is also a new type of concept in the sense of perceived value, as until recently the main objective of the company was to create products and services only for an economic purpose, the financial gain. A sustainable business model implies that stakeholders of the company become partners and not only indirect beneficiaries. The direct involvement of stakeholders is also a key element for implementing a sustainable business model, as these parties can offer a direct overview of their needs and preferences, but also suggest approved solutions for social, economic and environmental issues of a company. Practically, the mentality of management, that stakeholders, especially clients or directly involved partners of the business are external factors should be changed and they should be seen as direct and permanent partners. For example, in the IT field, if the Agile

software development model is implemented, stakeholders, including employees can be involved even weekly for a feedback on the product (Maximini, 2018, p.8).

2. A sustainable value proposition implies a differentiated offer from the competition, that creates value for the customers but also respects the sustainability concept. For this, the management of the companies has to redesign from the beginning the products or services it creates, either that they minimize or eliminate waste or that they ensure the recycling, treatment or reintegration of waste in the production process or other processes or offers. Practically the management needs to have from the beginning of offer design an overview of the whole production-consumption-disposal and reintegration process in order to coordinate the whole process in the direction of sustainability. A sustainable value proposition can also mean the transformation of products into services, that do not produce waste or produce less waste, where possible.

3. Sustainable key activities are activities, that bring success to the company and also contribute to the objective of sustainability. As an example, corporate social responsibility activities can contribute to both these objectives and also the activities that ensure the process of the production with the minimum waste creation and maximum waste treatment.

4. Sustainable key resources include raw materials, personnel, technological, capital and other. Sustainable key resources could imply from the point of view of the personnel integrating an organizational culture based on the values of sustainability, integrating clean raw materials, green energy and other such sources for the processes and activities of the company, that would reduce environmental damage and would also contribute to the well-being of the consumers.

5. Sustainable key partnerships refer to essential partners for the business, where also non-government organizations, activists, and other parties can contribute, for example, also for lobbying for sustainability and change of legislation and taxation in this direction. Partnerships can also be formed to sustain economic goals, but also to decrease environmental impacts, such as for example joining efforts for purchasing technology, that produces less waste or ensuring the recycling of waste and the use of the new product for one's business or for the community.

6. Sustainable customer segments represent the fact that the organization needs to leave the approach of increasing the mass sales, although at the same time the ensuring of the profit for development is necessary. The main approach has to focus on decreasing unnecessary consumption and rationalize the production-consumption process. The customer segmentation itself is not a strategic issue of an organization but is strongly linked with the value proposition, communication and distribution of company, that has to respect certain criteria for fulfilling the sustainability objective.

7. For sustainable distribution channels, no specific definition was found in the scientific literature. These channels can be used to increase the consciousness degree

of clients for the organization value proposition, but also for the sustainability efforts of the company. Sustainable distribution channels can be online platforms, digitalized websites, that sell digitalized products and services, as these do not produce waste or most frequently produce less waste. This is why a main trend currently is to offer services instead of tangible products, where possible. In order to establish a potentially proper sustainable distribution channel is to cooperate and involve stakeholders, so as to approach the best solution from their perspective.

8. A sustainable income or revenue streams structure is a challenge for most companies seeking for integrating sustainable business models. A possibility is to target recurrent payments from the customers, such as subscriptions and also the sustainable service of maintenance, repair, and recycling of products or product parts at the end of the life cycle. In this type of structure, the product or service are provided continuously generating income for the supplier, but also ensuring the sustainable maintenance and integration of the used product and product parts in order to minimize waste and environment damage. The issue with sustainable revenue streams is the fact that paradoxically, it is an effort from the part of the company, as being sustainable costs more and diminishes the revenues in general, however, on a long term these costs decreasing.

9. A sustainable cost structure is also a strategic issue in a sustainable business model. In order to obtain a sustainable cost structure companies, have to focus on minimization of costs and creating sustainable value creation simultaneously. Structures, such as economies of scale, for example, are usually less sustainable as they also encourage mass purchasing, excessive inventories and waste most frequently, furthermore stimulating mass sales and overselling to consumers at low prices (based on Osterwalder and Pigneur, 2010, pp.15-44). Economies of scope, that require a decrease of the average cost per unit through the production of two or more products can be sustainable if the products reflect real consumer needs and if they are produced with a limited number of resources, preferably renewable or ecological (Faulkner, 2002, p.15).

10. This involvement of stakeholders, for example, in the case of future ''neighbors'' of wind turbines has become almost an imperative in countries, such as the Netherlands, before the actual placement and construction in order to diminish further legal conflicts, but also to avoid landscape damage with the placement of wind turbines (Nichifor, 2016). Furthermore, as Bocken et al. (2014) mentioned, nature is considered as well a key stakeholder of the company.

11. The rationalization of the production-consumption process in the sense of minimizing consumption is an essential element for satisfying customer needs, however, not encouraging more consumption than necessary, for example through overselling or discounts as marketing strategies for consumers or by purchasing excessive quantities for the production, that could generate waste and excessive inventories. Practically, the sustainability principle imposes the change of the traditional buy –consume-dispose model and requires rationalization from the part of producers and consumers in order to establish a natural balance between offer and demand. Secondly, as mentioned in order to avoid environmentally damaging

offers producers should focus on service production, where possible, instead of goods production, such as for example in the case of digitalization of records instead of copying and producing CDs. Tangible products produce in general waste after their consumption unless renewable or reusable sources of production are used.

12. The last sustainable element of the canvas in Figure 2 above was added based on the tendency of the companies to redesign products and services in the sense of producing minimum waste from before the production process until the full consumption and reintegration process. Another aspect, that served as the basis for this element was the tendency of companies of stimulating services, practically intangible goods instead of tangible goods, products, where possible and thus, contributing also to changing the needs of consumers over a middle to a long term. Furthermore, more companies that provide products, such as Phillips, focus now on ensuring subscriptions to the full service illumination services, such as providing lightbulbs, repairing and maintenance, as well as recycling of these at the end of the life cycle, so that they are not disposed of (Robeek, De Swart, & Van der Plas, 2018). This concept also contributes to ensuring a sustainable revenue streams structure, respectively recurrent payments from the customers, such as subscriptions and also the sustainable service of maintenance, repair and recycling of products or product parts at the end of the life cycle. Practically, the company is not selling a product, lightbulbs, anymore, but the whole service package, including maintenance, repair, and recycling of used products, that controls significantly the disposal of products and ensures a high percentage of recycled and reintegrated products.

Based on the studies of Osterwalder and Pigneur (2010), Bocken et al. (2014) and Stubbs and Cocklin (2008) and other mentioned authors, as well as current tendencies in the private field, the elements of a sustainable business model canvas in Figure 2 are proposed to contribute to the canvas of Osterwalder and Pigneur (2010) and add further in the sense of sustainability.

Conclusions and implications

As a conclusion sustainability requires frequently a restructuring of the management mentality and the business models of the organizations, implying substantial efforts in the sense of organizational culture and a different approach than the traditional mass production and mass consumption concept. While the existing business model, focusing on financial gain, is starting to be replaced gradually by sustainable business models, focusing on the triple bottom line simultaneously, the companies have to redesign processed, production, activities and several structures in order to align at the sustainability principles.

The proposed sustainable business model canvas based on the model of Pigneur and Osterwalder (2010, pp.15-44) includes besides the existing nine building blocks: value proposition, customer segments, key activities, key resources, key partnerships, cost structure, revenue streams, channels, customer relationship four more elements, that contribute to sustainability concept integration. Furthermore,

the mentioned nine building blocks of these authors are explained in the context of being sustainable. The four added elements are value creation for stakeholders, the involvement of the stakeholders in the process, rationalization of the production consumption process, in the sense of minimizing consumption and redesigning offer and consumer needs in order to minimize waste. These four elements were added based on the studied scientific literature (Bocken et al., 2014; Stubbs & Cocklin, 2008), as well as observed business practices in the current context, adding suggestions of process and production redesign and restructuring from the beginning of the production process to service, maintenance, and recycling. The proposed model emphasizes the need of direct stakeholders' involvement, such as customers, government institutions, communities and other parties to support the strategic decisions of the company, as well as to support its sustainability measures. The model supports also the view of Bocken et al. (2014), that nature is also a key stakeholder of the business and a main subject of focus to deal with.

The revenue streams structure is also an important part of the design of a successful sustainable business model, that has to encourage not only a buy-sell-dispose of product but a complete package of services, that could include a subscription to the whole package ensuring recycling and reintegration of the produced waste back into the system of production or other processes and activities. Thus, the sustainable business models, although not usually theoretically documented in the private business field have started to become the main type of business models used and are an essential topic of scientific research for the following period as the necessity of their implementation became obvious. Furthermore, a new approach to education for the population, employees and all social levels is necessary in order to succeed in implementing this type of business model.

A future objective of the research is to observe how the sustainable business models will continue to evolve and be implemented in the business field and endeavor to add more elements and changes accordingly to the theoretical business model illustration in order to support a potential canvas, that can offer a basis for structuring business models fulfilling all financial, social and environmental objectives.

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