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## **Bachelor thesis**

Science and Innovation Management

### **Achieving sustainable organizations**

*Sustainable business models for implementing corporate sustainability into organizational culture*

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## 1. Introduction

The current dominant model of most businesses draws on neoclassical economic theory (Egri & Pinfield, 1996; Stormer, 2003), which implies that the primary goal for those businesses is still to maximize profits for their shareholders (Stubbs & Cocklin, 2008). However, since this management orientation is not able to effectively address ecological degradation (Shrivastava, 1995), the call for more sustainability in business is getting louder (Bansal, 2002). In the current model, profits are the goal of an organization, where in a sustainable organization profits are a means to achieve sustainable outcomes (Stubbs & Cocklin, 2008). Corporate sustainability activities in sustainable organizations can be seen as a source of value creation, for the company as well as for society (Baumgartner, 2009). For an organization, in order to achieve this level of corporate sustainability, it is important to be aware of the existing organizational culture (Linnenluecke & Griffiths, 2010), and to possess willingness to reach a fit between this culture and the sustainability activities (Baumgartner, 2009). In order to integrate sustainability in the activities of the organization, the organizational culture has to be developed towards sustainability (Baumgartner, 2009; Linnenluecke & Griffiths, 2010).

In this light, a sustainable business model could foster the development of sustainability concepts and so shape the driving force of the firm in a sustainable way (Stubbs & Cocklin, 2008). A sustainable business model can act as an alternative to traditional business models in enabling more sustainable use of technologies (Girotra & Netessine, 2013). However, although many academics, research institutions and business organizations have made attempts to develop sustainable business models and strategies (Baumgartner, 2009), understanding of sustainable business models is weak (Sharma, 2002). Furthermore, according to Bansal, also understanding of how sustainable development is operationalized in firms is weak (Bansal, 2005). Research is conducted on the relationship between corporate sustainability and organizational culture (see, e.g., Baumgartner, 2009; Linnenluecke & Griffiths, 2010), but in this relationship scholars do not sufficiently treat the role of sustainable business models.

In order to fill up this research gap, this paper will seek to answer the following research question:

“To what extent could sustainable business models contribute to implementation of corporate sustainability in organizational culture?”

By answering the research question, the research will not only contribute to an enlarged scientific knowledge on the relationship between sustainable business models and organizational culture. It will also, in a practical way, give firms insight in ways to achieve a more sustainable organization by incorporating sustainability activities in their daily business. Furthermore, it will provide information about social and environmental priorities and in that way contribute to a change of the neoclassical economic paradigm towards a more sustainable model. Finally, the conceptual model presented in the discussion section will serve as a guide for future research concerning the interconnection between the

concepts of sustainable business models, corporate sustainability and organizational culture.

For answering the research question, a narrative literature review will be conducted. The following outline will be used. First, in the theoretical section, the three concepts that can be derived from the research question, *corporate sustainability*, *sustainable business model* and *organizational culture*, will be defined. Next, the methodology of the research will be explained in the methods section. Thirdly, the results of the paper will be presented in the results section. Subsequently, these results will be linked to the theoretical section and limitations and pitfalls will be discussed. Finally, an answer to the research question will be presented in the conclusion section and suggestions for further research will be proposed.

## **2. Theory**

For answering the research question, three concepts can be distinguished that should be further defined, namely *corporate sustainability*, *sustainable business models* and *organizational culture*. By first defining the concepts it will later be possible to interconnect them and provide an integrated conclusion. Thus, first the concept of corporate sustainability and the concept of a sustainable business model will be discussed. Next, the concept of organizational culture will be defined. Finally, a conceptual model will clarify the interconnection of the three concepts.

### **2.1. Corporate sustainability**

The concept of corporate sustainability draws back on the broader concept of *sustainability*, which, according to Kidd, is a composition of a wide range of economic, political, and social goals (Kidd, 1992). Due to influences from the management literature the focus of sustainability tended more towards organizational aspects and so the concept of *corporate sustainability* (Linnenluecke & Griffiths, 2010). According to the International Institute for Sustainable Development (IISD) the concept can be explained as 'the adoption of business strategies and activities that meet the needs of the enterprise and its stakeholders today while protecting, sustaining and enhancing the human and natural resources that will be needed in the future' (IISD, 1992). The use of the concept of corporate sustainability gave organizations a possibility to deal with ecological and social issues while at the same time incorporate organizational objectives (Sharma & Starik, 2002). Sustainability itself is about combining these three important aspects, namely social, environmental and economic (Bansal, 2002; Dyllick & Hockerts, 2002).

As with the concept of sustainability (e.g. Bansal, 2002; Dyllick & Hockerts, 2002; Sharma & Starik, 2002), also in the corporate sustainability field a distinction can be made between social, economic and ecological approaches (Linnenluecke & Griffiths, 2010). While some scholars focus more on the ecological aspects of corporate sustainability (Kidd, 1992; Shrivastava, 1995), others tend towards the relation between economic performance and sustainability (Dunphy, Griffiths, & Benn, 2003; Sharma & Starik, 2002) or the

social side of corporate sustainability (Azapagic & Perdan, 2003; Garriga & Melé, 2004; van Marrewijk, 2003).

In short, this research shows a wide field of possible interpretations and views on the concept of corporate sustainability. It can be stated that the concept of corporate sustainability can be approached in ecological, economic or social context. However, while a lot of literature deals with the concept of corporate sustainability, still little is known about the implementation of corporate sustainability practices in organizations (Linnenluecke & Griffiths, 2010). A sustainable business model viewed in the light of organizational innovation is a combination of different organizational aspects directed towards corporate sustainability (Boons & Lüdeke-Freund, 2013). Thus, a sustainable business model could foster the development of sustainability activities in organizations.

## 2.2 Sustainable business models

As Teece points out, the core of a traditional business model is to define the way an organization delivers value and makes profit out of that same value (Teece, 2010). However, a *sustainable* business model is more on the conceptual link between sustainable innovation and economic performance (Boons et al., 2013). By implementing innovative business models that enable the more sustainable use of technologies, the environmental impact of organizational activities can be reduced. In that light, the shift from the traditional business model to a sustainable business model can be seen as an optimization process (Girotra & Netessine, 2013).

After reviewing more than 100 articles, Boons and Lüdeke-Freund identified three important elements of a business model linked to sustainable innovation (Boons & Lüdeke-Freund, 2013; Boons, Montalvo, Quist, & Wagner, 2013). First, *value proposition* is about the value that is exchanged with the customer. The value proposition element is described by Osterwalder and Pigneur (2010) as 'the bundle of products and services that create value for a specific customer segment'. Second, *value creation* deals with the larger system in which the organization is embedded and defines the relationship with suppliers. Third, the *financial model* treats the distribution of costs and benefits and the relationship with stakeholders (Boons & Lüdeke-Freund, 2013). Adding to the ongoing debate about the elements of a business model, Osterwalder and Pigneur (2010) developed a so-called Business Model Canvas in which nine necessary building blocks were identified. The building blocks represent the logic of how an organization is able to make profits, and cover the four main areas of a business: customers (customer segments, customer relationships), offer (value propositions, key activities), infrastructure (channels, key partnerships, key resources), and financial viability (cost structure, revenue streams) (Osterwalder & Pigneur, 2010).

According to Lüdeke-Freund 'comparable conceptual notions of sustainable business models do not exist today' (Boons & Lüdeke-Freund, 2013; Lüdeke-Freund, 2009). However, Boons and Lüdeke-Freund identify a significant number of business models incorporating sustainability issues (Boons & Lüdeke-Freund, 2013). Based on this research and the work of Wirtz (2011) three important streams from which scholars regard sustainable business models can be distinguished. First, the *technological innovation* stream highlights the

necessary fit between technological characteristics and new commercial ways in which the organization is able to capture value (Boons & Lüdeke-Freund, 2013; Wirtz, 2011). Next, the *organizational innovation* stream deals with organizational culture. Stubbs and Cocklin intend to explore the concept of sustainable business models in the light of an alternative, more ecological, paradigm to the neoclassical economic worldview. They focus on an organizational culture change related to sustainability (Stubbs & Cocklin, 2008). Boons and Lüdeke-Freund (2013) classify the implementation of organizational innovation as 'changing the way of doing business'. Third, the *social innovation* stream deals with the social aspects of value creation and the functioning of business models as a market device that enables sustainable innovation in combination with market competition (Boons & Lüdeke-Freund, 2013; Wirtz, 2011).

The three streams discussed above do not represent totally different phenomena. Instead, they are interrelated and it can be said that in every sustainable business model all three streams are, to some extent, present. Summarizing, the elements of a sustainable business model focus on the offer in relation to the customer (value proposition), the creation of value in relation to the system as well as suppliers and the distribution of the captured value in the business system in relation to stakeholders. The elements of a sustainable business model emphasize the way in which an organization is able to make use of sustainable technologies to eventually capture value. However, for a business model to successfully address sustainability issues it is needed to interconnect these elements with a number of sustainable requirements (Boons & Lüdeke-Freund, 2013). According to Boons and Lüdeke-Freund (2013), these requirements entail the willingness of suppliers and customers to take responsibility with respect to their contribution towards sustainability, and a balance between ecological and economic value. Lovins et al. state that, for every organization, 'a vibrant ecological web underpins their survival and their business success' (Lovins, Lovins, & Hawken, 1999). In this light, a sustainable business model is the market device with which these sustainable requirements can be implemented into the organization (Boons & Lüdeke-Freund, 2013; M.W. Johnson, 2010). In order to successfully integrate sustainability activities into the organizational day-to-day business, the organizational culture has to be changed (Baumgartner, 2009). However, it remains unclear exactly *how* this implementation relates to the organization and its organizational culture.

### **2.3 Organizational Culture**

In the literature, a great variety of different definitions of the concept of organizational culture exist (Wilson, 2001). One of the most used definitions is the definition of Schein. He emphasizes the basic assumptions of a group: "The culture of a group can be defined as 'a pattern of shared basic assumptions that the group learned as it solved its problems of external adaptation and internal integration, that has worked well enough to be considered valid and, therefore, to be thought to new members as the correct way to perceive, think, and feel in relation to those problems'" (Schein, 1997). Based on Schein, Baumgartner identifies three levels of organizational culture: artifacts, values and basic assumptions (Baumgartner, 2009; Schein, 1997). *Artifacts* are the visible

structures and processes in which organizational activities take place. *Values* are about strategies, goals and espoused philosophies. Finally, *basic assumptions* are unconscious beliefs, thoughts and feelings that underlie values and artifacts and are labelled as the essence of organizational culture (Baumgartner, 2009; Schein, 1997).

Although scholars have different views on the manageability of organizational culture, most academics agree on the fact that it is at least to some extent manageable (Baumgartner, 2009). The levels identified by Schein play a major role in managing organizational culture. Culture change within an organization is for a great deal dependent on the values, underlying assumptions and ideological underpinnings of the organizational culture (Jarnagin & Slocum, 2007; Linnenluecke & Griffiths, 2010). Successful implementation of culture change will thus to a substantial extent take place on the deeper levels of organizational culture.

Managing these deeper levels is complex (Baumgartner, 2009). It is risky to try to derive values and basic assumptions from artifacts, since artifacts are to a reasonable extent projections of constantly changing feelings and emotions (Schein, 1997). However, when cognitive transformation of new artifacts into espoused values and later on into basic assumptions is successful, they will be taken for granted and be anchored more and more into the organization (Baumgartner, 2009; Schein, 1997). In this way, the organizational culture will be, to some extent, changed. Organizational culture changes slowly over time due to variation and alteration of factors such as business environment, leadership, management practices and socialization processes (Baumgartner, 2009; Schein, 1996, 1997; Wilson, 2001).

Concluding, it can be seen that three levels of organizational culture can be identified. These levels play a role in managing and changing organizational culture, as implementation of culture change will be most substantial at the deeper levels. The deeper levels of organizational culture (values, basic assumptions) are important for implementation of permanent sustainable culture change. Besides that, the artifacts level can contribute to surface corporate sustainability as well as act as a first step of implementing corporate sustainability into the deeper levels.

## 2.4 Conceptual model

As can be seen in the schematic conceptual model below, three links between the concepts exist that can be investigated. These links will be further defined in the methods section.



### 3. Methods

In this section the used methods will be described. The outline of the research will follow a narrative structure, as described by Bryman (Bryman, 2008). Consequently, the literature review in the theoretical section will act as a springboard for treating the research topic and will be a means of specifying what is already known in connection with the research topic, so that the research question can then be examined in the results section. The results section will therefore treat the three concepts defined in the theoretical section and bring them together in order to eventually develop a conceptual model defining the interrelation of these concepts. For developing such a theory-building conceptual model, a narrative literature review is a valuable technique (Baumeister & Leary, 1997; Stubbs & Cocklin, 2008). Furthermore, a narrative literature review is especially valuable when interconnecting studies on different topics (Baumeister & Leary, 1997). According to Bryman, some scholars tend to focus on the fact that a systematic review will enable researchers to be more precise and thus will help to make research evidence more usable (Bryman, 2008). In this view, a narrative review is less valid and generalizable. However, Hammersley (2001) states that the difference between a systematic and narrative review is overstated. Furthermore, he concludes that a narrative review involves researching the interrelation between concepts and 'how their interrelations can be used to illuminate the field under investigation' (Hammersley, 2001), thereby supporting the validity and generalizability of a narrative review. Generalizability of the research will in particular be applicable to cases incorporating and interrelating the three concepts treated in the theoretical section. The conceptual model will serve as a guide for future research concerning the interconnection of these concepts.

Information will be gathered by the use of two different electronic search engines, namely *Google Scholar* (<http://scholar.google.com>) and *Scopus* (<http://www.scopus.com>). Searching on these two search engines, the following search terms will be used: *sustainable business model*, *organizational culture* and *organizational sustainability* and *corporate sustainability*. The reason for including the keywords *organizational sustainability* is to ensure the possibility of an organizational orientation of the found articles instead of restricting to *corporate* sustainability. Backward and forward snowballing will be used in order to find useful data that did not include the above search terms.

Articles that are found will be interconnected so that an answer to the research question can be formed. In order to properly conduct this, the research will be shaped using the conceptual links presented in section 2.4. More specifically, these links will provide information about possible relations between the concepts treated in the theoretical section. However, for the research question treated in this paper, only two of the three presented links will be researched. The scope of the paper comprises of the implementation of sustainable business model related corporate sustainability practices in organizational culture, and not of the shaping of organizational culture by sustainable business models. From this viewpoint the direct relationship between *sustainable business models* and *organizational culture* is not directly important for answering the research question. Thus, researching this third link is beyond the scope of this paper. This



limitation will be further treated in section 5.

To address the remaining two links in such a way that they can contribute to an answer to the research question, they are each defined in the form of a question. Firstly, the link between *sustainable business models* and *corporate sustainability* will be analysed: *in what manner can corporate sustainability be incorporated in a sustainable business model so that it can be implemented in the organizational culture?* Secondly, the link between *corporate sustainability* and *organizational culture* will be researched: *in what way can corporate sustainability be implemented in organizational culture, using a sustainable business model?* By answering these two questions, a conceptual model of the interrelation between the three concepts will be formed and an answer to the research question will be presented (*to what extent could sustainable business models contribute to implementation of corporate sustainability in organizational culture?*). An article will be included in the review if it deals with one of the two links mentioned above. Since the review is a narrative review and therefore has a tendency to be cumulative (Bryman, 2008), no minimum publication year for the used articles will be used. Articles will only be used if published in peer reviewed and English written journals.

#### **4. Results**

Emanating from the previous theory and methods, in this section the results will be presented. As was stated in the methods section, three concepts will be treated. Each of the concepts represents a field of research, defined in the theoretical section. The overlap between the three fields will be researched in this section using the conceptual links earlier presented in section 2.4. Combining the two conceptual links and answering the relating questions mentioned in the methods section, the overlap between the three conceptual fields will become clear. To properly conduct, first existing approaches towards corporate sustainability and sustainable business models will be researched. This will provide an overarching view from which the presented conceptual model can be regarded.

##### **4.1. Approaches towards corporate sustainability and sustainable business models**

In order to shape the conceptual model, first of all the three approaches towards corporate sustainability presented in section 2.1 (ecological, economic and social) need to be researched. As several scholars argue, organizations are never separated from their natural environment but are in fact located within it and therefore have to operate accordingly (Lovins et al., 1999; Sharma & Starik, 2002). Shrivastava advocates a new paradigm for management in which all business activities are assumed to have a more ecologically centered role in the organization (Shrivastava, 1995). Just decreasing waste and pollution is not sufficient for becoming ecologically sustainable. Organizations instead have to work on their ecological footprint in combination with economic concerns and furthermore have to act in accordance with the capacity of their natural environment (Sharma & Starik, 2002).

The economic aspects of corporate sustainability can be brought back to

two basic assumptions. First, economic and financial performance of an organization is crucial for the survival of the company. Second, however, research suggests that the maximization of profits, production and consumption will in the end not lead to overall sustainability of corporations (Sharma & Starik, 2002). Giving attention to environmental issues is inevitable and can even lead to increased firm performance (Sharma & Vredenburg, 1998).

From a social viewpoint, achieving corporate sustainability is about getting three important factors in line: *economic priorities*, *environmental objectives* and *social concerns* (Azapagic & Perdan, 2003). The link between social and corporate sustainability can be understood in the light of the widening of organizational responsibilities. In a world that is constantly moving towards a situation of globalization, organizations have to share responsibilities with the communities in which they operate (Carroll, 1999; Dunphy et al., 2003).

Likewise, various articles mention three interconnected so-called pillars on which corporate sustainability is based, namely economic, environmental and social (Bansal, 2002; Montiel, 2008; Robinson, 2004). The relationship between the pillars can be understood by taking into account that economy (the economic pillar) is part of society (the social pillar), which in turn is part of the larger ecological system (the ecological pillar) (Montiel, 2008).

As can be seen, several scholars deal with corporate sustainability focusing on economic, social and ecological aspects. These three aspects are interrelated and together form a spectrum of views from which the concept of corporate sustainability can be regarded. For all three approaches a combination of economic and ecological concerns is mentioned as necessary for achieving corporate sustainability. This view on corporate sustainability can be compared to the three ways in which scholars deal with the concept of sustainable business models, as was presented in the theoretical section. By doing so, a considerable difference is revealed.

Looking at section 2.2, it can be stated that the concept of a sustainable business model is regarded from a technological, organizational and social point of view. The technological view deals with the contribution of technology to innovation, the organizational view deals with organizational culture and the value chain and the social view deals with the functioning of a sustainable business model as a market device to enhance sustainable innovation (Boons & Lüdeke-Freund, 2013; Wirtz, 2011). However, an ecological view on the concept of sustainable business models is not treated. As was stated before, an ecological view on business activities is needed to successfully implement sustainable business activities. Organizations are located in an ecological environment and thus have to act accordingly (Sharma & Starik, 2002), while at the same time this should be balanced with economic performance of the organization.

#### **4.2 Sustainable business model and corporate sustainability**

Concerning the link between a sustainable business model and corporate sustainability (*in what manner can a sustainable business model shape corporate sustainability so that it can be implemented in the organizational culture?*), three elements of a sustainable business model can be distinguished, namely value proposition, value creation and financial model (Boons & Lüdeke-Freund, 2013).

As was stated before, to successfully address sustainability issues it is needed to interconnect these elements with a number of normative requirements. Thus, of each of these three elements, that were earlier mentioned in the theoretical section, the relationship with respect to the concept of corporate sustainability can be defined. An overview of this is presented in Table 1. Of each article that was found and that provided information with respect to the specific link between a sustainable business model element and corporate sustainability, the key findings were extracted.

<b>Sustainable business model elements</b>	<b>Authors</b>	<b>Key findings with respect to corporate sustainability</b>
<b>Value propositions</b>	Boons & Lüdeke-Freund, 2013	In order to enable sustainable value propositions, the <b>balance between product performance and environmental effects</b> must be recognized.
	Boons, Montalvo, Quist, & Wagner, 2013	For sustainable value propositions, focus must be on the <b>balance between economic, social and ecological value</b> as well as on the <b>needs that are articulated by consumers</b> .
	Roy, 2000	<b>Designing more sustainable products in terms of environmental burden and resource use</b> can contribute to sustainability of the offer.
	Yunus, Moingeon, & Lehmann-Ortega, 2010	It is possible to change value propositions in a sustainable way.
<b>Value creation</b>	Boons, Lüdeke-Freund, 2013	<b>Changing the focus of value creation</b> is the primary purpose when developing sustainable business models. Focus should not be on earning money but rather on social issues.
	Manzini & Vezzoli, 2003	Sustainable business ideas should be linked with <b>changing economic and cultural paradigms directed at sustainability</b> .
	Mont, 2002	To implement more sustainable value propositions, <b>adaptation on a broader system level</b> is required.
	Roy, 2000	More sustainable product concepts and designs should be developed as parts of <b>sustainable whole systems</b> .

<b>Financial model</b>	Boons & Lüdeke-Freund, 2013	Focus of the financial model should be on <b>the fulfilment of needs</b> , not the maximization of profits.
	Lovins, Lovins & Hawken, 1999	The <b>combining of economic and ecological goals</b> is necessary for every organization and will contribute to a shift towards a <b>new, more ecological paradigm of production</b> .
	Maas & Boons, 2010	The financial model accounts for the <b>ecological and social impacts</b> of the organization.

*Table 1: overview of the found key findings relating to corporate sustainability of sustainable business model elements*

### ***Value proposition***

The value proposition element consists of a bundle of benefits that an organization offers customers (Osterwalder & Pigneur, 2005, 2010). Osterwalder and Pigneur identify eleven different elements that can contribute to such a bundle of benefits: newness, performance, customization, getting the job done, design, brand/status, price, cost reduction, risk reduction, accessibility and convenience/usability (Osterwalder & Pigneur, 2010). Surprisingly, none of these elements deals explicitly with the issue of corporate sustainability. Hence, in this light room exists for more sustainable value propositions (Yunus, Moingeon, & Lehmann-Ortega, 2010).

Since the value proposition consists of the offer made to the customer, it is possible to change this value in a sustainable way (Boons et al., 2013; Yunus et al., 2010). In order to enable sustainable value propositions, the balance between optimal product performance and social and environmental effects must be recognized (Boons & Lüdeke-Freund, 2013). Offering a more sustainable product to the customer will enhance sustainability of the value proposition and thus corporate sustainability. Designing more sustainable products in terms of environmental burden and resource use can contribute to this (Roy, 2000). According to Girotra and Netessine (2013), a sustainable business model enables more sustainable use of technologies. Here, a balance between ecological and economic values in the production and consumption system is needed (Boons & Lüdeke-Freund, 2013). As Lovins et al. state, for a company's longevity, aligning business practices with ecological needs and an ecological view is necessary (Lovins et al., 1999). As was presented above, the literature does not sufficiently address these ecological values when looking at sustainable business models.

### ***Value creation***

The element of value creation emphasises the organizational relationship with the larger system and the larger value network (Boons et al., 2013; Morris, Schindehutte, & Allen, 2005). This relationship is both technically and socially and covers suppliers, partners and customers (Boons et al., 2013; Morris et al.,

2005). To effectively capture benefits from organizational sustainability developments, such as implementing more sustainable value propositions, adaptation on a broader system level is required (Manzini & Vezzoli, 2003; Mont, 2002; Roy, 2000). More sustainable product concepts and designs should be developed as parts of sustainable whole systems (Roy, 2000), as organizations can only be fully sustainable if the system of which they are part is sustainable (Jennings & Zandbergen, 1995). Thus, an important challenge for sustainable business model development is to link sustainable business ideas with changing economic and cultural paradigms at system level, directed at sustainability (Manzini & Vezzoli, 2003). As was mentioned before in section 4.1, the three views on corporate sustainability combine economic performance with inevitable attention to environmental issues. A sustainable business model that entails a system of products, services, supporting networks and infrastructure could be at the same time competitive, satisfy customer needs as well as reduce environmental impact and thus be more sustainable compared to traditional business models (Mont, 2002).

### ***Financial model***

The financial model element reflects the distribution of costs and benefits emanating from the value propositions and value creation elements (Maas & Boons, 2010). Besides that, it accounts for the ecological and social impacts of the organization (Maas & Boons, 2010). Boons and Lüdeke-Freund express the need of a paradigm shift. Financial models should focus on the fulfilment of needs instead of making profits by just selling amounts of products (Boons & Lüdeke-Freund, 2013). The combining of economic and ecological goals is necessary for every organization and will contribute to a shift towards a new, more ecological, paradigm of production (Lovins et al., 1999). The implementation of ecological policies, technologies and innovation in sustainable business models reflects an alternative to the traditional neoclassical economic paradigm (Stubbs & Cocklin, 2008).

### **4.3 Sustainable business model elements and organizational culture**

Summarizing the results presented in section 4.2, the elements of a sustainable business model contribute to the implementation of corporate sustainability practices in a different way, but are at the same time interconnected (Boons & Lüdeke-Freund, 2013). Developing more sustainable value propositions and so enabling a more sustainable offer to the customer can contribute to enhanced corporate sustainability. However, in order to achieve this, sustainability of the broader system must be guaranteed. For integrating economic performance with environmental issues, at the same time a shift towards a new ecological paradigm is needed. Furthermore, focus of organizational financial models should be on the fulfilment of needs rather than the 'price per unit' and the maximization of profits (Boons & Lüdeke-Freund, 2013; Mark W Johnson, Christensen, & Kagermann, 2008).

With this results, now the second link presented in sections 2.4 and 3 can be researched (*in what way can corporate sustainability be implemented in organizational culture, using a sustainable business model?*). A sustainable

business model requires that organizational values are directed towards sustainability outcomes, which expresses the need for organizational change in a sustainable way (Jennings & Zandbergen, 1995). Just pursuing sustainable organizational practices on surface level is not sufficient to develop sustainable organizations and industries, as these changes are only superficial (Linnenluecke & Griffiths, 2010; Senge, Carstedt, & Porter, 2001). Thus, sustainability changes in business should be implemented in organizational culture to eventually integrate corporate sustainability in the activities of the organization (Baumgartner, 2009). In order to successfully implement the concept of corporate sustainability in daily business of organizations, organizational change and adaptation on different levels is needed (Linnenluecke & Griffiths, 2010). These levels can be related to the cultural levels of Schein, discussed in the theoretical section.

On a surface level, the level of artifacts, adoption of corporate sustainability is enhanced by technical solutions, corporate sustainability reports and employee training and evaluation (Dunphy, Griffiths, & Benn, 2003; Linnenluecke & Griffiths, 2010). In particular technical solutions are related to the value propositions discussed in section 4.2. They cover technical aspects of the design of the products as well as in the production process in which sustainability can both be implemented. Schein depicts artifacts as the tangible and easily changeable phenomena and cultural products that a group of people produces (Schein, 1997). In that sense, value propositions can be seen as variable phenomena, such as product design, that occur on organizational surface level. Schein argues that the term culture should only be used to describe the deeper levels of organizational culture (Schein, 1997). Value propositions are in that sense not part of organizational culture. However, Schein also states that the more visible levels – artifacts, values – can be used to express, understand and describe the deeper rooted culture (Schein, 1996). Hence, changing value propositions in a sustainable way can either contribute to increased corporate sustainability on a surface level as well as act as the first step of implementing it into the deeper organizational culture.

In turn, the organizational relationship with the larger system and the financial model of the sustainable business model (the second and third element) are more related to the deeper levels of the organizational culture. As Linnenluecke and Griffiths state that the successful implementation of culture change is related to values and basic assumptions (Linnenluecke & Griffiths, 2010), successful implementation of culture change will to a substantial extent take place on the deeper levels of organizational culture. On the level of values, more ethical and responsible values contribute to implementation of corporate sustainability practices (Crane, 2000). Both the value creation element and the financial model element express the need of combining business ideas and economic performance with paradigms directed at sustainability (see Table 1). As a paradigm is based on fundamental rules and standards (Gladwin, Kennelly, & Krause, 2014), it is deeply rooted in the organizational culture. According to Kuhn, a paradigm entails a model problem and solution to a certain community (Kuhn, 1970). In that sense, since basic assumptions tell group members how to perceive, think and feel about things (Baumgartner, 2009), paradigms can be seen as basic assumptions. Thus, a shift towards a more sustainable and ecological paradigm can contribute to implementation of corporate

sustainability into organizational culture. For this, since humans and ecological systems are interdependent, a change in core assumptions is needed (Purser, 1994). Furthermore, on the basic assumptions and values levels of organizational culture, entailing a system of sustainable products, services and supporting networks and infrastructure could contribute to implementation of corporate sustainability in organizational culture. Finally, implementation of ecological policies, technologies and innovation on the basic assumptions and values levels could also contribute to incorporation into the deeper levels of organizational culture.

## 5. Discussion

In order to obtain a clearer interpretation of the presented results, in this section the results will be linked to the theoretical section. A conceptual model will be presented, forming the interconnection between the three theoretical concepts and a guideline for the contribution of sustainable business models to implementation of corporate sustainability in organizational culture. Furthermore, limitations and pitfalls of the research will be discussed.

In section 2.4 a conceptual model was presented that showed three links between the concepts treated in this paper. However, linking the previous results to the theoretical section, this model can now be further elaborated (see Table 2).

Sustainable business model: elements	Corporate sustainability: sustainability related aspects of sustainable business model elements	Organizational culture: levels
Value propositions	<b>Balance</b> between product performance and environmental effects	Artifacts: contribution to sustainability on surface level as well as the first step for implementing it into the organizational culture
	<b>Focus</b> on needs <b>Designing</b> more sustainable products in terms of environmental burden and resource use	
Value creation	<b>Positioning</b> within whole sustainable system <b>Focus</b> on social issues rather than earning money	Values / Basic assumptions: implementation of corporate sustainability into organizational culture
	<b>Paradigm shift</b> towards sustainability	Basic assumptions: implementation into deeper organizational culture
Financial model	<b>Combining</b> of economic and ecological goals	Values / Basic assumptions: implementation of corporate

	<b>Focus</b> on the fulfilment of needs	sustainability into organizational culture
	<b>Paradigm shift</b> towards more ecological paradigm of production	Basic assumptions: implementation into deeper organizational culture

*Table 2: conceptual model. Overview of the relationships between the three concepts.*

As can be derived from Table 2, on the level of artifacts three aspects deemed relevant for sustainability of sustainable business model elements can be distinguished. First, a balance between product performance and environmental effects needs to be established. Next, in this balance, focus must be on the articulated needs of customers. As was stated in the theory, value proposition is about the value that is exchanged with and offered to the customer (Boons & Lüdeke-Freund, 2013; Osterwalder & Pigneur, 2010). In the light of corporate sustainability, contribution of customers towards sustainability is vital (Boons & Lüdeke-Freund, 2013). Third, i.e. by designing more sustainable products, more sustainable value propositions can be realized and sold to the customer. These more sustainable value propositions will not be implemented into the organizational culture. However, by cognitive transformation into values and basic assumptions they can act as a first step of implementing sustainability into the deeper organizational culture (Baumgartner, 2009; Schein, 1997).

On a deeper cultural level, the value creation element entails three aspects deemed relevant for corporate sustainability. First, the positioning within the system is important. In order to achieve corporate sustainability, the whole system in which the organization is embedded must be sustainable. As was stated in the theoretical section, both suppliers and customers must take responsibility with respect to their contribution towards sustainability (Boons & Lüdeke-Freund, 2013). For this, a focus on social issues as well as a paradigm shift towards sustainability is important. As the value creation elements works on the deeper cultural levels of the organization, entailing a system of sustainable products, services and supporting networks and infrastructure provides a way to implement sustainability into the deeper organizational culture.

With respect to the financial model element, combining economic and ecological goals contributes to corporate sustainability. Next, a paradigm shift towards more ecological production is needed. As with the value proposition element, focus must be on fulfillment of needs. In the theoretical section it was stated that the elements of a sustainable business model emphasize how an organization is able to make use of sustainable technologies to eventually capture value (Boons et al., 2013; Girotra & Netessine, 2013). In this way, since the financial model elements treats the distribution of costs and benefits (Maas & Boons, 2010), implementation of ecological policies, technologies and innovation is a manner to implement corporate sustainability into deeper cultural levels.

Limitations and pitfalls of the research in particular are related to the three concepts presented in the theoretical section and in section 2.4. As was mentioned in the methods section, the paper only investigates two of the three



links presented in section 2.4. Given the scope of the paper treated in the methods section, the concept of organizational culture was researched from the viewpoint of corporate sustainability practices related to different sustainable business model elements. Hence, the direct link between sustainable business model elements and organizational culture was not researched. This can be seen in Table 2, where only two of the three original links remain. Researching the direct link between sustainable business models and organizational culture could help to further understand the interconnection of the three presented concepts. However, researching it here is beyond the time limitations and scope of the paper.

In the results section, the concept of a sustainable business model was further defined by subdividing it into three core elements: value propositions, value creation and financial model. Although these three core elements cover the aspects that are vital for sustainable innovation with respect to a sustainable business model (Boons et al., 2013), subdividing a sustainable business model into three elements unavoidably entails some limitations. The three elements that were mentioned could be divided into more sub-elements, and researching these more detailed elements could provide more information about the research topic. However, researching sustainable business model elements in such detail is beyond the scope of this paper. Furthermore the method of gathering articles, by only two electronic search engines, can be called a limitation. Different search methods could provide more literature that could contribute to an answer to the research question.

## **6. Conclusion**

By linking the results section to the introduction, in this section an answer to the research question will be presented and suggestions for further research will be proposed. Following the methods presented in section 3, an answer to the research question will be given regarding the two links presented in Table 2.

With respect to link 1, it can be seen that with regard to all three sustainable business elements different ecological aspects should be incorporated (see Table 2). As was argued in the results section, for an organization combining business practices with an ecological view is necessary and inevitable. Linking this to the results presented in section 4.1, it can be stated that for implementing corporate sustainability into the organizational culture, more attention should be given to the ecological view on different sustainable business model elements. For the value proposition element and financial model element, economic and ecological goals should be combined. For the value creation element, sustainability of the whole system should be guaranteed. Furthermore, with respect to the basic assumptions level, a paradigm shift towards sustainability is needed. Focus should be on needs and social issues rather than on making profits for all three elements.

Regarding link 2 presented in Table 2, for an organization to implement corporate sustainability, it is important to be aware of the existing organizational culture and to possess willingness to reach a fit between this culture and the sustainability activities. More sustainable value propositions can contribute to this. However, the value propositions element does not entail the deeper cultural levels of the organization. Thus, especially the value creation and financial model

element are needed for implementing corporate sustainability. For the paradigm shift that is needed for these elements, a change in core assumptions with respect towards the ecological system is necessary. A system of sustainable products, services and supporting networks and infrastructure should be developed on a value creation level. Furthermore, more ecological policies, technologies and innovation should be implemented on financial model level.

As was stated in the introduction, the presented conceptual model can serve as a guide for future research. Although a narrative literature review proved to be a proper method for this research and for developing the conceptual model, other research methods could contribute to further understanding of the research topic and the treated concepts. More research should be conducted on the presented interconnection between the concepts to measure its validity. To better understand this interconnection, the direct link between sustainable business model elements and organizational culture should be researched. Thus, for further research the following guiding question is proposed, related to the link between the concepts of *sustainable business model* and *organizational culture*: *in what manner can a sustainable business model shape organizational culture so that corporate sustainability can be incorporated?* Regarding this link, more aspects, such as leadership, stakeholder engagement and subcultures will play a role. Further research should deal with this to further elucidate the functioning of these factors with respect to the three presented concepts.

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## 8. English summary

Since the current dominant model of most businesses is not able to effectively address ecological degradation, the call for implementing corporate sustainability in business is getting louder. For an organization, in order to achieve this level of corporate sustainability, it is important to possess willingness to reach a fit between the organizational culture and the sustainability activities. A sustainable business model could foster the development of sustainability concepts by enabling the use of more sustainable technologies. This paper will develop a conceptual model defining the interrelation of the concepts treated in the following research question: *to what extent could sustainable business models contribute to implementation of corporate sustainability in organizational culture?* To properly conduct this, a narrative literature review is conducted. Articles for the research are gathered using the electronic search engines Google Scholar and Scopus.

First, existing approaches towards corporate sustainability and sustainable business models are researched. The comparison of these approaches reveals that an ecological approach towards the concept of sustainable business models is not treated. This result provides an overarching view from which the presented conceptual model can be regarded.

Next, the link between *sustainable business models* and *corporate sustainability* is analysed. It can be seen that with regard to all sustainable business elements different ecological aspects should be incorporated. Economic and ecological goals should be combined while at the same time a paradigm shift towards sustainability is needed.

Finally, the link between *corporate sustainability* and *organizational culture* is researched. A change in core assumptions with respect to the ecological system is necessary for enabling a paradigm shift towards more sustainability. Furthermore, a system of sustainable products, services and supporting networks and infrastructure should be developed on the value creation level of a sustainable business model. More ecological policies, technologies and innovation should be implemented on financial model level.

While the research contributes to an enlarged scientific knowledge on the relationship between sustainable business models and organizational culture, the developed conceptual model serves as a guide for future research. More research should be conducted on the presented interconnection between the concepts to measure its validity.

## 9. Nederlandse samenvatting

Het huidige model dat veel bedrijven aanhouden is niet in staat om de bestaande ecologische degradatie effectief te bestrijden. Meer duurzaamheid met betrekking tot organisaties is daarom gewenst. Echter, om een dergelijke graad van organisatorische duurzaamheid te bereiken is het nodig dat de activiteiten die betrekking hebben op duurzaamheid geïmplementeerd worden in de organisatiecultuur. In dat opzicht kan een duurzaam business model de ontwikkeling van duurzaamheids-concepten bevorderen en zo het gebruik van duurzame technologieën mogelijk maken. Dit paper geeft vorm aan een conceptueel model dat de relaties tussen concepten uit de volgende onderzoeksvraag zal verduidelijken: *in hoeverre kunnen duurzame business modellen bijdragen aan implementatie van organisatorische duurzaamheid in organisatiecultuur?* Hiervoor zal een narratief literatuuronderzoek uitgevoerd worden. Artikelen zullen verzameld worden door middel van twee online zoekmachines, te weten Google Scholar en Scopus.

Ten eerste worden bestaande benaderingen van de concepten organisatorische duurzaamheid en duurzame business modellen onderzocht. De vergelijking van deze benaderingen wijst uit dat een ecologische benadering ten opzichte van duurzame business modellen in de literatuur niet behandeld wordt. Deze bevinding draagt bij aan een overkoepelende interpretatie van het gepresenteerde conceptuele model. Hiervoor wordt ten eerste de link tussen *duurzame business modellen* en *organisatorische duurzaamheid* onderzocht. Hieruit blijkt dat, voor alle elementen van een duurzaam business model, verschillende ecologische concepten geïncorporeerd moeten worden. Economische en ecologische doelen zullen in balans gebracht moeten worden terwijl tegelijkertijd een verschuiving naar een duurzamer paradigma bewerkstelligd moet worden.

Daarnaast wordt de link tussen *organisatorische duurzaamheid* en *organisatiecultuur* onderzocht. Om de genoemde paradigmaverschuiving mogelijk te maken is er een verandering nodig in onderliggende kernwaarden ten opzichte van het bestaande ecologische systeem. Op het *value creation* niveau van een organisatie zal een systeem van duurzame producten, diensten en ondersteunende netwerken en infrastructuur ontwikkeld moeten worden. Ook zullen technologie, innovatie en beleid meer op ecologie gericht moeten zijn om organisatorische duurzaamheid te implementeren in de organisatiecultuur.

Het verrichtte onderzoek zal bijdragen aan een uitbreiding van de bestaande kennis op het gebied van duurzame business modellen en organisatiecultuur. Daarnaast zal het gepresenteerde conceptuele model functioneren als een kapstok voor vervolgonderzoek.