



The governance of sustainable business model innovation—An Ordonomic Approach

Ingo Pies, Felix Carl Schultz^{*}

Chair of Economic Ethics, Martin-Luther-University Halle-Wittenberg, Halle (Saale), Germany

ARTICLE INFO

Keywords:

Sustainable business model innovation
Corporate sustainability
Sustainable value creation
Governance
Ordonomics
Second-order win-win-win potentials

ABSTRACT

This paper develops an ordonomic approach to the governance of sustainable business model innovation (SBMI). We clarify the distinctive roles of optimization and governance for the management of sustainable value networks and develop a sustainability cube as a new management tool for the governance of SBMI. Our cube helps management to identify and overcome social dilemmas within value networks, i.e. to form and reform relevant business relationships, thus creating and tapping second-order win-win-win potentials. Furthermore, our cube encourages management to interpret negative externality problems as “missing markets”, i.e. as an entrepreneurial challenge and as a business opportunity to serve as yet unmet needs. Finally, our cube offers an avenue to develop and strengthen the specific management competencies that foster a successful governance of SBMI.

1. Introduction

After having promoted the sustainability concept of a “triple bottom line” (TBL) for 25 years, Elkington (2018) is rather disillusioned and (self-)critical of what, in effect, has become an accounting concept. Looking back, he clarifies his initial goal—and identifies what went wrong (para. 8, emphasis in original): “[T]he original idea was wider still, encouraging businesses to track and manage *economic* (not just financial), social, and environmental value added—or destroyed. ... [T]he TBL wasn’t designed to be just an accounting tool. It was supposed to provoke deeper thinking about capitalism and its future, but many early adopters understood the concept as a balancing act, adopting a trade-off mentality.” He further elaborates (para. 13, emphasis in original): “TBL’s stated goal from the outset was *system change*—pushing toward the transformation of capitalism. ... It was originally intended as a genetic code, a triple helix of change for tomorrow’s capitalism, with a focus ... on breakthrough change, disruption, asymmetric growth (with unsustainable sectors actively sidelined), and the scaling of next-generation market solutions.” Looking ahead, he states (para. 16 f.): “[W]e need a new wave of TBL innovation and deployment. ... Hence the need for a ‘recall.’ I hope that in another 25 years we can look back and point to this as the moment [we] started working toward a triple helix for value creation, a genetic code for tomorrow’s capitalism, spurring the regeneration of our economies, societies, and biosphere.”

We do not mistake Elkington’s (self-)criticism as a withering

assessment of his TBL concept in particular or of the sustainability movement in general, but as an impressive reminder that although many successes have been achieved—both in theory and practice—, there is no room for complacency, since much remains to be done: We interpret his “recall” as a plea for a profound reconceptualization of sustainability management, specifically pointing to the need for a much sharper focus on (i) systemic change, brought about by (ii) disruptive innovation and (iii) asymmetric growth, driven by (iv) scaling up new business models that promote (v) sustainable development and even breakthrough sustainability transitions. This, however, (vi) requires not to dismiss the “trade-off mentality”, but to put in perspective, so that management gains a clear understanding where it is appropriate and where it needs to be overcome.

It is in this spirit that we make use of the “ordonomic” research program (Pies, 2016, 2022a, 2022b) in order to develop a new approach to the governance of sustainable business model innovation (SBMI). We thereby respond to several authors who have recently emphasized the urgency to investigate the governance dimension of facilitating successful SBMI (see e.g., Evans et al., 2017; Upward and Jones, 2016; Velter, Bitzer, Bocken, & Kemp, 2020). SBMI is an emerging research stream with the aim to promote sustainable development by generating profits while realizing social and environmental desiderata (e.g., Baldassarre, Calabretta, Bocken, & Jaskiewicz, 2017; Schaltegger, Lüdeke-Freund, & Hansen, 2016a,b). Companies that are successful in innovating SBMs are more likely to address corporate sustainability (CS)

^{*} Correspondence to: Martin-Luther-University Halle-Wittenberg, Große Steinstraße 73, 06108 Halle (Saale), Germany.

E-mail address: Felix.Schultz@wiwi.uni-halle.de (F.C. Schultz).

(Pedersen, Gwozdz, & Hvass, 2018) because SBMI represents the mediating concept to realize a viable business case for sustainability (Lüdeke-Freund, 2020). While the SBMI idea has increasingly gained attention by academics, practitioners, and politicians, the concept is still at a nascent stage and requires further investigation (Geissdoerfer et al., 2018). Despite the relevance of this emerging research stream, only a few tools have been developed (e.g., Baldassarre et al., 2017). This is why scholars explicitly call for new management tools and conceptions to enhance the understanding and application of SBMI in academia and practice (Evans et al., 2017; Geissdoerfer et al., 2018; Stubbs, 2019). In particular, the literature is in need of novel ideas to facilitate the adequate management of inter-organizational external relations (e.g., Pieroni, McAloone, & Pigosso, 2019; Velter et al., 2020) since building networks and collaborations beyond the firms' boundaries is essential for successful SBMI activities—but also challenging (Roome and Louche, 2016). Therefore, this article responds to the recent call in SBMI literature “to investigate the governance ... of SBMI” (Velter et al., 2020, p. 11; see also Evans et al., 2017; Upward and Jones, 2016) by applying a more dynamic perspective to the concept for enabling successful transformative SBMI processes (e.g., Shakeel, Mardani, Chofreh, Goni, & Klemes, 2020).

To bridge this research gap, in a first step, we draw on the broader literature on CS to derive two insights: (i) that it is of vital importance for strategic sustainability management not to confound optimization and governance, since governance changes the framework conditions for optimization; and (ii) that the governance of SBMI is a main driver for corporate and in particular entrepreneurial contributions to sustainable progress. In a second step, we develop—not the “triple helix” that Elkington hoped for, but instead—a three-dimensional sustainability cube as a conceptual tool for strategic sustainability management with a special emphasis on the three design elements of SBMI—namely sustainable value proposition, value creation, and value capture (e.g., Baldassarre et al., 2017; Bocken et al., 2014; Shakeel et al., 2020). The cube helps to focus on self-regulating governance: on re-organizing the incentive schemes of corporate external relations in such a way that the members of value creation networks jointly contribute to improved results along the economic, social, and environmental dimensions of sustainability. In a third step, we discuss several implications of our ordonomic approach to the governance of SBMI and clarify our contributions to the relevant literature streams of SBMI and CS.

2. Why SBMI is of vital importance for corporate sustainability

2.1. Corporate sustainability research

Beginning in the 1980 s, the term—and normative desideratum—“sustainability” has risen to become a top priority on the agenda of international politics. Since then, public attention has been addressed to the business sector. Many citizens expect and hope that business firms improve their sustainability performance along economic, social, and environmental dimensions. This has led to the emergence of a broad academic debate about “corporate sustainability” (CS): about the proper role of the business firm in meeting the societal demand for sustainable development and urgently needed “sustainability transitions”, as discussed by e.g., Loorbach, van Bakel, Whiteman, and Rotmans (2010) or Loorbach and Wijsman (2013).

The literature on CS is centered around the following problem: If society demands improved sustainability results, and if such results require CS, i.e. improved sustainability behavior by firms, can society continue to rely on firms that are primarily driven by the profit motive, i. e. the aspiration to maximize their own market value? Or is it instead necessary to provide firms with a sustainability motive, which balances profit with social and ecological aspects, thus changing the internal structure of corporate organizations and their managerial decision-making processes? In short: Do we have to change the DNA of the capitalistic firm in order to promote sustainability?

In addressing this fundamental question, the literature on CS has established a frontline between two major camps of diverse authors. In the following, we draw on the ordonomic contribution by Pies, Schreck, and Homann (2019), who analyze this frontline, compare the two camps, and then propose a conceptual reconciliation that may help both camps to overcome the frontline and find common ground. Extending their work, we have developed Fig. 1 in order to (i) clarify the decisive distinction between optimization and governance and (ii) relate this insight to the literature on SBMI. We proceed by explaining the three arrows in the Fig. 1, which shows marginal profit (MP) on the ordinate and corporate activities with desired sustainability contributions (CASC) on the abscissa. We draw a conceptual distinction between *moving along* versus *shifting* negatively sloped Marginal Profit Lines. The former amounts to optimization, the latter to governance (Fig. 1).

- (1) The first arrow describes how a profit-oriented value-maximizing firm reacts to a status quo like point A. Here, marginal profit is positive. This indicates that a higher level of CASC increases profit. Therefore, firm management will choose a higher activity level. Starting in point A, such firm behavior can be described as moving along the MP_1 curve downwards to the right. This process ends in point B, where the MP_1 curve intersects the abscissa, indicating that marginal profit has become zero. This is the level of CASC where the firm realizes maximum profit.

The first camp in the literature on corporate sustainability is represented by authors such as Jensen (2002), McWilliams and Siegel (2001), or Siegel (2009). This camp holds the view that corporate behavior along arrow 1 can be interpreted as realizing a “win-win-win” potential, where the first “win” stands for the benefit of the firm, the second “win” for the benefit of the firm's partners in value creation, i.e. in particular its customers, its workers, and its suppliers of intermediate products. The third “win” stands for the benefits of third parties that are not contractual partners of the firm but nevertheless indirectly affected by its behavior. The logic is clear: Profit orientation leads the firm to spend resources on CASC such that each Euro spent is compensated by at least one Euro from reduced costs or increased revenue.

- (2) The second camp is more diverse than the first one. It is represented by authors such as Donaldson and Walsh (2015), Gao and Bansal (2013), or Hahn, Pinkse, Preuss, and Figge (2015). While the first camp tends to interpret point B as both an equilibrium and an optimum, the second camp calls into question the underlying assumption of a perfect market order. Making the counter-assumption of a negative externality, the second camp interprets point B as a “win-win-lose” outcome that typically involves business activities with a social or environmental harm to third parties. This means that, from a societal perspective, point B is no longer to be regarded as an optimum. Instead, it is desirable that the firm chooses an even higher level of CASC.

However, given its marginal profit function MP_1 , a profit-oriented firm will be reluctant to move further right than point B, since this would mean to enter the realm of negative marginal profit, reducing its financial success. This is where the second camp identifies a fundamental clash of interest between the societal desideratum of corporate sustainability and the corporate profit motive to increase the market value of the firm. As a solution to this problem, the second camp proposes a likewise fundamental change in the internal structure of corporate decision-making. The underlying idea is to incorporate social and environmental goals besides the profit goal, not to substitute but to complement the firm's interest in financial success with an (equally strong) interest in the dimensions that are relevant to society's sustainability concerns. The core argument is the following: If the firm is no longer a single-objective organization but is transformed into a multiple-objectives organization, it

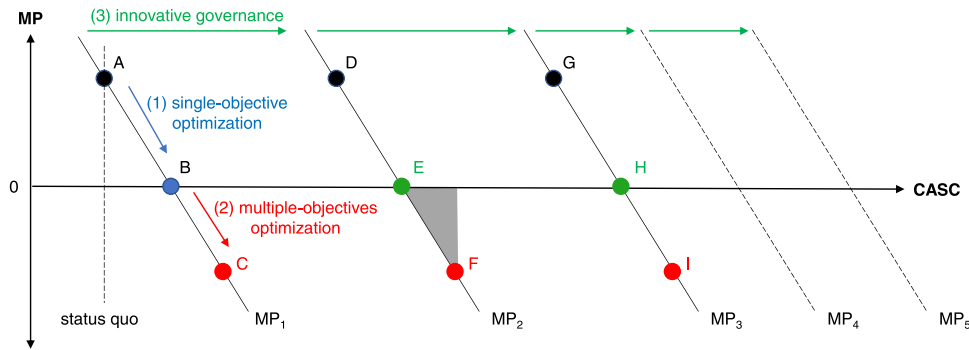


Fig. 1. Optimization versus governance (own illustration).

becomes motivated to move further to the right of point B and in fact choose e.g. point C.

- (3) Pies et al. (2019) sketch a third position that can reconcile the two camps. The authors propose to ask a different question than the one that divides the two camps. Instead of asking which point a firm should choose by *moving along* a given marginal profit curve, they recommend asking what the firm can do to *shift* its marginal profit curve to the right via innovation. Graphically, this is represented by arrow 3, which marks the change in perspective from *optimization* (= moving along the MP_1 curve downwards to the right) to *governance* (= shifting the MP curve to the right from MP_1 to MP_2). While optimization takes the situation and its incentive properties as *given*, governance aims at *changing* the situation such that new behaviors—and new interactive equilibria—become incentive compatible even under strong market competition. Using a terminology coined by Buchanan (1987; p. 248), optimization refers to ‘choices within rules’, while governance refers to “choice among rules”. The former takes the business game as given, while the latter aims at (re-)forming the game.

The two camps have in common that they focus on optimization. They differ whether a firm should follow an unbalanced single-objective goal function and maximize profit by choosing point B, or instead follow a multiple-objective goal function, re-balance its profit motive, and thus increase its corporate sustainability by choosing point C as its new optimum. In contrast, the paradigm shift from optimization to governance, proposed by Pies et al. (2019), draws attention to reaching e.g., point E. It thus combines the strengths of both camps while avoiding their weaknesses. On the one hand, it preserves the market conformity of proponents of single-objective optimization, without being stuck in the unsustainable result of point B. On the other hand, it preserves (and even surpasses) the strong sustainability ambition of proponents of multiple-objectives optimization, without running into systemic resistance that is due to the sacrifice of profit in point C. In contradistinction to mere optimization, *governance* is the means to *shift* the marginal profit curve, which then allows a profit-oriented value-maximizing firm to reach comparatively better sustainability results via improved framework conditions for single-objective optimization.

- (4) Summing up, the literature on CS has discussed the problem how a firm should react to market failure. The traditional economic textbook solution regards market failure as a responsibility of government. The innovative contribution of the literature on CS has been to identify an alternative solution that may complement or even substitute government legislation by voluntary governance activities on behalf of firms, a solution that was previously regarded as undesirable or even impossible by many authors.¹ We can therefore formulate the following proposition:

Proposition 1. The source of improved corporate sustainability via governance can be the state or the firm itself: (i) the state via public ordering, shaping the framework conditions for business activities via laws and regulations, or (ii) the firm via private ordering, shaping the framework conditions via effectively self-regulating its value creation process such that CASC are encouraged. In short: *Self-regulation via private ordering can enhance corporate sustainability.*

Against this background, we would like to emphasize two insights that are of special interest to our further analysis. The paradigm shift from optimization to governance draws attention away from the internal goals of corporate organizations and instead focuses attention on shaping the firm’s external framework conditions for profit-oriented value maximization. Improved sustainability results can be brought about via innovatively self-regulating the firm’s value-creation relationships. Thus, we can formulate the following propositions:

Proposition 2. Society’s sustainability desideratum that negative externalities should be internalized does not require the organizational internalization of sustainability goals. Instead of incorporating multiple objectives, the desired progress can be brought about by directing attention *beyond the organizational boundaries of the firm*. The central challenge for a successful sustainability management is therefore not to change the firm’s internal benchmark criterion for everyday decision-making, but to change the external business context of situational incentives for everyday decision-making. In short: *The ordonomic paradigm shift from optimization to governance reframes the challenge of sustainability management from a problem of the firm’s internal preferences to a problem of its external constraints.*

Proposition 3. The firm is not an isolated entity. It is embedded in

¹ As a case in point, Jensen (2002; p. 246), a member of the first camp in the literature on corporate sustainability, holds the following view: “Resolving externality ... problems is the legitimate domain of the government in its rule-setting function. Those who care about resolving ... externality issues will not succeed if they look to firms to resolve these issues voluntarily. Firms that try to do so either will be eliminated by competitors who choose not to be so civic minded or will survive only by consuming their economic rents in this manner.”

markets and works together with numerous actors—suppliers, workers, customers etc.—in order to create value. Managing these productive relationships, and thus the business model that comprises and structures these relationships, is therefore the proper focus of corporate sustainability. In short: *The governance of sustainable business model innovation is the strategic leverage point for a firm to enhance its corporate sustainability. Thus, SBMI governance is instrumental for CS.*

2.2. Sustainable business model innovation to address corporate sustainability

The concept of sustainable business models (SBMs) has increasingly been discussed in academia within the last 15 years initiated by i.a., [Stubbs and Cocklin \(2008\)](#) followed by special issues on this emerging topic in the *Journal of Cleaner Production* (Vol. 45, 2013), *Organization & Environment* (Vol. 29, 2016; Vol. 33, 2020), *Business & Society* (Vol. 60; 2021) and *Sustainability* (Vol. 8, 2016). Various definitions have emerged in the literature mostly describing the SBM as a sustainability-related modified ‘conventional’ business model ([Geissdoerfer et al., 2018](#)). According to [Schaltegger, Hansen, & Lüdeke-Freund, \(2016b, p. 6\)](#) a SBM “... helps describing, analysing, managing, and communicating (i) a company’s sustainable value proposition to its customers, and all other stakeholders, (ii) how it creates and delivers this value, (iii) and how it captures economic value while maintaining or regenerating natural, social, and economic capital beyond its organizational boundaries.” Relatively recently, in the academic discussion scholars have added an innovation perspective to SBMs, thus developing the concept of sustainable business model innovation (SBMI) (e.g., [Boons and Lüdeke-Freund, 2013](#); [Bocken, Short, Rana, & Evans, 2014](#); [Evans et al., 2017](#); [Geissdoerfer et al., 2018](#); [Roome and Louche, 2016](#); [Yang, Evans, Vladimirova, & Rana, 2017](#)). Since companies with innovative SBMs are more likely to address CS successfully (see e.g., [Lüdeke-Freund, 2020](#); [Pedersen et al., 2018](#); [Schaltegger, Lüdeke-Freund, & Hansen, 2012](#); [Schaltegger, et al., 2012](#); 2016a), scholars increasingly become interested in systematically analyzing the innovation perspective on SBMs.

Various definitions of SBMI have been developed in academia. One of the most often applied definitions of SBMI is proposed by [Bocken et al. \(2014, p. 44\)](#): SBMIs are “[i]nnovations that create significant positive and/or significantly reduced negative impacts for the environment and/or society, through changes in the way the organization and its value-network create, deliver value and capture value (i.e. create economic value) or change their value propositions.” Against this backdrop, the literature distinguishes between incremental forms (i.e., adaption and fine-tuning of business models to enable the change) and radical/-disruptive forms of business model innovations (i.e., radical reinvention for a dynamic transformation) (e.g., [Evans et al., 2017](#); [Shakeel et al., 2020](#)). However, both forms of innovation face—to a greater or lesser extent—challenges regarding the integration of sustainability principles and practices into the business model innovation process. These challenges occur in various dimensions, e.g., institutional, strategic, and operational ([Bocken and Geradts, 2020](#)). In particular, scholars often highlight the engagement in external relationships with the business environment as extremely challenging towards SBMI (e.g., [Boons and Lüdeke-Freund, 2013](#); [Evans et al., 2017](#); [Geissdoerfer et al., 2018](#); [Velter et al., 2020](#)), since it requires extra efforts in managing inter-organizational, inter-industrial, and even inter/cross-sectoral collaborations with external partners to create sustainable value (see e.g., [Pedersen, Lüdeke-Freund, Henriques, & Seitanidi, 2020](#); [Stål, Bengtsson, & Manzhynski, 2022](#)).

This peculiarity naturally imposes tensions and conflicts among

internal and external actors during the entire SBMI process (e.g., [Stubbs, 2019](#); [van Bommel, 2018](#)).² As a case in point, [Stål et al. \(2022\)](#) investigate how institutional logics and power characteristics affect the SBMI process and caution that conflicting interests may delimit cross-sectoral collaboration potentials. In a similar vein, [Velter et al. \(2020\)](#) analyze the complexity for actors’ alignment in SBMI and highlight i.a., diverging interests as enormously challenging. However, the current research regarding an adequate management of external relations is still at a nascent stage in the SBMI literature (e.g., [Evans et al., 2017](#); [Freudenreich, Lüdeke-Freund, & Schaltegger, 2020](#); [Pedersen et al., 2020](#); [Pieroni et al., 2019](#); [Velter et al., 2020](#)). Hence, scholars call for further research to investigate this particular challenge and to develop adequate management tools for aligning actors’ interests ([Geissdoerfer et al., 2018](#); [Shakeel et al., 2020](#)). Against this background, academics have recently proposed to investigate the governance of SBMIs for managing inter-organizational external relations (e.g., [Velter et al., 2020](#)) since SBMIs particularly “require a value network with a new ... governance” ([Evans et al., 2017](#), p. 605). However, beyond the acknowledgement of governance as a viable avenue for SBMI research (e.g., [Evans et al., 2017](#); [Velter et al. 2020](#)), this particular field seems to be under-researched in the existing corpus of literature. In the next section, we explain how the ordonomic approach can contribute to the investigation of management challenges in the governance of SBMI. After that, we move on to conceptualize a novel management tool for addressing those challenges systematically.

2.3. The ordonomic research approach

The ordonomic research approach to governance has already been successful in the fields of corporate sustainability, corporate social responsibility, circular supply chain management, and eco-innovation research (e.g., [Beckmann, Hielscher, & Pies, 2014](#); [Pies, Hielscher, & Beckmann, 2009](#); [Pies, Beckmann, & Hielscher, 2014](#); [Pies, Hielscher, & Everding, 2020](#); [Schultz, Everding, & Pies, 2021](#); [Schultz & Reinhardt, 2022](#)). Therefore, it is a promising candidate for joining the academic discussion on sustainably managing the governance of external relations beyond the organizational boundaries of the firm.

The ordonomic approach applies game theoretical concepts to analyze relevant incentive structures that lead to conflicts between value creation partners. Therefore, it systematically distinguishes between one-sided social dilemmas (asymmetric situations in which one actor can exploit another but not vice versa) and many-sided social dilemmas (symmetric situations in which the actors can exploit each other on a mutual basis). To mitigate underlying conflicts and thus to overcome such social dilemma situations, ordonomics suggests using credible commitments (see [Williamson, 1983](#)) to realize mutual gains. By doing so, [Pies et al. \(2009\)](#) developed a conceptual framework to analyze credible commitments that was further detailed by [Beckmann et al. \(2014\)](#). This framework distinguishes between (i) “dilemma structure”, (ii) types of the “commitment technology”, and (iii) “dimensions of sustainability” spanning a twelve-cell matrix that provides the conceptual basis for the development of our “Sustainability cube” in the following section.

3. The sustainability cube as a management tool for the governance of SBMI

After having brought to fruition the first ordonomic core idea: the shift in perspective from optimization to governance, we now turn to the second ordonomic core idea: that value creation is best conceived as overcoming social dilemmas. We translate this idea into a sustainability

² The literature on tensions in SBMI predominantly relies on the general literature on tensions (e.g., [Hahn et al., 2015](#); [Smith & Lewis, 2011](#); [Van der Byl and Slawinski, 2015](#)).

cube, which we offer as a conceptual tool for strategic sustainability management, especially as a tool for supporting the governance of SBMI, which we interpret as the main driver of corporate and in particular entrepreneurial contributions to sustainable development and even to breakthrough sustainability transitions. This is fully in line with—and lends further support to—the well-established insight that SBMI is required to move from a business case of sustainability to a business case for sustainability (Schaltegger, et al., 2012).

In specifying the three dimensions of our cube, we can draw on the two ordonomic sources: First, we modify the four-cell strategy matrix of commitments and self-commitments for corporate value creation, as developed by Pies et al. (2009; Fig. 5, p. 389). Second, we modify the twelve-cell strategy matrix for sustainability management, as developed by Beckmann et al. (2014; Fig. 3, p. 28). Third, we adopt (and adapt) the well-established distinction between (sustainable) “value proposition”, “value creation”, and “value capture” from the literature streams on business model innovation (BMI) (e.g., Foss and Saebi, 2017) and SBMI (e.g., Baldassarre et al., 2017; Bocken et al., 2014; Shakeel et al., 2020).

We now proceed in four steps. We explain each dimension of the cube and then discuss some examples in order to illustrate its usefulness as a management tool. We begin with the diagonal dimension of the cube before we turn to its vertical and horizontal dimensions.

- (1) Following Pies et al. (2009), a “social dilemma” is a situation characterized by inefficient equilibria, stemming from an unresolved conflict between the self-interest of individual actors (like persons or organizations) and their joint interest as a group. In game-theoretic parlance, the players who find themselves in a situation of strategic interdependence are faced with incentives that lead them to end up with Pareto-inferior strategy combinations. In choosing individually their “best response” strategies, they contribute to a collective self-harm, which they jointly regret. In this sense, a social dilemma is the paradigm case for distinguishing between optimization and governance: The problem of a social dilemma is caused by optimization, but it can only be solved by governance; not by changing the *moves* within the given game, but by changing the *rules* of the game.

The ordonomic research program concentrates on two types of social dilemmas, which are called the “one-sided prisoners’ dilemma” and the “many-sided prisoners’ dilemma,” respectively. The first is typical of hold-up situations of asymmetric exploitation, while the second is typical of the production of public goods where free-riders can symmetrically exploit each other. Both types of social dilemmas have in common that the end result is *inefficient*—and *stable*, because players lack the individual incentive to deviate from the equilibrium outcome. The crucial difference is that in the one-sided prisoners’ dilemma, a single player can change the rules of the game via an *individual* commitment, whereas in the many-sided prisoners’ dilemma a *collective* commitment is needed to overcome the incentive problem. The crucial commonality, however, is that the governance activity of entering credible commitments changes the rules of the game, provides the players with improved incentives, changes their individual behavior and thus their collective strategy combination. This move from the initial (inefficient) equilibrium to a new (Pareto-superior) equilibrium, brought about by governance, is the source of value creation.

Whereas Pies et al. (2009; Fig. 5, p. 389) identify four cases of corporate value creation via governance of business relations, we only need three cases for our sustainability cube, since the primary aim of this

article is to examine disruptive (transformative) business model innovation approaches that can predominantly be realized by external relations management.³

- We skip what Pies et al. (2009) call “individual self-commitment” (ISC), i.e. a binding promise of the firm towards specific stakeholders not to exploit them. A warranty is a case in point. We skip this option of value creation, not because we think it is unimportant—it is not. We just skip it because we want our cube to help management in focusing on options for value creation beyond the organizational boundaries of the firm.
- We adopt what they call “collective self-commitment” (CSC), i.e. a binding agreement that brings all competitors on board. This option for value creation is important because it enables all firms that find themselves on the same (competing) side of a market to pass additional cost on to the opposite market side, which allows them to avoid (marginal) losses if improving their sustainability performance as a branch leads to higher expenses for the individual firm. Voluntary industry standards are a case in point.
- We adopt what they call a “service for individual commitment” (SIC), i.e. a firm providing a binding mechanism to one of its partners in value creation. The SIC is a governance instrument that enables a partner in one’s business relationships to enter an effective ISC. This fosters the integrity of the firm’s BM—and makes it more productive. Helping a supplier with certified quality management is a case in point.
- We adopt what they call a “service for collective commitment” (SCC), i.e. a firm providing a binding mechanism to a sub-group of members in its value creation network that are in fact competing with each other. The SCC is a governance instrument that enables a group of rivals in one’s business relationships to enter an effective CSC. This again fosters the integrity of the firm’s BM—and makes it more productive. Helping a group of suppliers to comply with social or environmental standards is a case in point.

Summing up, we take over the ordonomic governance strategies of CSC, SIC, and SCC and let them form the diagonal dimension of our sustainability cube, as depicted in Fig. 2.

- (2) We now turn to the vertical dimension of our cube. Contrary to Beckmann et al. (2014), who employ the familiar “ESG” criteria to spell out sustainability, we have decided to employ the TBL concept of sustainability (“ESP”), as pioneered by Elkington (1998). The main reason for our decision is that we would like to avoid confusion. In both concepts, “E” and “S” stand for the environmental and social aspects of sustainability. The “G” in ESG stands for governance and denotes the process dimension of guaranteeing corporate integrity. This, however, is a very narrow definition of governance. We prefer a much broader definition, fully in line with Williamson (2010; p. 674, *emphasis in original*), who holds that “governance is the means by which to infuse *order*, thereby to mitigate *conflict* and realize *mutual gain*.” For us, governance is the umbrella term for the institutional management of the whole cube. We therefore substitute the “G” by “P”, which stands for profit. We thus stick with what Elkington (2018) calls the “accounting” version of his TBL concept. We can do so because we cover the broader economic impacts that he wants to be addressed with the other dimensions of our cube.

Following Beckmann et al. (2014), we combine our three

³ Therefore, we need only three out of four cells since external relations management can lead to disruptive/radical innovation while internal management mostly addresses incremental forms of organizational innovation. However, we particularly hint to the latter as a viable avenue for further research.

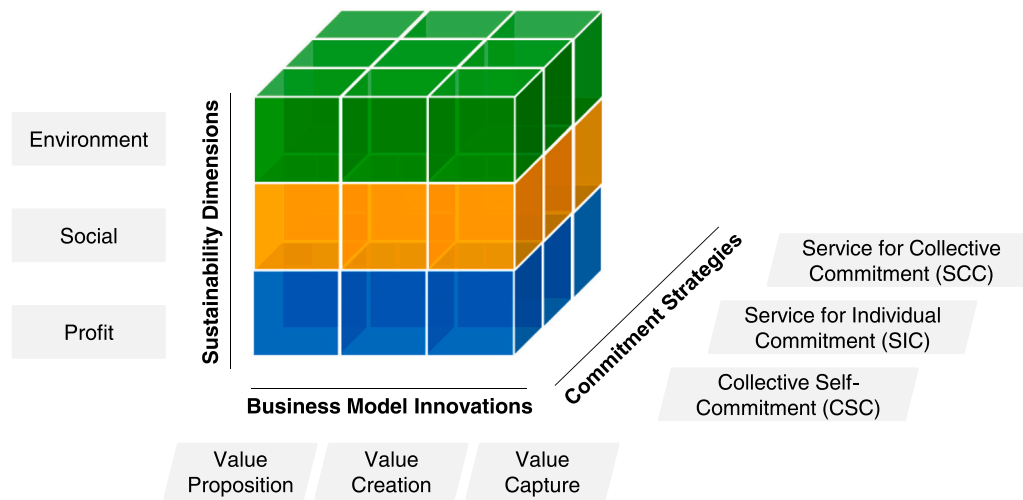


Fig. 2. The ordonomic “sustainability cube” (own illustration).

sustainability criteria with the ordonomic systematization of creating value via overcoming social dilemmas, albeit, as already explained, we only make use of three of the original four commitment strategies. Combining ESP with CSC, SIC, and SCC yields a nine-cell matrix. However, we go beyond the contribution by Beckmann et al. (2014) in adding a third dimension, transforming their two-dimensional matrix into a three-dimensional cube. This third dimension is helpful for drawing the special attention of sustainability governance on different aspects of (S)BMI.

- (3) We agree with Amit and Zott (2012) who recognize the importance of governance for BMI and with Evans et al. (2017), Upward and Jones (2016); and Velter et al. (2020) that such governance relies on the vital management of external relationships within a value network. Furthermore, we agree with Bocken et al. (2014) who emphasize that the governance of SBMs should focus on radical/disruptive innovation. In line with these insights, we derive the horizontal dimension of our cube by drawing on two closely related literature streams: (a) the literature on BMI and (b) the literature on SBMI. Both streams are centered around the change or novel proposition of three elements, namely (sustainable) “value proposition”, “value creation”, and “value capture” (see e.g., Foss and Saebi, 2017; Shakeel et al., 2020). Complementarily, the BMI literature suggests different process stages for the innovation process of “ideation”, “integration”, and “implementation” (e.g., Frankenberger, Weiblen, Csik, & Gassmann, 2013). We propose to merge these concepts in the following way, which interprets the three static elements with a more dynamic perspective that has recently been demanded by SBMI scholars (e.g., Geissdoerfer et al., 2018; Shakeel et al., 2020):

- “Ideate—Value Proposition” can be understood as the intellectual process of generating a novel idea for a potential new BM or of reforming an already existing one. In this context, social dilemmas arise primarily from the public good characteristics of new knowledge and the according temptation to take a free ride.
- “Integrate—Value Creation” describes the process of transforming and integrating the idea of a (new) value proposition into a viable architecture for the BM. This requires numerous negotiations with potential partners, finally coming to an agreement on specific individual contributions to the joint project of producing goods or services. Here, social dilemmas arise primarily from a lack of trust.
- “Implement—Value Capture” characterizes the process of keeping the partners in line. In a dynamic environment, the value network of

the BM suffers from changes in the attractiveness of individual contributions. This requires numerous re-negotiations. They have to make sure that the core partners needed for the BM to stay viable—experience this viability as their individual advantage—or to adapt the BM if such re-negotiations do not succeed. Here, social dilemmas arise both from a lack of trust and from the temptation to free-ride. (Additional hint: Since the sustainability element “P” already stands for the firm’s own profit, we use “value capture” as a reminder to be constantly aware of positive net advantages for all members of the value network.

- (4) In the following, we discuss several real-life examples in order to illustrate the usefulness of our sustainability cube for the strategic management of corporate sustainability, especially for the governance of SBMI. We sketch five cases: (a) Grameen, (b) Nespresso, (c) Borealis, (d) Grundfos, and (e) PDR. Table 1 provides an overview. It assigns the core elements of the sustainability cube that are primarily addressed in each of the five cases.

- (a) Our first example refers to the Grameen Bank (e.g. Lüdeke-Freund, Carroux, Joyce, Massa, & Breuer, 2018; Yunus, Moingeon, & Lehmann-Ortega, 2010), i.e. the innovation of a social BM that provides credit to poor people in rural Bangladesh. Without being able to provide collateral, many people, especially women, experienced credit rationing because they could not find a private bank that was willing to accept them as clients. Seen from an ordonomic point of view, they faced two one-sided prisoners’ dilemmas: (i) Ex ante, before entering a credit contract, potential borrowers had difficulty in signaling their creditworthiness, since they, being poor, had nothing to deposit as security. (ii) Ex post, after having received a credit, potential borrowers had difficulty in assuring the bank that they were

Table 1

Five illustrative examples and their cubic governance profiles.

Example	Sustainability dimensions	BMI aspects	Commitment types
Grameen	S, P	Value Proposition, Value Creation, Value Capture	SIC
Nespresso	E, S, P	Value Proposition	SIC
Borealis	E, P	Value Creation, Value Capture	SIC, SCC
Grundfos	E, S, P	Value Creation	SIC
PDR	E, P	Value Creation, Value Capture	CSC

willing to pay back their loan. As a result, banks did not trust their potential clients and thus refused to serve them.

Muhammad Yunus, who founded the Grameen Bank in 1976, came up with an important idea that solved both dilemmas simultaneously, and even costlessly, by providing a powerful *service for individual commitments (SIC)*: Instead of relying on the legal system, he created a BM that could do without collateral or formal contracts. The key to success was to recruit a village team of usually five to eight female members, who selected themselves and mutually provided themselves with informal incentives that made their promise of paying back their loans credible (Münkner, 2007). (i) Via self-selection, the Grameen Bank used the village as an information pool for assessing the individual creditworthiness of potential clients. (ii) And by arranging the female team members as a credit ring—making sure that the fifth member gets her credit only after the previous four members have paid back—the Grameen Bank made sure that for each borrower there were at least one or two village residents urgently waiting for their credit and thus willing to exert social pressure on any team member in delay.

Against this background, we agree with Yunus et al. (2010; p. 312) who state in retrospect that “the questioning of the current rules of the game was at the very heart of the Grameen Bank’s foundation”. Drawing on our sustainability cube to reconstruct this specific BM, we can even go further and explain its successful practice not just by a clever *value proposition* during the ideational phase, starting in 1976, but by a formidable interplay of value creation and value capture that since then has continually proved to be highly functional. Here, it may suffice to hint at a few numbers taken from Chowdhury and Somani (2020). First, the credit ring arrangement makes sure that the participants’ self-interest in *value capture* exerts a strong social pressure within the village community such that borrowers honestly want to pay back their loans, which really is a necessary condition for *value creation*. The result: Between 2006 and 2018, the relation between overdue loans and total loans was always below 2 %, in many years even below 1 % (p. 65, table 14). Second, it was a strategic decision of utmost importance to concentrate lending activities on female empowerment. The result: Between 2006 and 2018, in each single year the quota of loans handed out to female clients in rural Bangladesh fell in the range between 94,5 % and 97,3 % (p. 67, table 18). Third, the Grameen Bank is owned by its clients. In 2018, the organization had more than 9 million members, 96,7 % of which were female (p. 59, table 2). The combination of female membership and female clients establishes a feedback loop that—until today—has enabled the Grameen Bank to develop a vivid BM that again and again has adapted to changes in opportunities and needs, fostering sustainable development in rural Bangladesh.⁴

- (b) Our second example refers to “Nespresso”, a coffee company that belongs to the Swiss Nestlé Group, and has a successful history of innovation (Brem, Maier, & Wimschneider, 2016). The core idea of its BMI was to individualize coffee enjoyment. Instead of brewing filter coffee at home—and naturally limiting oneself to a

single type of coffee—Nespresso offers its customers the opportunity to prepare individual cups of coffee from a broad range of different flavors. The individual portions of cups are packed in aluminum capsules. They are inserted into a special machine that ensures optimum water temperature and pressure. In this way, a coffee enjoyment of a special quality is created. The marketing of this product is aimed at coffee connoisseurs with a high willingness to pay: following the French name of special wine deposits, Nespresso emphasizes its own quality standards by referring to its in-house coffees as “Grands Crus”.

In order to get the BM up and running, several innovative ideas had to be successfully implemented: (i) the new packaging and portioning of coffee in aluminum capsules, (ii) the development of special coffee machines, (iii) the customer approach via a club model that combines high levels of customer loyalty and customer service, (iv) a marketing campaign aimed at the high-price segment (engaging Hollywood star George Clooney). But that alone was not enough. The special coffee preparation only works with a special coffee quality. Therefore, (v) an innovative supply chain management had to be developed. This was launched in 2003 in partnership with the civil society organization “Rainforest Alliance”, and has since been developed thematically and expanded to include additional institutional partnerships. It is called “Nespresso AAA Sustainable Quality™ Program”.

For Nespresso’s BM, it is essential to depart from the mass market by establishing long-term partnerships with carefully chosen coffee plantations, so that coffee beans and coffee roasting can meet Nespresso’s already high and prospectively increasing quality requirements. These long-term partnerships are needed to provide coffee farmers with know-how, and to secure the expectation that the additional costs associated with higher raw material quality will also reliably pay off. To this end, (i) premiums are paid, (ii) training is carried out and, as a pioneering initiative for some coffee farmers, (iii) a pension fund is set up.

We agree with the overall assessment by Brem et al. (2016; p. 133) that “Nespresso achieved competitive advantage through innovation by changing the rules of the game in its industry”. However, we would go further in specifying the relevant governance activities. From an ordonomic perspective, Nespresso’s value proposition envisioned right from the start to broadly encompass all three dimensions of sustainability, aiming to increase corporate profit via fostering environmental and social progress for coffee plantations in developing countries. The strategic key decision was to address the plantations’ one-sided prisoners’ dilemmas with a powerful *service for individual commitments (SIC)*, such that it has become both viable and credible for them to comply with higher environmental and social standards, which in turn allows Nespresso to create additional value for coffee “gourmets”.

- (c) Our third example refers to Borealis, an Austrian chemicals company, one of the major global players in manufacturing polyolefin products. In 2016, the company decided to transform its linear BM into a circular one, drawing on recycled plastics as raw material for its polyolefin production (Borealisgroup, 2019). During the transformation phase, Borealis in effect ran two BMs simultaneously. This caused some confusion, especially among the company’s clients—and further down its value chain, among its clients’ clients. They were afraid of value destruction potentials deriving from poor product quality and reduced processability of recycled materials (EuPC, 2019; Pfaendner, 2015). Furthermore, customers shied away from the required costly investments in R&D and new machinery, and they feared additional costs due to high set-up times for using recyclates. This became a major challenge for the integration and implementation of Borealis’ new business model. Its value creation was at stake,

⁴ We would like to hint at the ordonomic analysis of hybrid organizations by Pies et al. (2020; p.174), who elaborate with regard to for-profit and not-for-profit organizations that (i) “there is no deterministic link between organizational missions and sustainability outcomes”, that (ii) “all business models set different default goal priorities, but face the same governance challenge of achieving sustainability”, and that (iii) “all business models can use the same governance strategies of creating value—rule reforms that implement credible commitments to overcome social dilemmas”. In fact, we think it is a strength of our cube that it can foster sustainability governance across the whole range of hybrid organizational formats.

because important (direct and indirect) business partners were concerned about value capture, about the possibility to continue their traditionally successful business relations with Borealis.

From an ordonomic perspective, the problem can be reconstructed as two inter-related social dilemmas. The direct clients of Borealis faced a many-sided prisoners' dilemma among each other, while towards their own clients they faced a one-sided dilemma. In the second dilemma, lack of trust made it hard for Borealis' direct clients to sell their products, which in turn caused the first dilemma, where the danger of competitive disadvantage inclined them to reject recycled polyolefin products.

Against this background, it is interesting to observe that Borealis came up with an initiative that addressed both social dilemmas simultaneously. Borealis launched "EverMinds™", a communication platform to bring the entire value chain together and to promote and accelerate collaborative innovation of technologies as well as a product portfolio with circularity as its core (Borealisgroup, 2018). This is an attempt to inform, convince and engage both direct and indirect clients to share Borealis' sustainability vision of whole sectors contributing to a circular economy. The platform can be seen as a *service for individual commitments (SIC)* with regard to the second dilemma, and at the same time as a *service for a collective commitment (SCC)* with regard to the first dilemma. In effect, via the platform Borealis lends its own reputation capital to its direct business partners and thus enables them to solve the first (horizontal) and the second (vertical) dilemma, thus actively integrating direct and indirect value network partners in the innovation process by reducing ex-ante reservations regarding circular products and processes, pointing to synergies for all participants in the value network.

- (d) Our fourth example refers to Grundfos, a Danish company that is the world leader in pump manufacturing. Strongly committed to promoting energy efficiency and water conservation, the company has come up with a BMI called "Grundfos LIFELINK", a label for sustainable water systems specifically designed to deliver safe, fresh, potable water in both urban and rural areas in developing countries (Grundfos, 2009). The system consists of water pumps driven by solar energy as well as a service platform with a mobile-based prepayment system and remote surveillance (Andersen & Esbjerg, 2020). Starting with a project in Kenya in 2009, "Grundfos LIFELINK" has been expanded to numerous countries in Africa and Asia.

From an ordonomic perspective, the "Grundfos LIFELINK" BM addresses several social dilemmas at once. First, people in local communities face a free-rider problem. They find themselves in a many-sided prisoners' dilemma since a water system requires collective action. Furthermore, especially residents of poor local communities face one-sided prisoners' dilemmas toward their banks, for reasons already discussed in our first example concerning the Grameen Bank. This is why "Grundfos LIFELINK" came up with the idea to combine innovative technologies with innovative governance mechanisms: a micro-finance arrangement, based on mobile phones, helps individuals to get credit and thereby to contribute to the financial investment of their community, thus covering both the fixed and variable costs of buying the equipment and getting reliable access to clean drinking water. In short, the "Grundfos LIFELINK" BM rests on the insight that in order to sell high-quality water systems with solar-driven pumps in developing countries, the value network had to encompass business partners from micro-finance and telecommunications in order to achieve a sustainability transition that serves residents in poor local communities, who benefit both environmentally and socially.

- (e) Our fifth example refers to PDR. The German acronym stands for "Produkte durch recycling" (products via recycling) and is the name of a company that was launched in 1993 by a collaborative

effort of European polyurethane (PUR) foam can producers and retailers (PDR, 2020).

In switching from a linear to a circular BM, they faced similar problems to the ones discussed in our third example of Borealis. However, the interesting difference is that here the central problem was not a vertical one along different stages of the value chain, but instead a horizontal one between competitors. Seen from an ordonomic perspective, they faced a many-sided prisoners' dilemma: Even though as a group they could profit from dismissing their old linear BM, based on throw-away articles, and adopting a circular BM, based on recycling, this proved to be disadvantageous for each single actor on an individual level. In order to overcome this social dilemma, the European PUR foam can producers collectively united at the industry level and established a *collective self-commitment (CSC)* by creating the independent firm PDR to create and capture the value from their joint recycling initiative. In contrast to forming a cartel as a win-lose initiative, aiming to gain at the expense of vertical business partners, this form of legal "co-opetition" (Brandenburger & Nalebuff, 1996) is a win-win-win activity, aiming at a level playing field that allows business competition to comply with a much higher environmental standard (Kupfer, Grönman, & Liedke, 2015), thus combining synergies for the participating producers and improving the sustainability performance of the entire industry.

- (5) Summing up, Fig. 3 provides an overview of our five examples. It also visualizes three aspects we would like to emphasize.

- None of the five examples of SBMI addresses all 27 elements of the sustainability cube.
- However, each of them addresses more than just one element.
- In fact, each example has its own cubic *governance profile* since it is tailored to the specific challenges and opportunities within the relevant value network.

4. Contributions to diverse literature streams on sustainability management

4.1. The governance of sustainable business model innovation

We bridge the current research gap on new management tools and conceptual ideas for SBMI (e.g., Evans et al., 2017; Geissdoerfer et al., 2018) with the aim to support the adequate management of relations beyond organizational boundaries as mentioned by e.g., Pieroni et al. (2019); Shakeel et al. (2020); and Velter et al. (2020). Therefore, we introduce the "sustainability cube" to support managers in their quest to organize transformative SBMI processes. This article responds to the management of stakeholder demands that affect the sustainable value proposition, value creation, and value capture dimensions with the aim to realize mutual gains for enhanced value network activities. Drawing on our sustainability cube, which embodies the ordonomic core ideas to distinguish between *optimization* and *governance* and then to concentrate governance activities on overcoming social dilemmas in creating and developing innovative value networks, we would like to highlight our specific contributions to the SBMI literature.

First of all, we would like to communicate our observation that the general frontline in the academic discussion on CS, as analyzed by Pies et al. (2019), duplicates in the literature stream on SBMI, albeit under different labels. As a case in point, Upward and Jones (2016) distinguish between a continuum of business models that are "profit-normative" or "strongly sustainable". They propose that the latter should replace the conventional definition of profits by a new inclusive 'tri-profit' concept. While their work is based on the current understanding of TBL and thus is fueling the concerns by Elkington (2018), our approach suggests to conceptually distinguish between optimization (profit-making logic) and governance (innovative creation of external conditions for profit-making). Thus, this article emphasizes the necessity to innovate

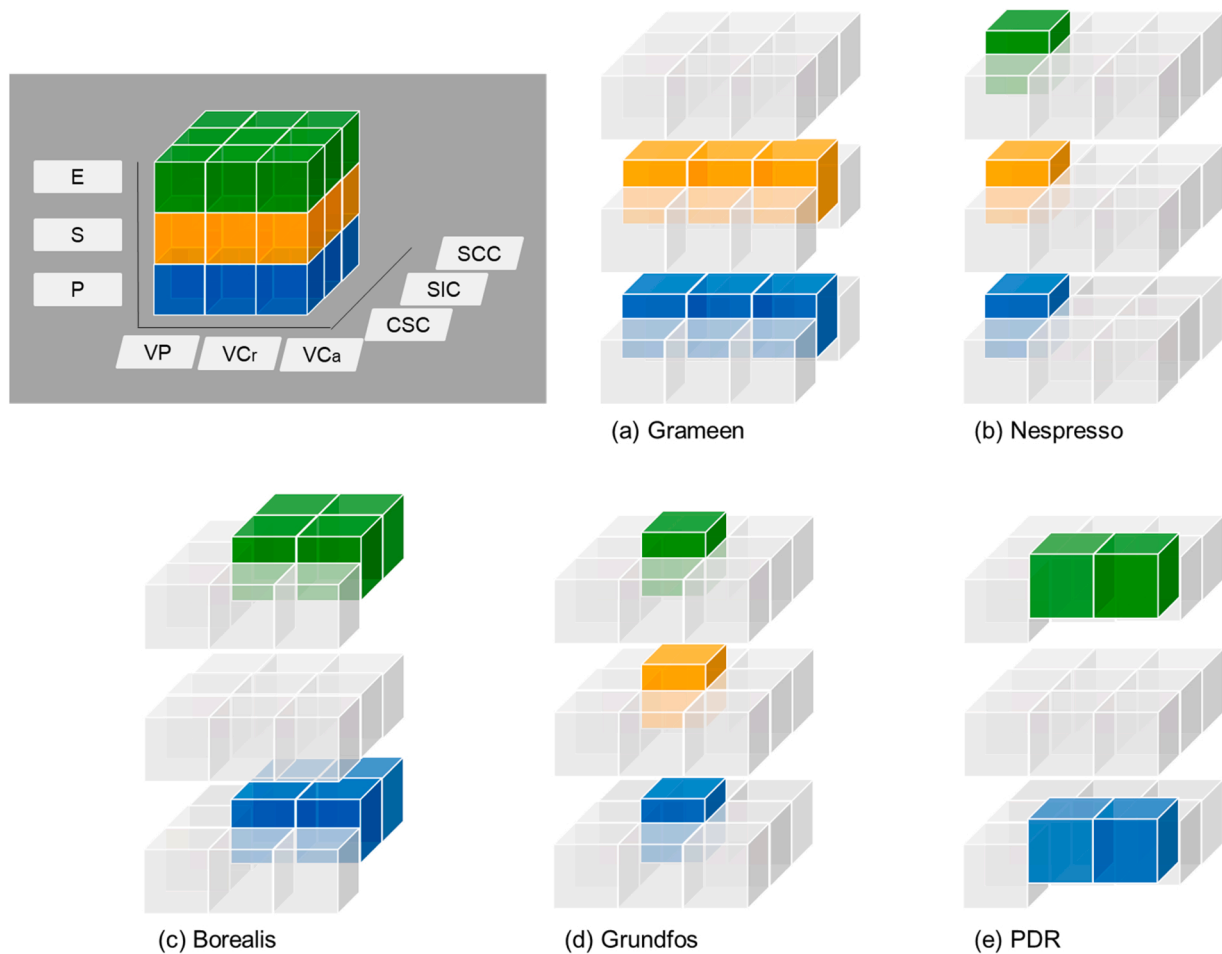


Fig. 3. Governance profiles within the sustainability cube: five examples (own illustration).

creative solutions to take the profit-motive *into service* for realizing sustainability desiderata. Hence, the ordonomic approach contributes to the current debate by providing a complementary perspective emphasizing the innovation of inter-organizational governance structures for the entire value network to realize sustainability desiderata while keeping the profit-logic alive. Adding to and expanding on the work by e.g., Stål et al. (2022) and Velter et al. (2020) regarding inter-organizational and cross-sectoral management, the ordonomic governance lens provides an opportunity to mitigate conflicting interests of actors and to realize mutual gains. Specifically, our “sustainability cube” shows that successful ‘real-world’ SBMI processes consist of unique governance-profiles that are tailored to the specific challenges and opportunities within the value networks. Therefore, our cube is intended to encourage scholars and practitioners to develop creative governance solutions to realize and align inter-organizational collaboration potentials and thus using governance as a *means* for implementing commitments to realize mutual sustainable value creation activities.

As another case in point, following van Bommel (2018), we distinguish between “instrumental” and “integrative” strategies, which differ in their response to sustainability “tensions”, just like “single-objective” and “multiple-objective” approaches differ in their response to sustainability “tradeoffs”. Van Bommel (2018; p. 829) states that the first (instrumentalist) camp is characterized by “viewing sustainability as an “either/or” scenario”, whereas he sees the second (integrative) camp “utilizing more paradoxical ... strategies, thus aiming for a “both/and” scenario”. He himself holds the view that “in order to manage SBM innovations successfully, firms need to be able to confront rather than dismiss the paradoxical tensions of sustainability” (p. 830). He therefore calls firms “to embrace and engage competing demands simultaneously”

(p. 830). From an ordonomic perspective, we can contribute to conceptual clarification. Referring to Fig. 1, we label the movement from point A to point B a “first-order win-win-win” activity. Furthermore, we label the movement from point B to point C a “first-order lose-win-win” activity, while we label the movement from point B to point E a “second-order win-win-win” activity. Making use of this new terminology, we hold that van Bommel’s characterizations of the SBMI literature—as well as the more general contributions to the CS literature he is referring to (represented by e.g., Hahn et al., 2015; Van der Byl & Slawinski, 2015)—could benefit from a clearer distinction between optimization and governance. We hold that the prevalent criticism of instrumental win-win concepts—which is, in accord with ordonomic expectations, more (or less, respectively) pronounced in the literature on SBMI—refers to *first-order* effects of optimization, but definitely not to *second-order* effects of governance. Against this background, our cube helps to focus attention on the relevant challenges for SBMI. Seen from the ordonomic point of view, the relevant challenge is not to overcome tensions by embracing sustainability goals—thus ending up with re-balancing optimization and the according “first-order lose-win-win” activities. Rather, the relevant challenge is to overcome tensions by switching from optimization to governance, thus setting free the potential for “second-order win-win-win” activities, which then can be captured by profit-oriented value maximization. In fact, as a management strategy, this is much more tractable and performance-capable than the “purposeful iterations” of instrumental and integrative approaches called for by van Bommel (2018; p. 839). Furthermore, since “[t]ensions emerge between maintaining acceptable levels of profit while simultaneously adding value to the social and environmental dimensions” (Van Bommel, 2018; p. 834), this article contributes to this current debate by

emphasizing the conceptual difference between profits (*means*) that have a systemic role to play for achieving sustainability (*ends*). Instead of further promoting the ‘balancing paradigm’ between profit-seeking and sustainability desiderata that finally argues for sacrificing (a part of) profits for the sake of social and environmental benefits, we bring forward the idea that vital SBMI requires a profit-seeking logic as an *instrument* to achieve *sustainability goals* for realizing a viable business case for sustainability. Specifically, it is needed for scaling up sustainable businesses, (i) by financing required investments, and (ii) by incentivizing newcomers to imitate successful pioneers. In fact, while firms are not genuinely interested in increased competition intensity, the promotion of competition is desired to promote the societies’ welfare by (a) establishing strong innovation dynamics, (b) initiating the diffusion of rents from innovation to society, and (c) amplifying cost efficiency.

4.2. Sustainable business model innovation for addressing corporate sustainability

Since SBMs can be understood as mediating devices to enable CS and thus a business case for sustainability (e.g., Lüdeke-Freund, 2020; Schaltegger et al., 2012; 2016a), we like to further elaborate on the conceptual clarification by referring to the CS literature on sustainable business cases. Specifically, we make use of Fig. 1 to assess the core idea of Schaltegger and Burrit (2018), thus identifying a concrete (mild) version of the “trade-off mentality” criticized by Elkington (2018): Schaltegger and Burrit (2018) distinguish between (i) a “responsible” business case for sustainability, and (ii) a “collaborative” business case for sustainability. Furthermore, they hold that the responsible version aims at point E, while the collaborate version aims at point F, which lies on the MP₂ line to the bottom right of point E, or better still aims at point I on MP₃. They explicitly state (Schaltegger and Burrit, 2018, p. 252): “This perspective goes beyond the dominant view that a business case is merely about maximising financial performance.”

According to the ordonomic conceptualization embodied in the cube, however, the collaborative version should aim at a stream of governance innovations, thus bringing about further shifts of the marginal profit function to the right, from MP₂ to MP₃, and then from MP₃ to MP₄, thus moving from point B to E and then H (and so on). The difference is crucial. It concerns the preferred route to sustainability: Whereas Schaltegger and Burrit (2018) call for a motivationally induced re-balancing of optimization, the ordonomic approach (re-)directs management attention towards a governance-induced situational re-form in order to accelerate SBMI. While Schaltegger and Burrit (2018) want to keep the firm financially viable, on the ground that profit in (their preferred) points F or I is on the same level as in points D or G, they in fact promote to spend financial resources (represented by the grey area in Fig. 1) for *immediate* social or environmental benefits instead of promoting investments in *future* sustainability benefits. In comparison, with regard to dynamic, long-run consequences, our cube supports a stronger emphasis on *innovation* and *systemic change*.

Concludingly, we briefly sketch our contribution to three points of importance in the literature streams on SBMI and CS:

- (a) The epistemological as well as practical interests in corporate and in particular entrepreneurial contributions to sustainable progress and even to breakthrough sustainability transitions via SBM (I) could be boosted by regarding negative externalities, causing environmental or social harm to third parties, not through the lens of “market failures” but through the lens of “missing markets”. At least since the eminent contribution by Coase (1960) it is well known that negative externalities are in fact a political failure, caused by a deficiency in property rights. They indicate unmet needs, and thus invite firms to innovate SBMs accordingly. Seen from the ordonomic perspective, the government failure is both a *governance challenge*—and a *governance opportunity* to promote sustainability via creating incentive schemes that work

around deficient conditions in the institutional framework of markets. Adding to and expanding on the remarkable work by e.g., Breuer and Lüdeke-Freund (2017) and Velter et al. (2020) who highlight the *internalization of negative externalities* through SBMI, we argue for a change in perspective by perceiving the SBMI less as an internalization instrument but more as the ‘creation machine’ of *positive externalities* that calls for an even stronger pro-active, entrepreneurial approach to innovation as a source for value creation and even value capture.

- (b) In a seminal contribution to the applied literature on business ethics, Boatright (1999) proposed to substitute the prevalent “moral manager model” by a “moral market model”. In likewise fashion, our sustainability cube helps to re-focus current perspectives in parts of the SBMI literature from a “sustainable corporation vision” towards a “sustainable value network mission”, drawing attention away from strengthening sustainability *ambitions* and instead directing attention to strengthening sustainability *competencies* of corporations and their managers. The key to success is not goal *aspirations*, but entrepreneurial *inspirations*—and governance *capabilities*. Put differently, the theoretical foundation of the cube is of practical importance: It contains all possible combinations of generating value by overcoming social dilemmas beyond the organizational boundaries of the firm, and at the same time it serves as a check list to think through the complexities of managing value networks with a clear focus on the governance of SBMI.
- (c) While some scholars “suggest these new business models - where stakeholders replace shareholders as the focus of value maximization - could empower capitalism to address overwhelming global concerns.” (Yunus et al., 2010, p. 308), the ordonomic approach contributes by showing that such antagonistic trade-off thinking is unlikely to empower sustainable forms of capitalism. This article clearly emphasizes the complementarity of shareholder interests and stakeholder interests. Promoting stakeholder interests can thus be conceptualized as an ‘operationalization’ of promoting shareholder interest. Hence, the proposed conceptual distinction in this article helps to change the perspective on the managements’ task to simultaneously acknowledge both groups’ interests for the sake of sustainable development.⁵

5. Conclusion and outlook

This paper develops an ordonomic approach to the governance of SBMI. We clarify the distinctive roles of optimization and governance for the management of sustainable value networks and develop a sustainability cube as a new management tool for the governance of SBMI. Our cube helps management to identify and overcome social dilemmas within value networks, i.e. to form and reform relevant business relationships, thus creating and tapping second-order win-win-win potentials. Furthermore, our cube encourages management to interpret negative externality problems as “missing markets”, i.e. as an entrepreneurial challenge and as a business opportunity to serve as yet unmet needs. Finally, our cube helps management to develop and strengthen the specific competencies that foster a successful governance of SBMI.

As an outlook, we would like to emphasize several limitations of our contribution in this paper, which may stimulate further research.

First, we deliberately skipped an important aspect. Since we wanted to concentrate on sustainability opportunities beyond the organizational boundaries of the firm, we edited out the ordonomic strategy of individual self-commitments. We therefore concentrate on perceiving the organization and its interior structures as a monolithic block. On the one hand, this assumption needs to be highlighted as a serious limitation of

⁵ Please see Pies et al. (2019) for further discussion on this crucial topic in the CS literature.

our tool, but on the other hand it provides a vital starting point for complementary further research on intra-organizational challenges such as culture, mind-set, etc. (see e.g., Evans et al., 2017; Geissdoerfer et al., 2018) and tensions' management in SBMI (see e.g., Schultz, 2022a). Hence, managers using the cube must be constantly aware of this blind spot. Further research could explore the possible interplay between the three commitment strategies (external relations management) embodied in the cube and the one we left out (internal relations management). For the latter, we would like to hint to an initial ordonomic contribution along those lines cf. Will and Pies (2018).

Second, each of the 27 cells embodied in the cube invites further research. Although we have covered many cells with illustrative examples, in-depth case studies could deepen our understanding of the diverse interdependencies between different cells—and improve the management competence to combine different cells in a unique *governance profile* that adapts the SBM to the relevant sustainability challenges at hand.

Third, and finally, we would like to emphasize that our cube invites another paradigm shift, stimulating further research. In the diverse literature streams relevant for sustainability innovations, it is (still) common to draw a sharp distinction between technological developments and organizational developments. From the governance perspective embodied in our cube, however, it is possible to endogenize technology development since it finally depends on incentives (see e.g., Schultz & Reinhardt, 2022; Schultz, 2022b). In this way, the specific literature streams on SBM(I) as well as the more general literature on CS could benefit from a more dynamic, more Schumpeterian perspective, taking to heart his famous idea that historically it is not the case that technology invention led to the emergence of capitalism, but that capitalism led to the emergence of technology invention (Schumpeter, 2006; p. 479). In this sense, our cube may help to inspire entrepreneurial efforts for both organizational and technological contributions towards sustainable development.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

CRediT authorship contribution statement

Prof. Dr. Ingo Pies: Conceptualization, Investigation, Validation, Visualization, Writing – Original Draft, Writing – Review & Editing, Supervision; Felix Carl Schultz: Conceptualization, Investigation, Validation, Visualization, Writing – Original Draft, Writing – Review & Editing.

Conflict of Interest

The authors declare that there is no conflict of interest that could be perceived as prejudicing the impartiality of the research reported.

References

- Amit, R., & Zott, C. (2012). Creating value through business model innovation. *Mitoss Sloan Management Review*, 53(3), 41–49.
- Andersen, P. H., & Esbjerg, L. (2020). Weaving a strategy for a base-of-the-pyramid market: The case of Grundfos LIFELINK. *Business Strategy and the Environment*, 29(8), 3687–3701.
- Baldassarre, B., Calabretta, G., Bocken, N. M. P., & Jaskiewicz, T. (2017). Bridging sustainable business model innovation and user-driven innovation: A process for sustainable value proposition design. *Journal of Cleaner Production*, 147, 175–186.
- Beckmann, M., Hielscher, S., & Pies, I. (2014). Commitment strategies for sustainability: How business firms can transform trade-offs into win-win outcomes. *Business Strategy and the Environment*, 23(1), 18–37.
- Boatright, J. R. (1999). Does business ethics rest on a mistake? *Business Ethics Quarterly*, 9(4), 583–591.
- Bocken, N. M. P., & Geradts, T. H. J. (2020). Barriers and drivers to sustainable business model innovation: organization design and dynamic capabilities. *Longest Range Planning*, 53(4), Article 101950.
- Bocken, N. M. P., Short, S. W., Rana, P., & Evans, S. (2014). A literature and practice review to develop sustainable business model archetypes. *Journal of Cleaner Production*, 65, 42–56.
- Boons, F., & Lüdeke-Freund, F. (2013). Business models for sustainable innovation: state-of-the-art and steps towards a research agenda. *Journal of Cleaner Production*, 45, 9–19.
- Borealisgroup. (2018). Thinking circular, Borealis launches EverMinds™: a new communication platform dedicated to circular economy solutions, 05/12/2018. Retrieved from: <https://www.borealisgroup.com/news/thinking-circular-borealis-launches-everminds-a-new-communication-platform-dedicated-to-circular-economy-solutions>, (Accessed 07 June 2022).
- Borealisgroup. (2019). Circular Economy. Retrieved from: <https://www.borealisgroup.com/company/sustainability/actions/circular-economy>, (Accessed 07 June 2022).
- Brandenburger, A. M., & Nalebuff, B. J. (1996). *Co-opetition: A revolutionary mindset that combines competition and cooperation in the marketplace*. Boston, MA: Harvard Business School Press.
- Brem, A., Maier, M., & Wimschneider, C. (2016). Competitive advantage through innovation: the case of Nespresso. *European Journal of Innovation Management*, 19(1), 133–148.
- Breuer, H., & Lüdeke-Freund, F. (2017). Values-based network and business model innovation. *International Journal of Innovation Management*, 21(3), 1–35, 1750028.
- Buchanan, J. M. (1987). The constitution of economic policy. *American Economic Review*, 77(3), 243–250.
- Chowdhury, T. A., & Somani, S. (2020). Performance evaluation and impact of Grameen Bank on social development and women empowerment in Bangladesh. *International Journal of Social and Administrative Sciences*, 5(1), 54–73.
- Coase, R. H. (1960). The problem of social cost. In C. Gopalakrishnan (Ed.), *Classic Papers in Natural Resource Economics*. London: Palgrave Macmillan. https://doi.org/10.1057/9780230523210_6.
- Donaldson, T., & Walsh, J. P. (2015). Toward a theory of business. *Research in Organizational Behavior*, 35, 181–207. <https://doi.org/10.1016/j.riob.2015.10.002>.
- Elkington, J. (1998). *Cannibals with forks: the triple bottom line of 21st century business*. Stony Creek, CT: New Society Publishers.
- Elkington, J. (2018). 25 years ago I coined the phrase “triple bottom line.” Here’s why it’s time to rethink it. Harvard Business Review. Retrieved from <https://hbr.org/2018/06/25-years-ago-i-coin-the-phrase-triple-bottom-line-her-es-why-im-giving-up-on-it>, (Accessed 15 June 2022).
- EuPC (2019). EuPC publishes results of its 2nd survey on the use of recycled plastic materials, 10/01/2019. Retrieved from: <https://www.plasticsconverters.eu/single-post/2019/01/10/EuPC-publishes-results-of-its-2nd-survey-on-the-use-of-recycled-plastics-materials>, (Accessed 15 May 2022).
- Evans, S., Vladimirova, D., Holgado, M., van Fossen, K., Yang, M., Silva, E. A., & Barlow, C. Y. (2017). Business model innovation for sustainability: towards a unified perspective for creation of sustainable business models. *Business Strategy and the Environment*, 26(5), 597–608.
- Foss, N. J., & Saebi, T. (2017). Fifteen years of research on business model innovation: How far have we come, and where should we go? *Journal of Management*, 43(1), 200–227.
- Frankenberger, K., Weiblen, T., Csik, M., & Gassmann, O. (2013). The 4I-framework of business model innovation: a structured view on process phases and challenges. *International Journal of Product Development*, 18(3/4), 249–273.
- Freudenreich, B., Lüdeke-Freund, F., & Schaltegger, S. (2020). A stakeholder perspective on business models: Value creation for sustainability. *Journal of Business Ethics*, 166, 3–18. <https://doi.org/10.1007/s10551-019-04112-z>.
- Gao, J., & Bansal, P. (2013). Instrumental and integrative logics in business sustainability. *Journal of Business Ethics*, 112(2), 241–255.
- Geissdoerfer, M., Vladimirova, D., & Evans, S. (2018). Sustainable business model innovation: A review. *J. Clean. Prod.*, 198, 401–416.
- Grundfos (2009). What is Grundfos LIFELINK? <https://www.grundfos.com/about-us/news-and-media/news/what-is-grundfos-lifelink>, (Accessed 15 January 2022).
- Hahn, T., Pinkse, J., Preuss, L., & Figge, F. (2015). Tensions in corporate sustainability: Towards an integrative framework. *Journal of Business Ethics*, 127(2), 297–316.
- Jensen, M. C. (2002). Value maximization, stakeholder theory, and the corporate objective function. *Business Ethics Quarterly*, 12(2), 235–256.
- Kupfer, T., Grönman, K., & Liedke, A. (2015). Ecological balance sheet for recycling polyurethane foam cans using the PDR method. Retrieved from https://www.pdr.de/fileadmin/content/default/Geschaeftsbereiche/Recycling_PUR-Schaum/Die_Oekobilanz/PDR_Oekobilanz_12_2015_kurz_EN_fuer_www.pdf, (Accessed 15 June 2022).
- Loorbach, D., van Bakel, J., Whiteman, G., & Rotmans, J. (2010). Business strategies for transitions towards sustainable systems. *Business Strategy and the Environment*, 19(2), 133–146.
- Loorbach, D., & Wijsman, K. (2013). Business transition management: exploring a new role for business in sustainability transitions. *Journal of Cleaner Production*, 45, 20–28.
- Lüdeke-Freund, F. (2020). Sustainable entrepreneurship, innovation, and business models: Integrative framework and propositions for future research. *Business Strategy and the Environment*, 29(2), 665–681.
- Lüdeke-Freund, F., Carroux, S., Joyce, A., Massa, L., & Breuer, H. (2018). The sustainable business model pattern taxonomy—45 patterns to support sustainability-oriented business model innovation. *Sustainable Production and Consumption*, 15, 145–162.
- McWilliams, A., & Siegel, D. (2001). Corporate social responsibility: a theory of the firm perspective. *Academy of Management Review*, 26(1), 117–127.

- Münkner, H.H. (2007). Die Grameen Bank—ein imitierbares Modell?. Retrieved from: https://www.online.uni-marburg.de/sem/WS07_08/docs/grameen.pdf, (Accessed 15 May 2022).
- Pedersen, E. R. G., Gwozdz, W., & Hvass, K. K. (2018). Exploring the relationship between business model innovation, corporate sustainability, and organisational values within the fashion industry. *Journal of Business Ethics*, 149(2), 267–284.
- Pedersen, E. R. G., Lüdeke-Freund, F., Henriques, R., & Seitanidi, I. M. (2020). Collaborative cross-sector business models for sustainability. *Business & Society*, 60, 1–7.
- Pfaendner, R. (2015). Improving the quality of recycled materials—An overview of suitable additives. *Kunststoffe International*, 12/2015, 41–44.
- Pieroni, M. P. P., McAloone, T. C., & Pigosso, D. C. A. (2019). Business model innovation for circular economy and sustainability: a review of approaches. *Journal of Cleaner Production*, 215, 198–216.
- Pies, I. (2016). The ordonomic approach to order ethics. In C. Luetge, & N. Mukerji (Eds.), *Order Ethics: An Ethical Framework for the Social Market Economy* (pp. 19–35). Switzerland: Springer, Cham.
- Pies, I. (2022a). Kapitalismus und das Moralparadoxon der Moderne. *Ökonomik und Ethik: Studien zur Sozialstruktur und Semantik moderner Governance. Band* (p. 24). Berlin. wvb.
- Pies, I., Beckmann, M., & Hielscher, S. (2014). The political role of the business firm: An ordonomic concept of corporate citizenship developed in comparison with the aristotelian idea of individual citizenship. *Business & Society*, 53(2), 226–259.
- Pies, I., Hielscher, S., & Beckmann, M. (2009). Moral commitments and the societal role of business: An ordonomic approach to corporate citizenship. *Business Ethics Quarterly*, 19(3), 375–401.
- Pies, I., Hielscher, S., & Everding, S. (2020). Do hybrids impede sustainability? How semantic reorientations and governance reforms can produce and preserve sustainability in sharing business models. *Journal of Business Research*, 115, 174–185.
- Pies, I., Schreck, P., & Homann, K. (2019). Single-objective versus multi-objective theories of the firm: using a constitutional perspective to resolve an old debate. *Review of Managerial Science*, 23(December), 2019. <https://doi.org/10.1007/s11846-019-00376-x>
- Pies, Ingo (2022b). 30 Jahre Wirtschafts- und Unternehmensethik: Ordonomik im Dialog. *Band* (p. 25). Berlin. Wvb.
- Produkte durch Recycling (PDR) (2020). Branchenlösung für PU-Schaumdosen in Deutschland. Retrieved from: https://www.pdr.de/fileadmin/content/default/Downloads/Infomaterial/PDR_Schulungsmaterial_PU-Schaumdosenrecycling.pdf, (Accessed 15 June 2022).
- Roome, N., & Louche, C. (2016). Journeying toward business models for sustainability: A conceptual model found inside the black box of organisational transformation. *Organization & Environment*, 29, 11–35.
- Schaltegger, S., & Burritt, R. (2018). Business cases and corporate engagement with sustainability: Differentiating ethical motivations. *Journal of Business Ethics*, 147(2), 241–259.
- Schaltegger, S., Hansen, E. G., & Lüdeke-Freund, F. (2016b). Business models for sustainability: origins, present research, and future avenues. *Organization & Environment*, 29, 3–10.
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2016a). Business models for sustainability: A co-evolutionary analysis of sustainable entrepreneurship, innovation, and transformation. *Organization & Environment*, 29(3), 264–289.
- Schaltegger, S., Lüdeke-Freund, F., & Hansen, E. G. (2012). Business cases for sustainability and the role of business model innovation. *International Journal of Innovation and Sustainable Development*, 6(2), 95–119.
- Schultz, F. C. (2022a). Approaching tensions in business model innovation for sustainability: An ordonomic meta-framework on tensions. *European Journal of Sustainable Development* (Volume 11, (Special Issue), 4.
- Schultz, F. C. (2022b). The circular economy and economic growth – An irreconcilable tradeoff? *Resources, Conservation & Recycling* (Volume 183)(August 2022), Article 106351.
- Schultz, F. C., Everding, S., & Pies, I. (2021). Circular supply chain governance: A qualitative-empirical study of the European polyurethane industry to facilitate functional circular supply chain management. *Journal of Cleaner Production*, 317, Article 128445.
- Schultz, F. C., & Reinhardt, R. J. (2022). Facilitating Systemic Eco-Innovation to pave the way for a Circular Economy: A qualitative-empirical study on barriers and enablers in the European Polyurethane Industry. *Journal of Industrial Ecology*, 26(5), 1646–1675. <https://doi.org/10.1111/jiec.13299>
- Schumpeter, J. A. (2006). *Theorie der wirtschaftlichen Entwicklung. Nachdruck der ersten Auflage von 1912 [eigentlich 1911] [1911]. herausgegeben und ergänzt um eine Einleitung von Jochen Röpk und Olaf Stiller*. Berlin: Duncker & Humblot.
- Shakeel, J., Mardani, A., Chofreh, A. G., Goni, F. A., & Klemes, J. J. (2020). Anatomy of sustainable business model innovation. *Journal of Cleaner Production*, 261, Article 121201.
- Siegel, D. S. (2009). Green management matters only if it yields more green: An economic/strategic perspective. *Academy of Management Perspectives*, 23(3), 5–16.
- Smith, W. K., & Lewis, M. W. (2011). Toward a theory of paradox: A dynamic equilibrium model of organizing. *Academy of Management Review*, 36, 381–403.
- Stål, H. I., Bengtsson, M., & Manzhyński, S. (2022). Cross-sectoral collaboration in business model innovation for sustainable development: Tensions and compromises. *Business Strategy and the Environment*, 31(1), 445–463.
- Stubbs, W. (2019). Strategies, practices, and tensions in managing business model innovation for sustainability: The case of an Australian BCorp. *Corporate Social Responsibility and Environmental Management*, 26(5), 1063–1072.
- Stubbs, W., & Cocklin, C. (2008). Conceptualizing a “Sustainability Business Model. *Organization & Environment*, 21(2), 103–127.
- Upward, A., & Jones, P. (2016). An ontology for strongly sustainable business models: Defining an enterprise framework compatible with natural and social science. *Organization & Environment*, 29(1), 97–123.
- Van Bommel, K. (2018). Managing tensions in sustainable business models. *Exploring Instrumental and Integrative Strategies Journal of Cleaner Production*, 196, 829–841.
- Van der Byl, C. A., & Slawinski, N. (2015). Embracing tensions in corporate sustainability: A review of research from win-wins and trade-offs to paradoxes and beyond. *Organization & Environment*, 28(1), 54–79.
- Velter, M. G. E., Bitzer, V., Bocken, N. M. P., & Kemp, R. (2020). Sustainable business model innovation: The role of boundary work for multi-stakeholder alignment. *Journal of Cleaner Production*, 247, Article 119497.
- Will, M. G., & Pies, I. (2018). Sensemaking and Sensegiving: A concept for successful change management that brings together moral foundations theory and the ordonomic approach. *Journal of Accounting and Organizational Change*, 14(3), 291–313.
- Williamson, O. E. (1983). Credible commitments: Using hostages to support exchange. *American Economic Review*, 73, 519–540.
- Williamson, O. E. (2010). Transaction cost economics: The natural progression. *American Economic Review*, 100(3), 673–690.
- Yang, M., Evans, S., Vladimirova, D., & Rana, P. (2017). Value uncaptured perspective for sustainable business model innovation. *Journal of Cleaner Production*, 140(3), 1794–1804.
- Yunus, M., Moingeon, B., & Lehmann-Ortega, L. (2010). Building social business models: lessons from the Grameen experience. *Longest Range Planning*, 43(2/3), 308–325.

Ingo Pies has been a tenured Full Professor since October 2002 and holds the Chair of Economic Ethics at Martin-Luther-University Halle-Wittenberg. He promotes the “ordonomic” research program, which combines economic, psychological, sociological, and ethical strands of thought. He analyses the moral appropriateness of societal institutions as well as the societal functionality of traditional morality.

Felix C. Schultz is a research associate, lecturer, and PhD candidate in economic ethics at Martin-Luther-University Halle-Wittenberg. His research focuses on sustainable innovation, business ethics, and circular economy. Previously, he worked as management consultant at the international management consultancy A.T. Kearney for several years.