



Barriers and drivers to sustainable business model innovation: Organization design and dynamic capabilities

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ABSTRACT

Sustainable business model innovation (SBMI) in large multinational corporations is increasingly perceived as a key driver for competitive advantage and corporate sustainability. While the SBMI literature acknowledges that corporations require dynamic capabilities to innovate their business model for sustainability, the role of organization design to nurture dynamic capabilities for this purpose has been scantily addressed. By taking a qualitative research approach, we address how organization design affects dynamic capabilities needed for SBMI. Accordingly, from an organization design perspective, we identified barriers and drivers on three levels: the institutional, the strategic, and the operational. The contributions of our study are threefold. First, we contribute to a recent discussion on how organizational design affects dynamic capabilities needed for business model innovation. Second, we present a multi-level framework to show how interconnected barriers and drivers obstruct or enable SBMI. Third, our study answers a call to advance theoretical perspectives on SBMI.

1. Introduction

Business model innovation (BMI) is about innovating the value creation, delivery, and capture mechanisms of firms to entice customers to pay for value and convert this into profits (Baden-Fuller and Morgan, 2010; Teece, 2010). It is perceived as a key activity for large multinational corporations (MNCs) to remain competitive (Baden-Fuller and Morgan, 2010; Robins, 2013; Wirtz et al., 2016; Zahra et al., 2006; Zott et al., 2011), leading to new customer offerings and revenue streams (Chesbrough, 2010; Massa et al., 2017). Faced with increasing sustainability challenges, as well as growing awareness amongst top managers that profit can be gained from tackling those challenges (Stubbs and Cocklin, 2008), corporate interest has recently expanded to embed societal issues into the BMI process. This is referred to as sustainable business model innovation (SBMI).

While equally focused on innovating the value creation, delivery, and capture mechanisms of firms, SBMI includes a broader notion of value: from mainly economic to also include social and environmental value; and from a customer and shareholder focus to a multi-stakeholder perspective, including societal stakeholders (Bocken et al., 2013; Lüdeke-Freund et al., 2016; Massa et al., 2017; Sommer, 2012). Importantly, SBMI can lead to direct business benefits such as cost savings and new revenue streams (Bocken et al., 2014; Schaltegger et al., 2012), and more amorphous advantages by being ahead of future stakeholder concerns and legislations

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(Schaltegger et al., 2012) and improving organizational resilience (Buliga et al., 2016), reputation (Homburg et al., 2013), and employee attractiveness (Greening and Turban, 2000). It is also well-recognized that SBMI holds great potential to address long-standing sustainability challenges (Foss and Saebi, 2017; Laasch, 2019; Stubbs and Cocklin, 2008). However, despite such opportunities, there is a lack of sustainable business models adopted by MNCs (Evans et al., 2017; Ritala et al., 2018).

Problematically, MNCs often lack the dynamic capabilities to innovate for SBMI (Hart and Dowell, 2011; Inigo et al., 2017). Defined as an organization's ability to "integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 1997, p. 516), dynamic capabilities are integral to BMI (Teece, 2018). At a base level, ordinary capabilities as repeatable patterns of action allow corporations to operate their current business model (Winter 2003). At a higher level, *sensing* (identifying and assessing opportunities), *seizing* (mobilizing resources to address opportunities and capture value from doing so), and *transforming* (continued renewal of the organization) as dynamic capabilities enable corporations to adjust, recombine and create ordinary capabilities (Teece, 2018). By being concerned with change, dynamic capabilities are critical for corporations to craft, refine, and transform their business models (Harrell et al., 2007; Teece, 2007).

Notably, corporations typically only reconfigure their capabilities and invest in the development of (dynamic) capabilities when perceived financial benefits of changing and reconfiguring exceed those of maintenance (Hart and Dowell, 2011; Winter 2003). This can be detrimental for SBMI. First, it is not always evident whether and how corporations can create financial value through sustainability (Epstein and Roy, 2001; Schaltegger et al., 2012). Second, addressing complex sustainability challenges with uncertain pay-offs may require financial trade-offs and lengthy experimentation with a broad range of external stakeholders, while corporations typically focus on short-term profit maximization (Aragón-Correa and Sharma, 2003; Weissbrod and Bocken, 2017). Third, costly efforts to innovate for sustainability may be easily imitated by others (Schaltegger et al., 2016). As a result, corporations may resist the development of dynamic capabilities needed for SBMI (Aragón-Correa and Rubio-Lopez, 2007; Chakrabarty and Wang, 2012).

While ordinary capabilities that allowed corporations to build a competitive advantage over time are dependent on a firm's existing strategy, structure, and resources (Eisenhardt and Martin, 2000), business model literature only recently started to call attention to how organization design affects the dynamic capabilities needed to innovate a firm's dominant business model (Fjeldstad and Snow, 2018; Teece, 2018). Focused on building effective organizations to help firms reach their purpose and objectives (Burton et al., 2006), organization design is conceptualized as a configuration of components such as strategy, structure, processes, incentives, and people (Burton et al., 2006; Galbraith, 1974; Meyer et al., 1993; Miles and Snow, 1978; Mintzberg, 1980). Despite the recognition that a firm's vision, culture, structure, investment patterns, incentive system, and values can reinforce or undermine its dynamic capabilities (Aragón-Correa and Sharma, 2003; Hart and Dowell, 2011; Leih et al., 2015; Teece, 2018), the organization design to nurture dynamic capabilities, important for (S)BMI, remain scantily addressed (Fjeldstad and Snow, 2018; Leih et al., 2015).

To address this gap, we investigate factors within organization design that influence the development of dynamic capabilities needed for SBMI in MNCs. We adopt a qualitative research approach to reveal SBMI barriers and drivers by drawing on 53 semi-structured interviews with top, senior and mid-level managers involved in SBMI in six large MNCs: AkzoNobel, Interface, Johnson & Johnson, Pearson, Philips, and Unilever. By identifying factors at the institutional, strategic and operational levels that hinder and enable sensing, seizing, and transforming for SBMI, this study contributes to an understanding of the organizational design conducive for dynamic capabilities to effectuate SBMI. As such, we advance theoretical perspectives on SBMI (Dentchev et al., 2018) and provide guidance to corporate management on how to innovate business models towards greater sustainability (Foss and Saebi, 2017). Overall, this study contributes to emergent theory of how MNCs can fulfil their growing commitments to deliver societal value alongside profit.

2. Background

Strong dynamic capabilities are needed for BMI (Achtenhagen et al., 2013; Teece, 2018). It is also understood that organization design influences the strength of a firm's dynamic capabilities (Teece, 2018). While there has been a focus in literature on understanding the link between dynamic capabilities and BMI for MNCs (Teece, 2010, 2018); and the organizational environment that encourages innovation (Augier and Teece, 2009; Demanpour, 1991; Inigo et al., 2017; Zahra et al., 2006), the organizational design factors that support the dynamic capabilities needed for (S)BMI remain underexplored. Yet, understanding organization design factors that contribute to or hinder the development of strong dynamic capabilities could give new insight into the emergence of SBMI in MNCs.

2.1. Sustainable business model innovation

SBMI has become prominent in literature and practice as a way to gain competitive advantage, while resolving social and environmental issues (Dentchev et al., 2016; Massa et al., 2017). It is about changing the way business is done, by incorporating societal and environmental concerns into core business practices (Foss and Saebi, 2017; Massa et al., 2017). SBMI can thus be defined as innovation to create significant positive impacts, and significantly reduced negative impacts for the environment and society, through changes in the way the organization and its value-network create, deliver and capture value or change their value propositions (Bocken et al., 2014).

For example, corporations may decide to retain ownership of products and provide service contracts instead of engaging in one-time sales, allowing the company to build longer lasting products and include maintenance and recycling services, which generates profits over a longer time, while benefitting the environment (Tukker (2004)). A social example is a company's refocus on developing markets, where societal needs such as better education and healthcare are addressed through SBMI, targeting a social need and a

business opportunity (Dahan et al., 2010; Yunus et al., 2010). By providing a solution to global challenges such as climate change and poverty, SBMI can shape markets and society, sometimes more than regulators and NGOs, but often in collaboration with them (Schaltegger et al., 2016).

However, the significant processes and procedures to develop and transform business models are expected to be complex (Snihur and Wiklund, 2019). This is even worse for the specific case of SBMI involving the need to incorporate heterogeneous metrics (social, environmental and economic) and include diverse stakeholders in the innovation process (Freudenreich et al., 2019; Laasch, 2018; Massa et al., 2017; Sommer, 2012). Moreover, the SBMI may be developed with the best intent (Manninen et al., 2018), but the sustainability impacts are hard to foresee and negative rebounds (e.g. reducing public transport usage when entering a car sharing service) might lessen their impact (Weissbrod and Bocken, 2017). Given the complexity of SBMI, corporations need to invest in dynamic capabilities to move beyond the dominant logic they are accustomed to, which is no longer appropriate in the face of growing societal and environmental issues (Hart and Dowell, 2011; Sommer, 2012).

2.2. Dynamic capabilities and SBMI

To understand the success and failure of BMI, dynamic capabilities are of relevance (Teece, 1997; Winter 2003), as strong dynamic capabilities allow the firm to adjust and redesign its business model (Teece, 2018). Dynamic capabilities govern how a firm's ordinary capabilities (e.g. effective marketing tactics; efficient manufacturing processes) are developed, augmented and combined and include competences to: (1) sense and evaluate opportunities and threats; (2) seize opportunities, mitigate threats and capture value from doing so; and (3), reconfigure a firm's tangible and intangible assets to remain competitive (Harrell et al., 2007; Helfat and Peteraf, 2015; Teece, 2007). Strong dynamic capabilities lead to a coherent set of knowledge and skills needed to address emerging opportunities and help sense and seize such opportunities before competitors do (Zahra et al., 2006). Subsequently, it is argued that the dynamic capabilities of sensing, seizing, and transforming, are the ones on which top management should be most focused on as they are deemed critical for the innovation and selection of business models (Teece, 2018; Zahra et al., 2006).

Dynamic capabilities are also crucial for companies pursuing SBMI (Inigo et al., 2017; Sommer, 2012). Within the context of SBMI, *sensing* involves companies becoming aware of emerging sustainability issues and understanding and appraising these as potential business opportunities (McWilliams and Siegel, 2011). For example, sensing for SBMI may entail MNCs identifying and acting upon constraints created by the natural environment such as resource depletion that could create immediate discontinuities and threaten firms' existing resources and capabilities (Hart and Dowell, 2011). *Seizing* is about mobilizing resources to address emerging (sustainability) opportunities and capture value from doing so, by translating these into SBMI opportunities (Teece, 2018). As suggested by Hart and Dowell (2011), pressing sustainability challenges will require the mobilization of resources to address opportunities and threats and to reap the (financial) benefits from doing so. Finally, *transforming* is about the deliberate continued renewal of the organization's capabilities (Teece, 2018) towards becoming a sustainable business and is about implementing new sustainable business model concepts. In sum, while sensing, seizing, and transforming capabilities are essential for BMI, they are also seen as vital for SBMI (Pieroni et al., 2019).

2.3. Organization design, dynamic capabilities and SBMI

Business models, dynamic capabilities, and organization design are interlinked (Fjelstad and Snow, 2018). Organization design is about the practice of building effective organizations, where organizations are conceptualized as a configuration of components such as strategy, people, structure and management processes (Burton et al., 2006; Galbraith, 1974; Meyer et al., 1993; Miles and Snow, 1978). An expanded theoretical model for organization design includes management philosophy – the values, beliefs, and assumptions that underlie and guide leadership and decision-making approaches (Miles and Snow, 1978; Miles and Creed, 1995). It has been argued that firms as 'human organizations' must confront challenges of organizational design, such as imperfect incentive alignment and governance, and bureaucratic decision-making, to make organizations more effective and efficient (Augier and Teece, 2009; Harris and Raviv, 2002; Mintzberg, 1980).

Research linking organizational design, dynamic capabilities and BMI is emerging (Fjelstad and Snow, 2018; Leih et al., 2015; Teece, 2018) and organization design is found to be crucial for dynamic capabilities needed for BMI (Leih et al., 2015; Wilden et al., 2013). Various studies have focused on the organizational design antecedents of dynamic capabilities (e.g. Augier and Teece, 2009; Teece, 2018; Zahra et al., 2006; Zollo and Winter 2002). For example, a firm's incentive system as part of the organization design can reinforce or undermine dynamic capabilities (Teece, 2018). Kor and Mahoney (2005) investigated firm investment in R&D and marketing and how budgets are governed, and the relation to dynamic capabilities. More generally, Augier and Teece (2009) investigate how managerial decisions shape dynamic capabilities. Zollo and Winter (2002) describe how dynamic capabilities are shaped by the coevolution of various learning mechanisms, while Zahra et al. (2006) make the connection between organizational age, knowledge, and dynamic capabilities. Others like Aragón-Correa and Sharma, 2003; Hart and Dowell (2011), and Lyneis and Sberman (2016) have touched upon aspects of organization design such as strategy and deliberate investments in relation to dynamic capabilities for sustainability. Yet, the ways in which organization design elements specifically influence dynamic capabilities for SBMI remain unexplored.

In sum, SBMI requires strong dynamic capabilities, but the organizational design factors that hinder or nurture these needs deeper investigation. Literature has broadly discussed barriers and drivers for BMI (e.g. Chesbrough, 2010), but only recently made the link between BMI, organization design and dynamic capabilities (Fjelstad and Snow, 2018; Leih et al., 2015; Teece, 2018). Given a need for MNCs to develop (dynamic) capabilities to tackle complex sustainability challenges (Hart, 1995; Hart and Dowell, 2011; Sommer, 2012), this suggests a necessity explore the role of organization design to nurture these.

3. Methods

Given a dearth of comprehensive empirical research on how organization design affects dynamic capabilities needed for SBMI, qualitative research methods are suitable to explore this topic (Corbin and Strauss, 1990). Following methodological suggestions by established qualitative researchers (Glaser and Strauss, 1967; Locke, 2001), we specifically rely on a grounded theory approach in answering our research question, allowing us to build theory inductively on the basis of a continuous analysis of the data while remaining open to new themes that emerge from the data. Our data included 53 interviews with 55 top, senior and mid-level managers at six MNCs, each committed to SBMI in their respective industries. Building on substantive theory on the importance of dynamic capabilities for BMI (Helfat and Winter 2011; Teece, 2007; Zahra et al., 2006) and emergent theory on how organization design affects dynamic capabilities for BMI (Fjeldstad and Snow, 2018; Teece, 2018), we took an interpretive research approach to extend and build on existing theory (Suddaby, 2006).

3.1. Sampling

To select information-rich settings that represent the phenomenon of interest, we first sought to identify MNCs in which the phenomenon was embedded (Morse, 2010). To do so, we purposefully based our selection of corporations on their position in two sustainability indexes—the GlobeScan/SustainAbility Survey and the Dow Jones Sustainability Index; the former being the longest running index which draws on the expertise of thousands of experts from the corporate and (non)governmental sector (Grayson et al., 2018) and the latter being consistently recognized for its credibility in the ‘Rate the Raters’ report by SustainAbility—and complemented our understanding of the MNC’s commitment to sustainability with online media coverage of SBMI initiatives to ensure presence of the phenomenon of interest. To determine whether sustainability initiatives in the media classified as SBMI, we based ourselves on the sustainable business model archetypes by Bocken et al. (2014).

As a next step, through personal contacts of the researchers, senior managers of 7 MNCs were approached with the request to participate in our study. Interface (a carpet-tile manufacturer), Philips (a conglomerate in capital goods), and Unilever (a fast-moving consumer goods company) agreed to participate. Responding to perceived uniformities in our initial findings and suggestions by interviewees to account for variations between industries to aid our theorizing, 9 additional MNCs in different industries with top positions in both sustainability indexes and media coverage of SBMI were approached, again through personal contacts of the researchers. AkzoNobel (a paint and chemicals company), Johnson & Johnson (a pharmaceutical company), and Pearson (an education and publishing company) agreed to participate. Subsequent meetings with corporate representatives enabled us to identify SBMI initiatives to ensure that MNCs provided a rich empirical context of interest in our study.

3.2. Data collection

As presented in Table 1, we conducted 53 semi-structured, in-depth interviews with 6 top managers (T), 24 senior managers (S), and 25 mid-level managers (M) who were actively engaged in SBMI inside their respective organizations. To get a holistic understanding of how organization design affects dynamic capabilities needed for SBMI, we sought to interview top and senior managers who sponsored the development of SBMI initiatives inside their respective organizations. We also interviewed senior and mid-level managers with different functional backgrounds (e.g. R&D or marketing) who were identified by their superiors and/or their peers as champions or supporters of SBMI initiatives. Following initial introductions to top, senior, and mid-level managers by representatives of the MNCs, we relied on snow-ball sampling to complete our data collection. Starting with three MNCs in 2016, we kept including corporations till theoretical saturation was reached – the point at which few or no new insights could be generated by including more data.

The semi-structured interviews were conducted between 2016 and 2018 and were held in Dutch or English via telephone or in person. Interviews typically lasted 40 min to 1 h. Although these interviews were conversational by nature, an interview protocol was used to cover topics related to our research question without leading respondents in any particular direction (Gioia et al., 2013). Each interviewee was asked to name and describe SBMI initiatives in which they were involved, to clarify their role in these initiatives, to identify organizational factors that stimulated and supported the development of SBMI initiatives in which they were involved, and to identify organizational factors that discouraged and hindered the development of SBMI initiatives in which they were involved. Open-ended questions and probing allowed categories and themes to emerge during the interviews, and informed questions on emerging theoretical ideas throughout the interview as well as follow-up questions in subsequent interviews. All interviews were recorded and transcribed.

As detailed in the Appendix, the data set included 59 SBMI initiatives in six MNCs, organized according to the sustainable business model archetypes in Bocken et al. (2014). The SBMI initiatives are diverse and, although some may not sound like full-scale SBMI (e.g. paint recycling), the initiatives mentioned have a profound effect on the elements of the business model (e.g. value creation, delivery, and capture) to address environmental and social issues. Importantly, BMI constitutes the development and refinement of business models, regardless of whether entire business models are innovated or only certain elements are replaced and/or recombined (Teece, 2018). Underlining the importance of also considering instances of incremental SBMI, the literature on BMI suggests that incremental BMI is far more common and may trigger radical change once incremental changes between and within components have accumulated over time (Demil and Lecocq, 2010; Laasch, 2019).

Table 1
Interviewees.

AkzoNobel	Interface	Johnson & Johnson	Pearson	Philips	Unilever
Corporate Director Sustainability (T)	President/CEO EMEA - SVP Interface (T)	Vice-president Global Head Health Economics and Market Access (S)	Managing Director South Africa (S)	Chief Executive Officer (T)	President North America/Executive Board (T)
Director Commercial Excellence	Sustainability Director (S)	Vice-president Global Medical Affairs (S)	Executive Director South Africa (S)	Global Head Sustainability (T)	Chief Sustainability Officer (T)
RD&I Director Specialty Chemicals (S)	Innovations Director (S)	Executive Director Corporate Citizenship & Community (S)	Managing Director China (S)	Chief HR Officer (S)	Global Vice-president Surf (S)
R&D Director Decorative Paints (S)	Director of Sustainability Strategy (S)	Head of JLABS (S)	Director Social Innovation (S)	General Managers Philips Lighting West Africa (S)	Vice-president Sustainable Business and Communication (S)
Global Sustainability Manager	Head of Sustainable Development (M)	Senior Director Sustainability & Engagement (S)	Head of Learning Innovation (M)	CEO Philips Lighting Benelux (S)	R&D Program Director (M)
Decorative Coatings (M)	Technical Support Manager (M)	Senior Director (S)	Senior Editor (M)	Innovation Program Manager Healthcare (S)	Director Sustainability BENELUX (M)
Director Sales & Marketing, RD Commercial Excellence (M)	Concept Designer (M)	Senior Director Neuroscience (S)	Manager Portfolio Strategy & Planning (M)	Global Business Leader Installed Base (S)	R&D Manager (M)
Global Sustainability Director	Distribution Manager (M)	Director Corporate Contributions (M)		Product Configuration Manager (M)	Sustainability Manager (M)
Decorative Paints (M)	Account Manager (M)	Associate Director Global public Health (M)		Development Engineer (M)	HR Manager (M)
Sustainability Director UK/Ireland (M)		Project manager (M)		Senior Research Scientist (M)	
Manager RD&I (M)				Research Scientist (M)	

*T = top manager **S = senior manager ***M = mid-level manager.

3.3. Data analysis

By gathering empirical qualitative data, clustering text segments into meaningful concepts, themes, aggregate dimensions, and by making sense of these categories, we applied a pattern-inducing technique (Gioia et al., 2013; Glaser and Strauss, 1967). To aid the discovery of theory from data through meaningful interpretation (Glaser and Strauss, 1967), one of the researchers collected and analyzed the data while the other kept analytical distance, whereby allowing the analysis to benefit from a balance between distance from and closeness to the data. To improve theorizing, one of the authors served as “devil’s advocate,” whereby relentlessly pushing for clarification and elaboration, asking critical questions, and identifying themes that were adopted when support emerged after re-considering the data (Crosina and Pratt, 2019). While continuously going back and forth between theory and data, the researchers compared and contrasted new categories as they emerged, and discussed how they were interconnected (Charmaz, 2006). The data were analyzed with qualitative data analysis program NVivo 12. The coding process was divided into three stages: open coding, axial coding, and theoretical coding (Pratt et al., 2006). Although presented in a linear fashion below, our analysis was dynamic and iterative (Suddaby, 2006).

In the first stage, through open coding, we stayed close to the data (Locke, 2001) and sorted information into first order codes and provisional categories. Open codes were descriptive in nature, and were identified through multiple iterations. Open codes in our data included both negative statements about the role of organization design when interviewees for example commented on incentives that were based on short-term financial targets, and positive statements about organization design when interviewees for example commented on sustainability related training. While going back and forth between the data and descriptive codes, we systematically distinguished between factors that either positively or negatively influenced sensing, seizing, and transforming as dynamic capabilities needed for SBMI.

In the second stage of our analysis, when moving from open to axial coding, we clustered open codes under more abstract and theoretical categories (Locke, 2001; Strauss and Corbin, 1998). For example, we combined statements related to a “lack of skills for SBMI,” a “lack of understanding for SBMI,” and a “lack of awareness for SBMI” into “limited capacity for SBMI.” Initially we identified 9 categories that constitute factors in organization design which negatively affect dynamic capabilities needed for SBMI (referred to as ‘barriers’) and 9 categories that constitute factors in organization design which enable dynamic capabilities needed for SBMI (referred to as ‘drivers’). After these initial categories were constructed, we revisited the data to see which, if any, first order codes fitted each category. While some of the revisited data did not fit well into some of the categories, we revised our initial categories and introduced 4 additional categories to describe barriers and drivers.

In the last stage of our analysis, we looked for aggregate dimensions underlying our categories by exploring how axial codes fitted together. For example, some categories seemed more about norms or beliefs that shape organizational action (e.g. valuing business sustainability), while others were more related to actions that help corporations achieve their organizational objectives (e.g. strategic focus on SBMI) and practices that facilitate these actions (e.g. incentive scheme for sustainability). We thus combined “focus on maximizing shareholder value,” “uncertainty avoidance,” and “short-termism” as institutional barriers, and “balancing shareholder and stakeholder value,” “embracing ambiguity,” and “valuing business sustainability” as drivers at the institutional level. Drawing on Hoffman (1999), we used the word institutional to indicate well-established rules, norms, and beliefs that describe the reality for the organization and guide their actions accordingly. We further combined “functional strategy,” “dominant focus on exploitation,” “prioritizing short-term growth,” “collaborative innovation,” “strategic focus on SBMI,” and “patient investments” into barriers and drivers at the strategic level. Drawing on Johnson et al. (2017), we use the word “strategic” to indicate actions that contribute to core organizational objectives and shape the long-term direction of a firm. Finally, “functional excellence,” “standard innovation processes and procedures,” “fixed resource planning and allocation,” “incentive system focused on short-term,” “financial performance metrics” encapsulated operational barriers to SBMI caused by practices that support strategic actions that contribute to core organizational objectives; and “people capability development,” “enabling innovation structure,” “ring-fenced resources for SBMI,” “incentive scheme for sustainability,” and “performance metrics for sustainability” were identified as operational drivers. Fig. 1 summarizes the process that we followed by showing our first-order concepts, categories, and aggregate dimensions.

4. Results

Building on the notion that the highest order dynamic capabilities—sensing, seizing, and transforming—are most relevant for innovating business models (Teece, 2018), our analysis revealed organizational design factors at an institutional, strategic and operational level that inhibit or enable those dynamic capabilities for SBMI. We first discuss barriers in organization design followed by factors that drive dynamic capabilities for SBMI, as presented in Fig. 2.

4.1. Barriers

As detailed in Fig. 2, a focus on maximizing shareholder value fosters uncertainty avoidance and short-termism. In turn, barriers at the institutional level as rules, norms, and beliefs that guide organizational behavior lead to a strategic emphasis on functional strategy, exploitation of current business operations, and short-term profitability. These strategic barriers translate into the following operational barriers: functional excellence, standardized innovation processes and procedures, fixed resource planning and allocation, incentive systems focused on the short-term, and financial performance metrics. Barriers on each level affect a corporation’s ability to identify and assess opportunities for SBMI; seize opportunities; and renew, displace and transform existing business models.

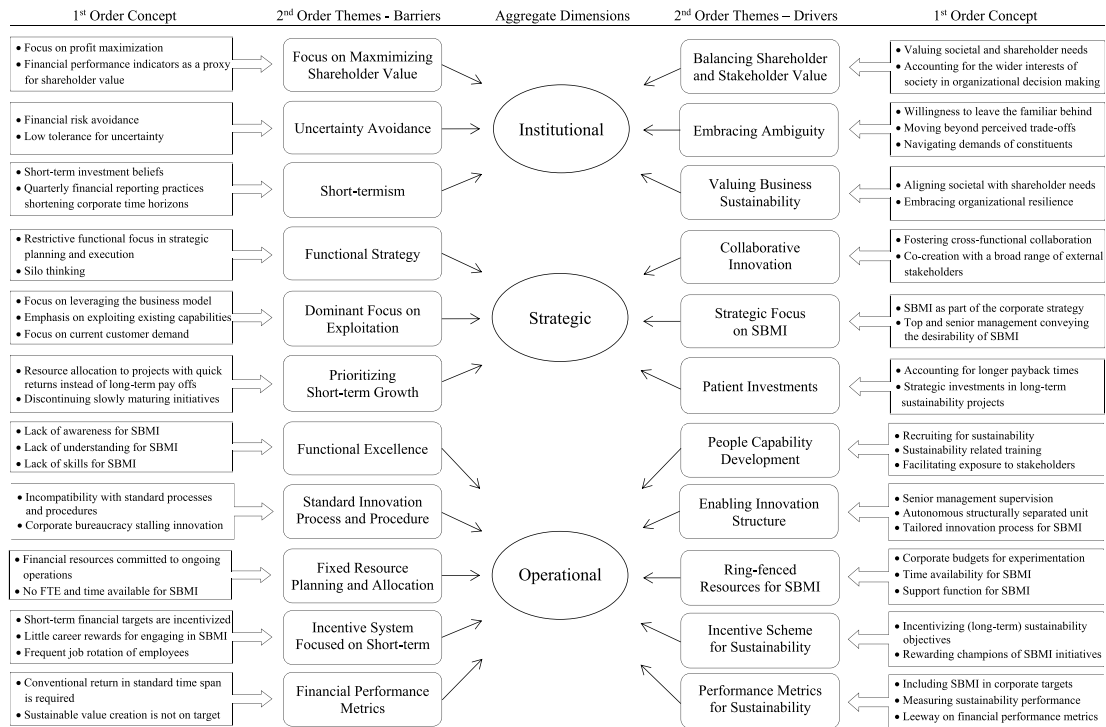


Fig. 1. Data structure.

4.1.1. Institutional barriers

Factors of organization design at the institutional level are concerned with well-established rules, norms, and beliefs that describe the reality for the organization and guide behavior accordingly (Hoffman, 1999, p. 351). We identified the purpose and objective of corporations to maximize shareholder value and subsequent short-termism and uncertainty avoidance as institutional barriers that obstruct sensing, seizing, and transforming for SBMI.

4.1.1.1. Focus on maximizing shareholder value. As frequently stated by interviewees, SBMI suffers from a focus on profit maximization and financial performance indicators to satisfy shareholder value. SBMI is difficult to achieve in itself, but the requirement for SBMI to be substantially profitable makes it even more complicated. Commenting on its effect on seizing, a top manager said, “[Making SBMI profitable] is challenging, I have to show my shareholders that I can realize my 15% [profit margin target].” A senior manager confirmed, “Our biggest struggle is to create a business model with which we can show that [SBMI] is also good business.” A focus on maximizing shareholder value also impaired sensing. A mid-level manager offered:

There are an awful lot of very negative people ... it was very much the theme of ... this wasn't really seriously about the business, it's more ... coming up to you with 'tree hugger' ... [If] you're just thinking with a commercial mindset, how could I ever bring value to the company with this kind of model?

Furthermore, with financial performance indicators as a proxy for shareholder value, corporations are reluctant to drive SBMI when it negatively affects financial performance indicators. A top-manager illustrated how this inhibited transforming by explaining how the adoption of a sustainable (circular) business model was impaired by the capital market, and said, “you will get assets as part of a solution which is no longer bought by the customer, that remain on our balance sheet ... when you are capital intensive, my return on capital goes down, and shareholders don't like that.”

4.1.1.2. Uncertainty avoidance. Problematically, a focus on maximizing shareholder value leads to uncertainty avoidance with respect to achieving financial results. As a consequence, investment decisions inside corporations are driven by financial risk avoidance and a low tolerance for uncertainty. As developing new capabilities for SBMI requires upfront investments with uncertain returns, a mid-level manager argued that financial risk avoidance impaired transforming: “this is common in the company, we are a bit risk-averse in terms of testing new things.” While SBMI typically addresses complex social and ecological problems, a low tolerance for uncertainty also obstructs SBMI. Commenting on its negative effect on sensing, a senior manager stated, “People can be put-off by the complexity ... the attention span doesn't give room for lots of exploration.” A low tolerance for uncertainty also impaired seizing. A mid-level manager stated, “how to approach [SBMI] is maybe at still quite a vague stage ... the solution isn't anywhere near clear.”

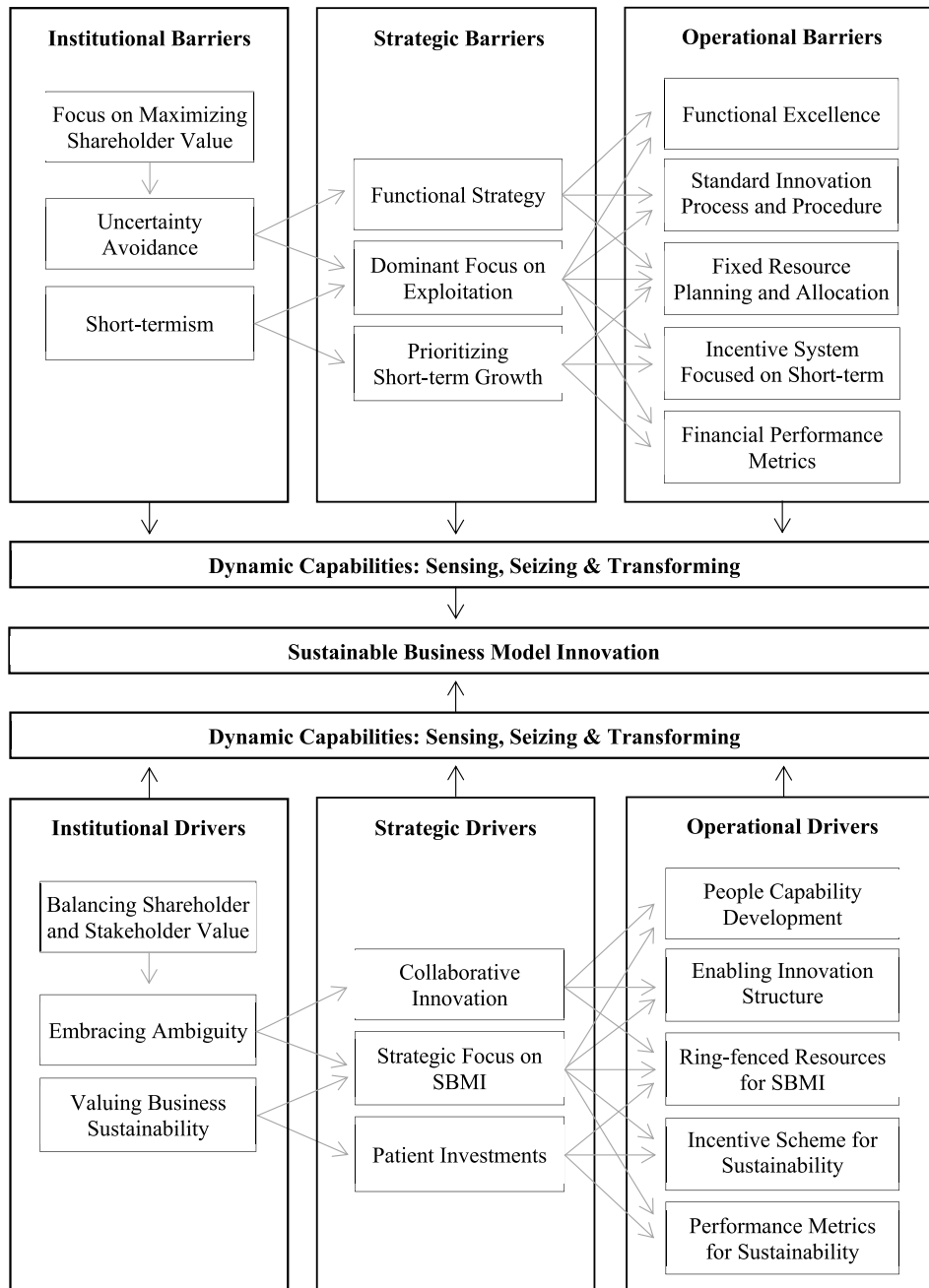


Fig. 2. Barriers to sensing, seizing and transforming for SBMI

4.1.1.3. Short-termism. As observed in our data, a focus on maximizing shareholder value also translates into short-termism. While corporations aim to realize immediate profits to satisfy shareholders demanding quick returns, short-term investment beliefs were said to dominate investment decisions. Commenting on its negative effect on sensing, a mid-level manager stated, “If I’d said to somebody I’m going to spend four years thinking about the problem and working [it] out ... a lot of people ... would have said ... you need to be thinking of things that are going to deliver next year.” The temporal orientation of corporations is also shortened by quarterly financial reporting practices. A top manager said, “a feature of a publicly listed firm is that every quarter you have to show good results.” A mid-level manager explained this negatively affected the seizing of opportunities:

When the CEO is going to stand up every three months to the external world and show progress on the financial side, particularly if you are not where the analysts want you to be, then that is quite hard to find a way of marrying that up with some of the long-term thinking that sustainability demands.

Furthermore, short-termism also affected transforming. Another mid-level manager said:

[SBMI] requires long-term thinking and most businesses seem to struggle with this ... the need for change is often articulated in terms of, you know, what the world would look like in 2050 or the end of the century and that's just too big a timescale for people to really get their heads around and to think about what it means for them now particularly when as an organization you're reporting quarterly profits and expectations of returns on investment.

4.1.2. Strategic barriers

Originating from a focus on maximizing shareholder value, uncertainty avoidance and short-termism at the institutional level, we identified an emphasis on functional strategy, a dominant focus on exploitation, and prioritizing short-term growth as strategic barriers that obstruct sensing, seizing, and transforming for SBMI. Notably, these barriers at the strategic level are concerned with actions that contribute to core organizational objectives and shape the long-term direction of a firm (Johnson et al., 2017).

4.1.2.1. Functional strategy. To reduce risk and uncertainty and drive efficiency, corporations in our sample seek to foster risk-mitigation and optimally leverage functional capabilities by setting clear functional boundaries and defining functional responsibility, accountability, and authority. To achieve corporate objectives, divisions and support functions each have their own strategy and follow their own strategic plan to reach specific goals. As a consequence, interviewees commented that this functional strategy focus negatively affects SBMI through a restrictive functional focus and silo thinking.

Commenting on a restrictive functional focus, interviewees stated that SBMI suffered from a lack of collaboration and shared ownership of a sustainability agenda between functions, which comes at the expense of seizing opportunities. A mid-level manager offered:

Issues relate to different people in different realms. Production vs R&D. In order to try new things, you need to bother production. But production doesn't want to try new things, they want to use all of their resources to develop products. So there is always a conflict there. Conflict between sales and marketing, between engineering and maintenance, between production and quality. So for every project there are multiple conflicts.

In a similar vein, another mid-level manager stated about its negative effect on transforming:

Our CEO, is saying "I want [business sustainability] to happen," several layers down I'm talking to a marketing director in the UK business who says, "I don't care what [the CEO] says, I've got these prices to deliver." And now she's not going to change her tune until her boss, the UK CEO, changes his, and he will take the view, "I understand sustainability is important, I'd love to deliver on these things but I can't tell my team what their priorities are."

Interviewees also commented on silo thinking. A mid-level manager stated on sensing:

[C]ollaboration between departments is also important to be able to get that idea through the organization. [The corporation] has over the last three years changed areas, has changed quite dramatically from being more of an umbrella to more functionalized and it puts a lot of demands upon us to be able to work in a matrix and get your ideas through.

4.1.2.2. Focus on exploitation. Both uncertainty avoidance and short-termism motivate a strategic focus on exploitation. As a consequence, we observed that an emphasis on leveraging the existing business model, exploiting existing capabilities, and current customer demand comes at the expense of sensing, seizing, and transforming for SBMI.

While a strategic emphasis on leveraging the existing business model was motivated by maximizing shareholder value in a quick and certain way, such a focus obstructs SBMI. With regard to transforming, a senior manager said, "if you want to make your 15% [profit margin] ... you cannot think about a full redesign of your business model." A top manager added, "switching to a different business model is incredibly difficult ... the complexity of changing your business model is tremendous ... you cannot disrupt it at once, from the perspective of your legacy." A senior manager explained, "you need to keep your credibility towards the stock market ... you cannot suddenly position yourself completely different."

Furthermore, our data also reveal that a strategic emphasis on exploiting existing capabilities comes at the expense of developing new capabilities needed for SBMI. A mid-level manager commented on its negative effect on seizing by saying, "the message is more and more focus on the core, which people are trying to do, but when you do that, your opportunities to do new things are diminished." Also, a focus on current customer demand obstructs SBMI. While this has a negative effect on sensing, a mid-level manager stated, "the way in which we go back to insight through customers, analysis of customer needs, does not always throw up sustainability as a core need from customers ... [therefore] the marketing teams will concentrate on servicing the primary needs."

4.1.2.3. Prioritizing short-term growth. Lastly, short-termism at the institutional level fosters a strategic emphasis on prioritizing short-term growth. Interviewees experienced that resources were primarily allocated to projects with quick returns. Commenting on its effect on sensing for SBMI, a mid-level manager said, "your project will be competing towards very many other projects ... we'll get the money, if the period of time is reasonable, therefore worth the comparison with others, but that can delay and actually stop [SBMI]." A mid-level manager added on transforming, "it's the politics of the prioritization and I think it is that alignment of internal business purpose to say: 'if you want to do this guys, you've got to resource it, you've got to take some decisions which are not going to be short-term'."

Moreover, interviewees mentioned that a focus on short-term growth translated into strategic decisions to discontinue slowly maturing initiatives. In terms of seizing, a senior manager offered, “I’ve been in so many projects where people say, ‘ah, well we need to show that we can get sales this year, otherwise we’re going to kill the project,’ and you sort of know that’s not going to happen for two or three years.” Another senior manager confirmed, “You need to have the patience for [SBMI] to be small for quite long ... You need to make sure that you’re not going to take away the resources off it too soon.”

4.1.3. Operational barriers

A strategic emphasis on functional strategy, exploitation, and short-term growth were found to obstruct SBMI, yet, these strategic barriers also translate into organizational design factors that hinder sensing, seizing, and transforming for SBMI at the operational level. Operational barriers are caused by practices that support strategic actions that contribute to core organizational objectives, and included functional excellence, standardized innovation processes and procedures, fixed resource planning and allocation, short-term oriented incentive systems, and financial performance metrics.

4.1.3.1. Functional excellence. As observed in our data, a strategic emphasis on functional strategy and a dominant focus on exploitation results in narrow functional expertise of employees. Commenting on a subsequent lack of awareness for SBMI, a mid-level manager explained its negative effects on sensing by sharing, “a reason why people don’t engage in [SBMI], is because they are not aware of it.” Interviewees also commented on a lack of understanding SBMI. A mid-level manager said about its effect on seizing, “The business isn’t set up to support and understand that type of innovation and there might be less acceptance of ... the level of ambiguity and unrealistic expectations.” A lack of understanding SBMI also came at the expense of deliberate continued renewal of the organization’s capabilities. A mid-level manager stated, “[employees] [do not] understand the business case for sustainability ... it is simply not clear to them.”

Lastly, a functional focus and a strategic emphasis on exploitation cause a lack of skills for SBMI. While underlining its importance to seizing, a senior manager explained, “many of the line managers don’t have any training or we haven’t done any capacity building ... so that they are able to look at an idea which is not well formed and actually help with the BMC [business model canvas].”

4.1.3.2. Standardized innovation processes and procedures. A strategic emphasis on exploitation and functional strategy also give impetus to standardized innovation processes and procedures. Problematically, interviewees remarked that SBMI is often incompatible with such processes and procedures, as they favor incremental innovation and require standard input from functions. While this forms a barrier to transforming, a mid-level manager said, “I totally accept that having a process is a really good thing. It’s just when your reason is to change the future, then working with a process is sort of like hitting metal.” Commenting on its effect on seizing, another mid-level manager said, “[when] it becomes too standardized, it becomes too much procedures and processing, people tend to become mechanical in their work, and lose a bit of the creativity, which is needed to be able to come up with new ideas.”

Furthermore, interviewees experienced that corporate bureaucracy obstructs SBMI by slowing down decision making and overcomplicating resourcing. This negatively affects sensing as good ideas get “stuck”. A mid-level manager commented, “you always need to cross ten layers ... to try something new.” Another mid-level manager added on seizing, “you are continuously waiting for others”, while a third observed, “we spend more time arguing with ourselves than we do with the marketplace ... it takes a lot of resource ... people spend so much time arguing cases internally to do things that it’s quite easy to lose heart.”

4.1.3.3. Fixed resource planning and allocation. As observed in our data, a focus on functional strategy, exploitation, and short-term growth resulted in fixed resource planning and allocation as an operational barrier to SBMI. Both financial and human resources are committed to ongoing operations, but SBMI suffers from a lack of both types. Commenting on its effect on transforming, a senior manager admitted, “there is little budget for central stimulation, and our program management ... does very little in terms of [SBMI].” A lack of time available for SBMI also has a negative effect on seizing. A mid-level manager stated, “there were a lot of employees with many ideas, but there was never time to implement these ideas.” Another mid-level manager added, “If you already have a very busy job and you need to find the time to do something extra like [SBMI] it could be very difficult, because you are still accountable for your day-to-day production and projects.” While this also had a negative effect on sensing, a senior manager said, “If people don’t have the time to think about things, if they are overwhelmed with the day-to-day responsibilities, that can be a discouragement.”

4.1.3.4. Incentive system focused on short-term. As observed in our data, a strategic focus on exploitation and short-term growth give impetus to a short-term incentive system at the operational level. Such an incentive system includes short-term financial targets, little career rewards for the pursuit of SBMI, and frequent rotation of employees. With respect to short-term financial targets, a mid-level manager commented, “[businesses] are faced with commercial realities within monthly, quarterly, annual business targets.” A senior manager explained its negative effect on sensing, “[when] you try to implement something which is very good for the company, but it doesn’t provide a direct gain to your direct boss ... That is sometimes an issue.” A mid-level manager added, “the role of the chief exec is not just about hitting next year’s or next quarter’s numbers, but actually making sure the long-term health of the business is there but most CEOs are heavily ‘bonused’ on their sort of three-year line.”

Besides short-term financial incentives, employees commented on a lack of career rewards for SBMI. A mid-level manager shared, “You’re out there battling quite often against other forces ... [if] you want to ... build your career and profile why on earth would you do something that everyone’s going to argue with?” While acknowledging that a lack of incentives impairs sensing, a senior manager

offered, “changing lives of poor people in Africa [so] maybe one day it's a new business model or do you want to be a brand manager launching the next million-dollar product? There is clearly a short-term career risk.”

Lastly, short-term incentives as part of employee performance evaluations lead to frequent job rotation. A mid-level manager commented on the negative effect on transforming, “when you invested a lot of time, and you have built a prototype at the right price and people like it, it is ready to be used ... suddenly there is a new manager.” A senior manager added, “you do all this work ... making sure that everyone understands the value it creates and then someone else comes in and you might have to do that all over again.”

4.1.3.5. Financial performance metrics. Lastly, a dominant focus on exploitation and prioritizing short-term growth at a strategic level lead to short-term financial performance metrics. As a typical return on investment in a conventional time frame is required, SBMI is obstructed in multiple ways. Related to sensing, a mid-level manager stated, “[SBMI] might be a little bit more risky. It might take longer to realize a positive return.” As a consequence, another mid-level manager concluded, “any process for evaluating new ideas that focuses too heavily on the business case early is always going to filter out these things.” A third mid-level manager confirmed, “there is more to this [idea] when you start looking at the life cycle of a product ... But those are indirect effects that do not translate into short-term financial effects.”

Finally, interviewees also commented on a lack of shared sustainability targets. This comes at the expense of seizing, as explained by a mid-level manager:

We have a set of core metrics in our business, which are managed at global board level, and they come down to what we would call ... business unit directors, but at that level they are one amongst many objectives and they certainly don't gravitate below that ... Which means that [mid-level managers] can happily push back on the efforts to introduce [SBMI].

While a lack of shared sustainability targets also came at the expense of transforming, a mid-level manager offered:

What happens is that the guys at the top put an overall framework in place which creates the atmosphere but they are very reluctant to drive that down so they don't get reports ... the top tier management ... they are a little bit guilty of wishful thinking. Do they think because they think it's important, if they don't drive it down a level, it'll still happen anyway?

4.2. Drivers

The purpose and objectives of corporations to maximize shareholder value trickle down to institutional, strategic, and operational barriers. Counteracting this, a balanced approach to shareholder and stakeholder value at the institutional level fosters a willingness to embrace ambiguity and value business sustainability. As captured in Fig. 2, these institutional drivers shape a strategic emphasis on collaborative innovation, SBMI, and patient investments. In turn, strategic drivers trickle down to drivers at the operational level, where people's capability development, an enabling innovation structure, ring-fenced resources for SBMI, an incentive scheme for sustainability, and performance metrics for sustainability, enabled SBMI. Drivers at each level affect the way in which corporations sense and evaluate opportunities for SBMI, influence whether corporations can seize opportunities, and impact a corporation's willingness to displace and transform its existing business models.

4.2.1. Institutional drivers

Institutional drivers refer to well-established rules, norms and beliefs that describe the reality for organizations and affect organizational behavior (Hoffman, 1999). To mitigate negative effects of a focus on shareholder value, uncertainty avoidance, and short-termism as barriers to SBMI at the institutional level, we identified a balanced approach towards shareholder and stakeholder value, embracing ambiguity, and valuing business sustainability, as institutional drivers for dynamic capabilities for SBMI.

4.2.1.1. Balanced focus on shareholder and stakeholder value. To complement a focus on maximizing shareholder value, interviewees underlined the importance of a balanced focus on shareholder and stakeholder value as an institutional driver of SBMI. Reflecting on the importance of valuing societal and shareholder needs, a top manager commented on the positive effect on seizing: “there's a permissive culture about wanting to have to demonstrate that [our corporation] is a business of purpose and that we have a broader mandate than simply returning dollars and euros to shareholders, but also adding positive social value.” Another top manager commented on its importance to transforming by saying:

We have leadership that has really emphasized the importance of sustainability which is really better understanding the environment, the external environment in which we're operating in, connecting up to the big trends and issues that exist in society. It creates an awareness and sensitivity to bring ideas in as opposed to an insular, self-contained culture so if you embrace sustainability as a company, you're necessarily making a statement about the fact that you need the outside in, not just the inside out and that means being much more open to new business models, new ways of thinking.

Furthermore, interviewees mentioned that accounting for the wider interest of society in organizational decision making is important to move beyond financial performance indicators guiding organizational decision making. Explaining its importance to sensing, a top manager stated, “When [BMI] is from a financial and sustainable standpoint not the right decision it will not happen.” In a similar vein, a mid-level manager stated:

It's not just about making money. Obviously we're a company and we need to be able to continue to ... give a good return to our shareholders. On the other hand, though, because we've been successful and we have all of these opportunities, we do believe we

have to make that accessible to people ... ethically how could you not help them?

4.2.1.2. Embracing ambiguity. Even though uncertainty avoidance was found to be integral to the functioning of corporations, interviewees highlighted the importance of corporations embracing ambiguity to solve long standing societal issues and navigate often conflicting demands of shareholders and stakeholders. To accept the discomfort of staying in uncertainty while outcomes of multiple potential solutions are unclear, corporations have to be willing to leave the familiar behind. A mid-level manager commented on its importance to seizing, “this kind of innovations need a different management and a different way to look at, people that are more comfortable with ambiguity as opposed to more conventional innovation.” While interviewees commented on the importance of balancing contradictory demands of stakeholder concurrently, a senior manager said in relation to transforming:

Now it's a risk but at the same time that's the sort of risk that we take as a business all the time and so you have to be prepared as a company if you believe in trying to create new business models, you believe in the role of long term roles in society, that there's a co-dependency, then you have to create the space for this.

Embracing ambiguity also entails that corporations move beyond perceived social-business trade-offs. A top manager commented on its importance to sensing by saying, “let's take waste as an example. If you actually drive waste down which is good for your costs, it's ethically right and it is sustainably right so you know that's the first point, so we need to break this narrative around ‘it's more expensive’. It's not. It's really not.”

4.2.1.3. Valuing business sustainability. Integral to corporate efforts to strike a balance between shareholder and stakeholder value, is the desire of corporations to meet their short-term and long-term needs, including those of society, to achieve greater levels of business sustainability. To underline the importance of aligning societal needs with those of shareholders, a top manager commented on its importance to sensing by saying:

[It] is about this urgency and the now, versus sustainability for the future. Sustainability is therefore today's performance and tomorrow's performance because we manage a sustainable ... growth model and therefore we outperform our competitors and that is super important. Because we know society better, we are closer to our culture, we create propositions which are actually more preferred by our consumer, and therefore sustainability for us ... has to do with performance for today and for tomorrow.

With respect to aligning societal needs with those of shareholders in relation to seizing, a mid-level manager said, “once that climate's created at the very top of the business, it provides an umbrella to organize some resources to address the issues that are associated with that.”

Furthermore, embracing organizational resilience was said to enable dynamic capabilities for SBMI. While such focus for corporations to prepare, anticipate, and respond to external changes in the environment was said to be important to enable SBMI, a top manager commented in relation to transforming: “last year we said that we wanted to become independent from oil ... you confront your entire organization and just see how you manage ... [SBMI] fits into that picture ... we are not interested in oil prices any longer [because we largely] became independent of that.” The top manager further explained, “this is part of our thinking, that sustainable business model innovation type of thinking ... you would never believe that you could realize such level of innovativeness ... that type of sustainability thinking moved us to develop these competencies.”

4.2.2. Strategic drivers

As observed in our data, institutional drivers in the shape of balancing shareholder and stakeholder value, embracing ambiguity, and valuing business sustainability inspire a strategic emphasis on collaborative innovation, a strategic focus on SBMI, and patient investments. Importantly, strategic drivers enable sensing, seizing, and transforming for the purpose of SBMI and provided a counterweight to strategic barriers.

4.2.2.1. Collaborative innovation. Embracing ambiguity at the institutional level opened the door for SBMI. Yet, interviewees emphasized a need for collaborative innovation to foster dynamic capabilities for SBMI. To address complex sustainability challenges, interviewees mentioned that multidisciplinary and cross-sectoral collaboration are required to inspire innovative solutions. Cross-functional collaboration is central to innovating with multiple players inside and outside the organization. With respect to seizing, a senior manager stated, “[sustainability] is certainly not restricted to one function, but has to be carried out by multiple functions ... so you leverage each discipline ... it is important to look at ... multiple angles to increase your chances for success.”

Co-creation with external stakeholders including customers, other organizations, and local communities, is found to be an important aspect of collaborative innovation. A senior manager commented on its importance to sensing by sharing, “That is the real stakeholder engagement – to understand what society's issues are and develop solutions according to that.” Co-creation with a broad range of external stakeholders also enables transforming. A top manager explained, “as a company you never have all the knowledge and answers. This requires a specific co-innovation program. We have built that over the years ... this forms the foundation of our success and capabilities and [sustainability] thinking to drive [SBMI].”

4.2.2.2. Strategic focus on SBMI. Embracing ambiguity and valuing business sustainability at the institutional level provides a basis for a strategic focus on SBMI, which makes SBMI an integral and important part of a corporation's strategy to achieve its (long-term) objectives. A top manager commented on its importance to transforming, “to provide direction to innovation, we said, we provide a

dot on the horizon.” Commenting on why SBMI initiatives had emerged inside the respective corporation, a mid-level manager offered, “because sustainability has been brought in [to strategy]. It’s one of the missions.” Furthermore, interviewees also commented on the importance of top and senior managers conveying the desirability of SBMI by underlining its strategic importance. Highlighting its importance to sensing, a senior manager said, “you have to stimulate employees to not only consider the business of today, but also the business of tomorrow.” While this also had an influence on seizing, a mid-level manager said, “If you don’t have that constant reinforcement from the top ... it is actually very easy to get bogged down in the day-to-day so ... whenever we’re doing our list presentations or quarterly presentations ... you’ll always see progress against sustainability objectives.”

4.2.2.3. Patient investments. Valuing business sustainability at the institutional level was found to foster a long-term temporal orientation, which translates into patient investments at the strategic level. To enable dynamic capabilities for SBMI, interviewees commented on the importance of strategic investments in long-term sustainability projects and for managers to forgo an immediate return. With respect to sensing, a top manager said:

Based on the profitability of [a SBMI initiative] we could have decided not to invest. But when you consider that it saves you energy and that you don’t want to be depended on oil ... I took the decision because it was the right thing ... it fits our sales profile.

Furthermore, interviewees also expressed the importance of accounting for longer payback times. Commenting on its importance to seizing, a senior manager emphasized the importance of “[being] realistic about timelines” and stated:

You are patient and you get it done or you’re not. It’s fine if people bang the table and I do it myself occasionally but that’s really to encourage rather than to say, you know, ‘No, I don’t want to do this for more than a year’ ... some innovations take an awful long time to settle in, even really quite small innovations can take quite a long time to be accepted in the market.

Emphasizing the importance of accounting for longer payback times for the purpose of transforming, a top manager offered:

It’ll be the organizations that have been experimenting, that have been working in trial and error, that will be best positioned to take advantage of that and to also be part of that future ... to understand the opportunities so it’s really about long-term business survival and evolution.

4.2.3. Operational drivers

While an emphasis on collaborative innovation, a strategic focus on SBMI, and patient investments at the strategic level enable sensing, seizing, and transforming for SBMI, these also facilitate practices that enable the execution of strategic actions conducive to dynamic capabilities for the purpose of SBMI. Drivers at the operational level include people capability development, an enabling innovation structure, ring-fenced resources for SBMI, an incentive scheme for sustainability, and performance metrics for sustainability.

4.2.3.1. People capability development. As observed in our data, a strategic emphasis on collaborative innovation and SBMI results in investments in people capability development related to training, recruitment, and development programs that facilitate exposure to stakeholders. Commenting on the need for recruiting sustainability minded employees for the purpose of transforming, a top manager emphasized the importance for organizations to have “like-minded people” and stated that “recruitment teams are pretty specific about what we stand for as a company, which also drives that you have a group of people working inside this company, many of whom share the purpose that we are here for.”

As part of people capability development, training was said to be important to enable dynamic capabilities for SBMI. Commenting on the importance for seizing, a top manager stated, “education. I cannot emphasize that enough ... We have to provide employees with training ... when introducing a sustainable business model.” With respect to corporations facilitating exposure to stakeholders and its effect on sensing, a senior manager offered:

[W]e have taken [employees] to different healthcare environments to immerse themselves in the realities of what does life look like ... they met people in poverty camps, they met people in hospitals, they met people in streets and other businesses so really taking them out of the cocoon ... and then challenge them all the time to ... [think about what they] could do differently tomorrow.

4.2.3.2. Enabling innovation structure. As observed in our data, collaborative innovation and a strategic emphasis on SBMI give room to an enabling innovation structure at the operational level. To overcome problems with bureaucracy and a lack of collaboration between functions, and to fund and protect SBMI, the importance of top and senior management involvement was mentioned. Commenting on its need for seizing, a senior manager said, “breaking barriers should be part of the role of the sustainability leader by going through the levels within the hierarchy from top to bottom and ... making bridges.” A mid-level manager added, “with the sustainability project, there [are] so many barriers ... you need somebody at a high level who will help you tail off those barriers.” A senior manager confirmed “you need someone from management ... who can spend some attention, [who] is willing to allocate budget ... who believes that this is the direction the company should go.”

Furthermore, interviewees emphasized the importance of autonomous structurally separated units to enable dynamic capabilities for SBMI. In terms of transforming, a top manager argued, “sustainable business that we do, greening our current product portfolio, you can perfectly do that inside the existing businesses. For new innovative ideas, that can be challenging.” A tailored innovation

process was also mentioned as an important driver for dynamic capabilities for SBMI. Commenting on the importance of tailored innovation process for sensing, a mid-level manager offered:

We use a stage-gate type of approach in innovation, we have checklists at each of the gates and the governance process around how decisions are made, if projects are going to be higher impact or have some sort of sustainability issue [we have] policies in place that direct the sort of innovation.

4.2.3.3. Ring-fenced resources for SBMI. Collaborative innovation, an emphasis on SBMI, and patient investments at the strategic level call for dedicated resources for SBMI at the operational level. While emphasizing a need for separate budgets to enable experimentation with SBMI, a mid-level manager offered with regard to seizing:

If you are just relying on normal prioritization mechanisms to allow these projects to come to the top, I think that would always be a real challenge ... You've always got competing resource issues. If you don't have technical teams or separate resources ring-fenced for these sorts of things the other types of project that are competing for resource that have got a clearer outcome, a shorter deliverable, a clearer business case, they're always easier to say yes to than something which is a bit less fully formed, a bit less clear as to how it's going to work, let alone if you're going to make any money out of it.

Dedicated budgets to enable experimentation was also said to be conducive to transforming. A top manager explained, "[every employee] was counted upon to reduce waste ... it generated profit which we reinvested [in SBMI] ... this created a snowball effect."

Interviewees also commented on the importance of time availability. With respect to its effect on sensing, a mid-level manager stated, "we have some sort of Friday afternoon-hour. You can spend them on whatever you feel like ... so we have invested our Friday afternoon to see: okay, what [circular] propositions can we think of." Interviewees also commented on the importance of a support function for sustainability. Elaborating on its importance to sensing, a mid-level manager said, "The fact that we do have a sustainability team means we do have some dedicated resource ... because we don't have those commercial day-to-day pressures, we have time to think and time to be a bit imaginative."

4.2.3.4. Incentive scheme for sustainability. Following a strategic emphasis on SBMI and patient investment, interviewees emphasized the importance of having an incentive scheme to give substance to these strategies at the operational level. While acknowledging the importance of incentivizing (long-term) sustainability objectives to seizing, a senior manager stated, "for years we had a part of our annual bonus based on sustainability performance ... [to] put our money where our mouth is." Underlining the need for incentives to enable sensing, a top manager offered, "[a business unit manager had] never asked a question about sustainability before. I thought it was pretty shameless. The day after it was announced that 50% of the incentive scheme became dependent on long-term objectives, he asked ... 'what can I do to improve my sustainability score?'" While such approach also had an effect on transforming, a top manager stated, "They all know, I play the game: if you do not co-operate, when your department doesn't innovate, [employees] miss their long-term incentive bonus."

Furthermore, rewarding champions for SBMI initiatives was also deemed important to enable dynamic capabilities for SBMI. Interviewees commented on the importance of rewards to stimulate sensing. A senior manager stated, "We start with a pat on the back but it can also be financial rewards for specific initiatives ... [or] promotion."

4.2.3.5. Performance metrics for sustainability. Finally, a strategic emphasis on SBMI and patient investments inspire performance metrics for sustainability at the operational level. While interviewees perceived a need to include SBMI in corporate targets and embed them in functions, a top manager commented on the importance to sensing by offering, "it provides legitimation to the organization [and employees] say: '[the CEO] asked for ... sustainable and circular business models, so what can we do?'" A mid-level manager added to this, "the only safeguard against that resource being prioritized out is having a clear objective owned by [management] to deliver on sustainability objectives." Another top-manager commented on the effect of setting corporate targets on transforming by offering, "[By setting audacious sustainability goals] we completely changed a fundamental assumption of our business ... it makes your organization start thinking, you will end with completely different things."

As a critical part of performance metrics for sustainability, interviewees commented on the importance of measuring sustainability performance. With respect to sensing, a mid-level manager stated, "we have developed a scorecard to compare new initiatives, in terms of whether they are circular ... they are not allowed to contain hazardous material ... or else they won't be produced." Measuring sustainability performance was also important to seizing. A mid-level manager shared:

Last year we ran a campaign of R&D, sales, marketing and then a general catch-all for all other employees ... it was role-specific in terms of we want you to focus on these particular areas [as part of the corporate sustainability plan], if you want to know more, here's where you can get more training and more reference sources but fundamentally this is what we want you to do ... part of your measurement, which we do quite regularly, is checking to see that those actions are happening and that things are progressing.

Lastly, while interviewees commented on negative effects of short-term financial performance-based metrics for SBMI, leeway on financial performance metrics was mentioned as a critical factor to enable dynamic capabilities for SBMI. With respect to sensing, a mid-level manager admitted that "it is more risky [and] there is a longer payback time for positive cash flows." As a consequence, a senior manager explained:

You need to be able to evaluate [SBMI] against the different evaluations that you would judge your normal business by, right? Because it's going to be small for long and it's not going to be profitable, it's not going to scale as fast but if you would hold it up to

the same KPIs as your normal business then it's never going to work.

5. Discussion

SBMI is viewed as essential to solve pressing societal issues (Laasch, 2018, 2019). Yet, the emergence of SBMI in large incumbents, who have the potential to address societal challenges at scale, is lagging behind (Ritala et al., 2018). Recently, authors focused attention on the importance of a firm's organization design to stimulate the development of dynamic capabilities needed for BMI (Fjeldstad and Snow, 2018; Teece, 2018). Dynamic capabilities are key for SBMI, but the organization design as an important factor in the emergence of such dynamic capabilities, needs to be more fully understood. To bridge this gap, we conducted 53 interviews with 55 top, senior and mid-level managers in six MNCs to explore how factors of organization design hinder or reinforce dynamic capabilities for 59 SBMI initiatives. By providing a comprehensive understanding of barriers and drivers at the institutional, strategic and operational level as captured in Fig. 2, our study highlights factors related to organization design that influence the dynamic capabilities needed for SBMI.

In doing so, we see the theoretical contributions of our paper as threefold. First, we address the underexplored link between organization design, dynamic capabilities and BMI in the context of SBMI. Second, we introduce an integrative and comprehensive multi-level framework which includes factors (barriers and drivers) for organization design in relation to dynamic capabilities for SBMI that trickle down from an institutional, to a strategic and operational level. Third and finally, we seek to contribute to literature on SBMI, which is in need for stronger theoretical contribution as well as practical guidance, beyond disparate cases (Lopez et al., 2019). We elaborate on these contributions in sequence next.

5.1. Organization design and dynamic capabilities for SBMI

Responding to emerging conceptual studies, highlighting the importance of investigating the underexplored link between organization design, dynamic capabilities and BMI (Fjeldstad and Snow, 2018; Teece, 2018), we empirically shed light on the intersections between these concepts and pose that organization design factors are important determinants for the existence of appropriate dynamic capabilities for SBMI.

In previous research, BMI barriers have been described broadly (Chesbrough, 2010), relating to the fact that BMI challenges the existing business model and its building blocks (Baden-Fuller and Haeflinger, 2013; Osterwalder and Pigneur, 2010). BMI may be seen as a threat to existing business as it challenges organizational structures, processes and assets (Amit and Zott, 2001; Chesbrough, 2010). Moreover, the BMI process is seen as unpredictable and iterative (Snihur and Wiklund, 2019). Because corporations have the tendency to perfect existing operations (Agarwal and Helfat, 2009; Teece, 2018), and exploiting current operations is more profitable in the short-run (March, 1991; Smith et al., 2010; Tushman & O'Reilly, 1996), such a focus comes at the expense of BMI. While SBMI seeks to incorporate deeply entrenched societal problems into core business practices, it is regarded as intrinsically more complex than conventional BMI, and requires corporations to adopt a different logic to succeed (Abdelkafi and Täuscher, 2016; Laasch, 2018; Sommer, 2012). As observed in our findings, this makes SBMI particularly vulnerable to the aforementioned barriers to BMI.

Notably, the literature on BMI identified some factors to overcome barriers to BMI. Organizational leadership, a clear vision, management support, organizational structure, incentives, resources and change processes were said to contribute to BMI (Chesbrough, 2010; Doz and Kosonen, 2010; Foss and Saebi, 2017; Teece, 2018). On top of this, for SBMI, a sustainability vision would be required, as well as performance management, metrics focused on sustainability, personal leadership, sustainability values and collaboration with stakeholders (Stubbs and Cocklin, 2008; Rauter et al., 2017). In a similar vein, the related fields of sustainable and social entrepreneurship also highlight the importance of a business purpose, identifying complementarities between social and commercial interests, and collaborating with a broad range of stakeholders for SBMI (Spieth et al., 2018).

More recently, Teece (2018) and Leih et al. (2015) have discussed various overlapping and new aspects of organization design, such as flexible organization (structures) and values, and how these might undermine or reinforce dynamic capabilities for BMI. A handful of studies also explicitly state the importance of dynamic capabilities for SBMI (Inigo et al., 2017; Pieroni et al., 2019), and call attention to a sustainability strategy and dedicated investment as important aspects of organization design that drive dynamic capabilities for corporate sustainability (Aragón-Correa and Sharma, 2003; Chakrabarty and Wang, 2012; Hart and Dowell, 2011). However, the literature on BMI, SBMI and corporate sustainability, do not provide a thorough understanding of how aspects of organization design hinder or enable the identification and assessment of opportunities for SBMI; the mobilization of resources to address opportunities for SBMI and how corporations can extract value from these; and the transformation of business models, as dynamic capabilities for the purpose of SBMI.

In a similar vein, related fields of organizational ambidexterity (e.g. Gibson and Birkinshaw, 2004; Tushman and O'Reilly, 1996), corporate entrepreneurship (e.g. Burgelman, 1983; Hornsby et al., 2002; Kuratko et al., 2017) and sustainability-oriented innovation (e.g. Adams et al., 2016; Eccles et al., 2014; Geradts and Bocken, 2019; Ramus, 2002) have addressed organizational barriers to corporate (sustainability-oriented) innovation and how to overcome these by pinpointing the role of leadership, structure, processes, systems, and people. While such studies look at similar issues to sensing, seizing, and transforming needed for (S)BMI (Teece, 2018), there are ample opportunities to tease out these relationships further through the lens of dynamic capabilities.

Building on rich empirical data, the present study identified organization design factors that hinder or enable dynamic capabilities for SBMI and how organizations might be designed more appropriately to also shape cognitive capabilities (e.g. changes in perception and reasoning) of its managers that underpin such dynamic capabilities for SBMI (Helfat and Peteraf, 2015). Notably, our results echo

and extend previous studies on SBMI from two corporate cases (Stubbs and Cocklin, 2008) and smaller Austrian companies (Rauter et al., 2017) that emphasize a need for MNCs to consider a broad range of stakeholders, rather than solely focusing on shareholders, and to rethink their business purpose by taking a systemic view on doing business. As detailed in our study, doing so would allow MNCs to move beyond perceived trade-offs between shareholder and stakeholder value, and enables MNCs to align internal and external stakeholders interests and build more sustainable value propositions when organizing themselves accordingly (Bocken et al., 2013; Boons and Lüdeke-Freund, 2013; Freudenreich et al., 2019). While our findings also show some overlap with drivers to SBMI in the context of sustainable and social entrepreneurship (e.g. Parrish, 2010; Spieth et al., 2018), our study complements this body of work by unveiling barriers and drivers to SBMI in a setting where MNCs innovate their business model for sustainability as opposed to a setting where organizations implement business models to achieve sustainability (Laasch and Pinkse, 2019). Because MNCs are bound by their statutes to answer to shareholders and their performance is publicly exposed to the financial market, we find that barriers at the three levels – starting with the institutional barrier of maximizing shareholder value – co-exist with the various positive drivers, so there is no simple ‘band-aid’ to remove institutionalized barriers. By identifying detailed aspects of the organization design, and linking them to dynamic capabilities of sensing, seizing and transforming needed for SBMI, we provide a holistic understanding into how key barriers and drivers manifest themselves in corporations, so they can be acted upon by management.

5.2. Multi-level organization design factors

Advancing conceptual work by Slawinski et al. (2017) who introduced a multi-level framework for organizational inaction to sustainability issues, our findings provide a detailed and comprehensive overview of how interconnected factors for an organization design conducive to dynamic capabilities for SBMI operate and trickle down from an institutional, to a strategic and operational level. For example, maximizing shareholder value and short-termism at the institutional level fosters a dominant focus on exploitation at the strategic level, and translates into a short-term incentive system that inhibits dynamic capabilities for SBMI at the operational level. Conversely, balancing shareholder and stakeholder value at the institutional level may foster a strategic focus on SBMI, and translate into performance metrics for sustainability that enable dynamic capabilities for SBMI at the operational level. Importantly, each identified factor of organization design in the shape of institutionalized rules, norms, and beliefs, strategic actions or operational practices, inhibits or enables sensing, seizing, and transforming for SBMI.

By introducing a multi-level framework, this study leads us to a deeper understanding of organization design. While often understood as a constellation of strategy, skills, structure, systems, and staff (Burton et al., 2006), an expanded theoretical model of organization design includes management philosophy – the values, beliefs, and assumptions that underlie and guide leadership and decision-making (Miles and Snow, 1978; Miles and Creed, 1995). Similar to research on sustainable and social entrepreneurship (Parrish, 2010; Spieth et al., 2018) and sustainable business models (Stubbs and Cocklin, 2008), we find that a philosophy based on balancing shareholder and stakeholder value is particularly important for SBMI in a corporate context (Freudenreich et al., 2019). Our study suggests that management philosophy is not only carried at the institutional level of rules, norms and beliefs of what a typical organization should do and be. It also trickles down to the strategic and operational levels. A management philosophy thus determines the strategy, and through this, the supporting processes and systems at the operational levels. In this way, drivers to SBMI are different from BMI, where the starting point is a shareholder orientation. To advance SBMI, a balanced focus on shareholder and stakeholder value is ideally carried through all aspects of the organization – from strategy, to structure, processes, incentives, and people – to break through the ‘dominant corporate logic’ (Sommer, 2012), focused on shareholder value, uncertainty avoidance and short-termism at the institutional level, affecting the strategic and operational levels.

Notably, no differences in factors for organization design between corporations in various industries were identified in our study, so the institutional, strategic and operational barriers and drivers may be regarded as common across our sample. While our findings allude to factors in organization design that find their origin in institutional barriers and drivers to SBMI, recent work by Laasch (2019) calls attention to external conditions under which corporations adapt their dominant logic. By contextualizing SBMI, the authors describe how institutional barriers and drivers to SBMI may be shaped by (diverging) demands of a corporation's most salient stakeholders, and how their perceived legitimacy of SBMI determines whether corporations embed responsibility and sustainability in their business models. The organization design and dynamic capabilities perspective in our study provides a complementary viewpoint on how the necessary dynamic capabilities to SBMI are built through factors of organization design, suggesting a pathway forward for companies that are either pressured or discretionary willing to embed sustainability into their business models.

5.3. Contributions to SBMI literature

Lastly, we also contribute to the dispersed literature on SBMI, which has a diversity of individual case studies, but is in need for theory-advancing comprehensive studies (Dentchev et al., 2018; Lopez et al., 2019). By building on a comprehensive empirical data set from interviews with middle, senior and top-level management involved in overseeing and/or pursuing SBMI, we identified an exhaustive set of barriers and drivers at the organizational design level that contribute to dynamic capabilities for SBMI. These factors, as well as the multiple levels of barriers and drivers provide insight into why SBMI to date may have failed and how dynamic capabilities for SBMI be built, through conducive organization designs. As such, this study addresses the need for more empirical research in established organizations and the call for guidance for corporate management on how to innovate business models towards greater levels of sustainability (Foss and Saebi, 2017).

5.4. Implications for practitioners and future research directions

Our findings seek to give guidance to practitioners aiming to redesign their organizations to support SBMI (Foss and Saebi, 2017). By presenting a comprehensive overview of factors at the institutional, strategic and operational levels, we give insight on how important barriers can be broken-through via solutions in organizational design at these three levels. Because initiatives for SBMI are likely to fail when corporations are not organized accordingly, our findings can help corporations in their quest to realize societal betterment while improving company performance. Importantly, drivers do not replace barriers – they co-exist and evolve over time. As logics of companies progressively change towards sustainability, so must organization design factors to deliver on their objectives.

Critically, our findings do not account for actual outcomes of the SBMI process. We suggest future research to focus on the extent to which an organization design conducive to dynamic capabilities for SBMI leads to financial, environmental and social benefits. Moreover, our findings do not yet assess the extent to which barriers and drivers are impeding or enabling SBMI. Future research may contribute by assessing the importance of each of these barriers and drivers. Because the field of SBMI is still in the exploration phase, there is a general need for further quantitative studies that test findings from earlier exploratory studies such as the study at hand, to advance the field and allow it to mature further.

As a second avenue for future research, we suggest studies to address whether certain factors of organization design identified in this study are more important to some types of SBMI than others. While research suggest that different types of sustainability strategies require different capabilities to create value in different ways (Aragón-Correa and Sharma, 2003; Hart, 1995), factors in organization design are likely to play a different role depending on which strategy is adopted and what type of capabilities are needed. Moreover, according to Laasch (2019), pressure by salient stakeholders on corporations seeking to engage in SBMI, differs per sector and translates into varying degrees of embedding responsibility and sustainability into their business models. As such, future research may also address what factors in organization design explain distinct (non-)embedding responses by corporations.

Lastly, our findings did not provide a basis to differentiate between industries with regard to factors in organization design that affect dynamic capabilities needed for SBMI. Research by Hacklin et al. (2018) suggests that value migration – those shifts in value-creating forces typically resulting from the move from old business models to new ones to meet changing customer needs – is more prevalent in certain industries than others and therefore affects the extent to which firms in various industries would engage in BMI. While industries may be confronted with sustainability challenges to varying degrees, we suggest future research into the organization design factors per industry, and whether these depend on the degree of value migration in relation to sustainability. To this end, we view the present study on SBMI, organization design and dynamic capabilities as a fruitful source for future research to guide companies in their transitions towards achieving greater levels of sustainability, and as a means to support business practice towards sustainability.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.lrp.2019.101950>.

Appendix Overview of Sustainable Business Model Innovations

Company	Interviewee	Sustainable Business Model Initiatives	Sustainable Business Model Archetype
AkzoNobel	Corporate Director Sustainability (Top Manager)	Collaborative partnership “Human Cities Coalition” to develop impoverished areas Durable packing for coatings Recycling projects	Repurpose for Society/Environment Maximize material and energy efficiency Creating value from waste
	RD&I Director Specialty Chemicals (Senior Manager)	Anti-fouling coating for ships Bio-based raw materials for production	Maximize material and energy efficiency Substitute with renewables and natural processes
	Director Commercial Excellence Specialty Chemicals (Senior Manager)	Coatings with health benefits in hospitals Coatings to improve the air quality Fire resistant coatings	Maximize material and energy efficiency Maximize material and energy efficiency Maximize material and energy efficiency
	R&D Director Decorative Paints (Senior Manager)	Paint recycling Anti-fouling coating for ships Coatings to improve CO ₂ reduction	Creating value from waste Maximize material and energy efficiency Maximize material and energy efficiency

Interface	Global Sustainability Director Decorative Paints (Mid-level Manager)	Paint recycling	Creating value from waste
	Global Sustainability Director Decorative Coatings (Mid-level Manager)	Paint recycling	Creating value from waste
	Director Sales & Marketing, RD&I, Commercial Excellence (Mid-level Manager)	Paper recycling Coatings to improve CO ₂ reduction Bio-based raw materials for production	Creating value from waste Maximize material and energy efficiency Substitute with renewables and natural processes
	Manager Bleaching Applications RD&I (Mid-level Manager)	Reducing water usage in production processes	Maximize material and energy efficiency
	Sustainability Director UK/Ireland (Mid-level Manager)	Paint recycling Eco-efficiency programs for products	Creating value from waste Maximize material and energy efficiency
	President/CEO EMEA - SVP (Top Manager)	Recycling efforts by the company Bio-materials for production CO ₂ reduction efforts by the company Reduction of oil usage in production Circular economy carpet tile lease model Using idol capacity of an external partner Factory operated by social workers Recycling of dumped fishing nets for reproduction through local communities Creating tiles with 70% less material	Creating value from waste Maximize material and energy efficiency Creating value from waste Substitute with renewables and natural processes Maximize material and energy efficiency Maximize material and energy efficiency Creating value from waste Create value from waste Adopt a stewardship role Repurpose for society/environment
	Sustainability director (Senior Manager)	Recycling of dumped fishing nets for reproduction through local communities Recycling efforts by the company Reduction of oil usage in production Life-cycle assessments and product declarations for each product	Maximize material and energy efficiency Repurpose for society/environment Creating value from waste Maximize material and energy efficiency Adopt a stewardship role
	Innovations Director (Senior Manager)	Recycling of dumped fishing nets for reproduction through local communities	Repurpose for society/environment
	Director of Sustainability Strategy (Senior Manager)	Zero landfill project for donating carpet waste to primary schools for art projects Recycling of dumped fishing nets for reproduction through local communities Carpet reclamation and reuse programs Donating carpets	Repurpose for society/environment Repurpose for society/environment Create value from waste Repurpose for society/environment
	Head of Sustainable Development (Mid-level Manager)	Biomimicry CO ₂ reduction efforts for Mission Zero Creating test samples with technology instead of physically producing them NASA technology used to reduce waste Changing to bio-gas even though its more expensive The creation of a new recycling factory Proactively hiring social workers Closed water system for production Recycling of dumped fishing nets for reproduction through local communities Switching to LED lighting on sights Using 100% renewable energy on sights Re-claim and recycling packaging Carpet reclamation and reuse programs Efforts to expand life-time of carpets through service models Recycling yarn	Substitute with renewables and natural processes Substitute with renewables and natural processes Maximize material and energy efficiency Maximize material and energy efficiency Substitute with renewables and natural processes Create value from waste Repurpose for society/environment Create value from waste Repurpose for society/environment Maximize material and energy efficiency Maximize material and energy efficiency Create value from waste Create value from waste Deliver functionality rather than ownership Create value from waste
	Technical Support Manager (Mid-level Manager)		
	Concept Designer (Mid-level Manager)		
	Distribution Manager (Mid-level Manager)	Carpet reclamation and reuse programs	Create value from waste
	Account Manager (Mid-level manager)	Re-claim and recycling packaging	Create value from waste
	Vice-president Global Head Health Economics and Market Access (Senior Manager)	Introducing mental healthcare assessment products for Sub-Saharan Africa Tuberculosis and HIV product development for the base of the pyramid	Repurpose for society/environment Repurpose for society/environment

	Vice-president Global Medical Affairs (<i>Senior Manager</i>)	Introducing mental healthcare assessment products for Sub-Saharan Africa Experimenting with prevention based healthcare models instead of treatment Funding grass-root partnerships to combat AIDS, worms, tuberculosis in Africa A funding platform to facilitate crowdfunding for healthcare projects	Repurpose for society/environment Encourage sufficiency Repurpose for society/environment Develop scale up solutions
	Executive Director Corporate Citizenship & Community Relations (<i>Senior Manager</i>)	Creating affordable medicine for low-income consumers	Repurpose for society/environment
	Head of JLABS (<i>Senior Manager</i>)	Donating surgery material Open innovation space to collaborate with start-ups	Repurpose for society/environment Develop scale-up solutions
	Senior Director Sustainability and Engagement (<i>Senior Manager</i>)	Global Public Health as a dedicated division for developing products and services for underserved markets Materiality assessment with stakeholders to drive internal sustainability targets	Repurpose for society/environment Adopt a stewardship role
	Senior Director (<i>Senior Manager</i>)	Creating affordable treatment to communicable diseases for low-income consumers Producing sanitary napkins with banana leaf fibers that are cheaper and eco-friendly	Repurpose for society/environment Repurpose for society/environment
	Senior Director Neuroscience (<i>Senior Manager</i>)	Digital mental healthcare applications to offer treatment in Sub-Saharan Africa	Repurpose for society/environment
	Director Worldwide Corporate Contributions (<i>Mid-level Manager</i>)	Producing sanitary napkins from banana leaf fibers that are cheaper and eco-friendly	Repurpose for society/environment
	Associate Director Global Public Health (<i>Mid-level Manager</i>)	Using sterilization of HIV products to better inform and educate customers at the BoP	Adopting a stewardship role
	Project manager (<i>Mid-level Manager</i>)	Digital mental healthcare applications to offer treatment in Sub-Saharan Africa Accountability for clinicaltrials.gov to provide real-time updates on health implementers to show whether they meet expectations	Repurpose for society/environment Adopt a stewardship role
Pearson	Executive Director South Africa (<i>Senior Manager</i>)	Educating under skilled youth to be able to place them within companies, whereby moving into the recruitment business	Repurpose for society/environment
	Managing Director South Africa (<i>Senior Manager</i>)		
	Managing Director China (<i>Senior Manager</i>)	Teaching English through apps to those living in rural areas who cannot afford education	Repurpose for society/environment
	Director Social Innovation (<i>Senior Manager</i>)	Providing education to refugees through apps Teaching English through apps to those living in rural areas who cannot afford education	Repurpose for society/environment Repurpose for society/environment
	Head of Learning Innovation (<i>Mid-level manager</i>)	Teaching English through apps to those living in rural areas who cannot afford education Educating under skilled youth to be able to place them within companies	Repurpose for society/environment Repurpose for society/environment
		Creating affordable learning programs for low-income consumers in South Africa	Repurpose for society/environment
Philips	Senior Editor (<i>Mid-level Manager</i>)	Teaching English through apps to those living in rural areas who cannot afford education	Repurpose for society/environment
	Manager Portfolio Strategy & Planning (<i>Mid-level Manager</i>)	Providing education to refugees through apps	Repurpose for society/environment
	Chief Executive Officer (<i>Top manager</i>)	Circular pay-per-lux model Small scale hospital service to provide primary healthcare for the base of the pyramid Circular business model for capital equipment goods	Deliver functionality rather than ownership Repurpose for society/environment Create value from waste
		Modular design of products	Encourage sufficiency
		Reducing energy requirements for production	Maximize material and energy efficiency
		Recycling plastic in production process	Create value from waste
	Global Head Sustainability (<i>Top manager</i>)	Circular pay-per-lux model Focus on sustainable product development Sustainable sourcing	Deliver functionality rather than ownership Maximize material and energy efficiency
		Breast cancer screening program in Middle-East	Adopt a stewardship role

	Chief HR Officer (Top manager)	Clean cook stoves for the base of the pyramid Baby feeding products for mother/childcare for the base of the pyramid	Repurpose for society/environment Repurpose for society/environment
	General Managers Philips Lighting West Africa (Senior Manager)	Circular pay-per-lux model	Deliver functionality rather than ownership
	CEO Philips Lighting Benelux (Senior Manager)	Energy reduction in lighting solutions Circular pay-per-lux model Armatures from bamboo instead of aluminum	Maximize material and energy efficiency Deliver functionality rather than ownership Substitute with renewables and natural processes
	Innovation Program Manager Healthcare (Senior Manager)	Refurbishment efforts Developing technology to detect malaria Cheap solar lighting for the base of the pyramid Small scale hospital service to provide primary healthcare for the base of the pyramid Focus on sustainable product development	Creating value from waste Repurpose for society/environment Repurpose for society/environment Repurpose for society/environment
	Global Business Leader Installed Base (Senior Manager)	Refurbishment efforts	Maximize material and energy efficiency Creating value from waste
	Product Configuration Manager (Mid-level Manager)	Refurbishment efforts Contracting agency of a service to separate material which can be recycled	Creating value from waste Creating value from waste
	Senior Scientist Philips Research (Mid-level Manager)	Recycling Sustainability companion to educate people about sustainability devices	Creating value from waste Encourage sufficiency
	Development Engineer (Mid-level Manager)	Developing a score card to benchmark Philips products on circularity	Adopt a stewardship role
	Research Scientist (Mid-level Manager)	Cheap solar lighting for the base of the pyramid Small scale hospital service to provide primary healthcare for the base of the pyramid	Repurpose for society/environment Repurpose for society/environment
Unilever	President North America/Executive Board (Top Manager)	Urban farming program in New York. Providing rural communities with access to water for the base of the pyramid.	Repurpose for society/environment Repurpose for society/environment
	Vice-President Sustainable Business and Communication (Senior Manager)	Black lives matter campaign for Ben and Jerry's Sustainable fishing.	Adopting a stewardship role Adopting a stewardship role
	Chief Sustainability Officer (Top Manager)	Developing software to get the right food to the right Foodbank in London	Repurpose for society/environment
	Vice-president Surf (Senior Manager)	Reducing water waste in production Providing rural communities with access to water at the base of the pyramid	Maximize material and energy efficiency Repurpose for society/environment
	Global Vice-President Partnerships (Senior Manager)	Providing clean cookstoves for the base of the pyramid. Micro-franchise farming	Repurpose for society/environment Repurpose for society/environment
	R&D Program Director (Mid-level manager)	Empowering women at the base of the pyramid by providing low-cost laundry devices	Repurpose for society/environment
	HR Manager (Mid-level manager)	Empowering women to speak up when being abused	Adopting a stewardship role
	Director Sustainability BENELUX (Mid-level manager)	Developing nutritious foods for refugees. Sustainable packaging	Repurpose for society/environment Maximize material and energy efficiency
	Sustainability Manager (Mid-level manager)		
	R&D Manager (Mid-level manager)	Empowering women at the base of the pyramid by providing low-cost laundry devices	Repurpose for society/environment

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