Relational Leadership for Strategic Sustainability: Practices and Capabilities to Advance the
Design and Assessment of Sustainable Business Models

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Abstract:

In this paper we explore the role of leadership in enabling and accelerating the impact of strategic sustainability initiatives. We do this by first identifying the central integration challenges that strategic sustainability presents through an examination of the five levels of the Framework for Strategic Sustainable Development (FSSD). We describe the importance of relational leadership for strategic sustainability, or the ongoing process of meaning making and reflection within a nested system of the biosphere and society, for understanding how leadership might address the relational tensions that continuously present themselves from this central challenge of integration. The primary contribution of this paper is that we have developed a conceptual model of relational leadership for strategic sustainability, grounded in practice, which describes specific practices and capabilities to support the FSSD in achieving its transformational potential. A secondary and related contribution is that we have examined two innovations advancing strategic sustainable organization management, the Strongly Sustainable Business Model Canvas and the Future-Fit Business Benchmark, to consider how they embody relational leadership for sustainability, and how these practices and capabilities help to support and measure success in the FSSD.

Keywords:

strategic sustainability; relational leadership; integration; strongly sustainable business model canvas; future-fit business benchmark
“As long as societal structures do not prevent unsustainable system behavior, increasing pollution and decreasing economic accessibility of natural resources will represent the walls of a funnel and function as systematically harsher constraints on human activities.”

(Robèrt et al., 2013: 2)

1. Introduction

Unprecedented human pressures are tightening the constraints within which societies and organizations operate by invoking rapid and fundamental transformations in the natural systems on which humans depend (Worldwatch, 2014). Population growth, growing water scarcity, threats to food security, diminishing fossil energy resources, and a changing climate are converging and interacting to form a complex, interrelated amalgam of problems: food production and water procurement demand intensive energy inputs; the vast majority of our energy derives from carbon sources whose emissions affect global climate; changes in climate impact food and water security; all of these are further stressed by a burgeoning global human population. Such complex problems can only be confronted through collective transdisciplinary approaches (Lang et al., 2012; Mauser et al., 2013): multi-sector (involving governments, business and civil society), multi-level (local to global), and multi-disciplinary (bringing all relevant social and scientific academic knowledge to bear on the problem definition and solution). However, the important role for leadership in collective transdisciplinary approaches to sustainability has not been adequately examined. While many understand leadership in a colloquial sense – i.e. there is an urgent situation and leaders out there need to do something –
exactly how leaders might best function to catalyze systemic change to address these transdisciplinary issues is not well understood (Crosby and Bryson, 2005).

Within the realm of strategic approaches to sustainability, the Framework for Strategic Sustainable Development (FSSD) offers a comprehensive approach to dealing with the systemic nature of the problems faced (Broman and Robèrt, 2015; Robèrt et al., 2013). The relationship between the FSSD and the Planetary Boundary Approach (PBA) has recently been explored to identify potential synergies between these approaches. The FSSD is an operational framework that defines robust sustainability principles, whereas the PBA (Griggs et al., 2013; Rockstrom et al., 2009a, b; Steffen et al., 2015; Whiteman et al., 2013) categorizes some essential impacts that have occurred from the violation of these principles. The PBA explores how and when the safe operating space for humanity will be compromised if humans continue to disregard these principles, thus defining ‘the planetary boundaries’. From the FSSD/PBA relationship follows a close-at-hand way of using the two concepts in combination. While the FSSD helps us in outlining challenges, opportunities and prioritized steps towards compliance with the sustainability principles, the PBA concept can be used to inform our priorities in this FSSD process; the more a planetary boundary has already been exceeded, the higher the priority of consequent actions to remove the organization’s contribution to that problem. By combining the sustainability principles and strategic guidelines of the FSSD with the global scale sustainability indicators and tipping points of the PBA, some weaknesses of the PBA may be overcome (Robèrt et al., 2013). One such shortcoming identified by Robèrt et al. (2013) is that the PBA does not automatically lead individual sectors or organizations to transform their current approach, and that the FSSD enables such activity by highlighting the risks and rewards
that will accrue to enterprises that choose to contribute to global solutions rather than to exacerbate problems. However, despite this business case for enlightened self-interest, uptake of strategic sustainability initiatives is still relatively slow and incremental in nature compared to the mounting urgency of the problems we face. In this paper we contend that it is possible to accelerate and magnify the impact of the strategic sustainability approach by more fully articulating the role of leadership in the FSSD, thus enabling the kind of transformative action that the model indicates is possible. Here we take ‘strategic sustainability’ to mean intention and action that is understood to be fully contextualized and embedded within ecological, social and economic dimensions (Marcus et al., 2010), and is strongly vs. weakly defined (Daly and Cobb, 1989). We elaborate further on these ideas in the paper.

We suggest that the key leadership challenge for sustainability can be understood as one of integration (Lang et al. 2012; Mauser et al., 2013, van Kerkhoff, 2014) – the continuous alignment of multi-stakeholder intention and action with social and ecological imperatives and constraints – and that addressing this challenge requires an ongoing process of reflective practice and collective meaning making among relevant social actors. Relational leadership (Uhl-Bien and Ospina, 2012a) is an emerging construct in the organizational literature that offers potential for us to envision how we might navigate the relational tensions that continuously arise from this central challenge of integration. Relational leadership reflects a move away from viewing leadership at the individual level as a trait or a behaviour, toward understanding leadership as a “collective capacity” (Day, 2000; Drath, 2001) created in the interactions and relationships among people (Uhl-Bien and Ospina, 2012b). The purpose of this article is to conceptually develop the leadership practices and capabilities that comprise
relational leadership for sustainability within the context of the five levels of the FSSD/PBA (henceforth called only FSSD, with the understanding that the limits imposed by the Planetary Boundaries Approach are incorporated in the more contemporary iteration of the FSSD).

We do so as follows: first, we will provide a brief overview of the FSSD, describing the specific leadership integration challenges related this framework. We will introduce the phenomenon of relational leadership and will establish the conceptual relevance of this leadership approach for advancing strategic sustainability. Second, we will build a robust understanding of the essential elements of relational leadership for strategic sustainability, establishing the practical significance of this approach. We will do this by drawing insights from the leadership challenges and opportunities experienced by practitioners involved in two emerging strategic sustainability management innovations, both consistent with the FSSD, that together comprise strategic sustainable organization management: the Strongly Sustainable Business Model Canvas (SSBMC), whose proponents are seeking a more integrative approach to business model generation; and the Future-Fit Business Benchmark (F2B2) management tool which articulates a more integrative approach to establishing organizational assessment processes focused on enhancing sustainability. We have selected these initiatives because their focus is on integration and thus they help to reveal the importance of relational leadership in their implementation, and to articulate the attendant integration challenges in strategic sustainability efforts. Further, they both address those social structures with the greatest impact on (un-)sustainable development: business organizations. Both SSBMC and F2B2 build on systemic, multi-level and multi-disciplinary approaches to organizational development, offering rich interlinks to the FSSD. The purpose of considering these innovations is twofold;
the first informs our development of a conceptual model of relational leadership for strategic sustainability by surfacing leadership challenges in practice, and the second helps us to understand how we might further support and measure success in the FSSD. We will identify relational leadership processes that support strongly sustainable organization management, helping both to guide organizations in effectively addressing existing constraints and also to avoid contributing to the tightening of future limits of the biosphere. Third, we will then reflect on how practical insights from this example of relational leadership for strategic sustainability could translate specifically to the FSSD, and we will conceptually develop the relational leadership practices and capabilities that are useful for advancing transformation in this framework. Finally, we will briefly consider the implications of this paper for future research and practice in the area of relational leadership for strategic sustainability and strategic sustainable development.

2. Role for leadership to advance strategic sustainable development in the FSSD

2.1 Brief overview of the FSSD

The integrated model of the FSSD and PBA builds on the basic structure of the five level FSSD: systems, success, strategic guidelines, actions and tools. This revised framework creates synergies between the two approaches: the FSSD offers basic social and environmental principles for sustainability and guidance for how to strategically and systematically apply them, while the Planetary Boundaries Approach defines the “safe operating space for humanity” (Rockström et al., 2009b) by identifying metrics along nine boundary areas that will preserve conditions for human thriving. The nine boundary areas are assumed to be interdependent,
compounding the risk of non-linear change, and three of the seven boundaries (climate, biodiversity loss, and changes to the nitrogen cycle) are estimated to have been already transgressed (Steffen et al., 2015). Combining the FSSD and PBA enables the articulation of boundary metrics, along with the forces that move the system toward those boundaries and specification of the strategic guidelines for planning and decision making. In this way, the FSSD is presented as a framework that will support strategic action across multiple scales, disciplines and sectors.

The FSSD is a powerful approach that has been refined and tested for 20 years through an ongoing consensus and peer review process involving scientists and leaders from business and government (Missimer et al., 2014). In creating this combined framework, Robèrt et al. (2013) described the need for strategic leadership and innovation, as it is essential for a strategic approach to move away from a firm or sector focus to offer both guidance and incentives for cooperation at the societal level i.e. through value chains/networks at the firm, regional and national level. While we agree that the combined framework provides a vehicle for such integrated activity, we contend there is a critical role for leadership in helping to fully realize this potential: specific leadership challenges present themselves in this framework and these require particular leadership practices and capabilities for their resolution. In the FSSD, this integration needs to happen both within each level of the framework and across the model.

2.2 Leadership integration challenges across the framework

Sustainability challenges are highly complex in nature, with deep interdependencies among ecological, social and economic factors. To confront such complexity, research movements in
sustainability science are increasingly moving toward identifying and addressing challenges of integration. Lang et al. (2012) highlight the need for transdisciplinary approaches integrating science and social practice. Mauser et al. (2013) identify three key dimensions of integration (international, sectoral, and scientific) required to advance transdisciplinary research programs in sustainability. Similar challenges of integration occur in connecting the work of organizations to global impacts of human activity. The FSSD articulates a hierarchy of logic in strategic sustainability moving from more abstract conceptions (system level) to more concrete actions (tools), with the aim of integrating organizational actions to global outcomes. However, as with research in sustainability science, the key challenges in organizations lie in integrating concepts with practice. Moving from organization-centric efforts of stakeholder management (i.e. managing stakeholders in the best interest of the firm) toward managing for stakeholders (i.e. meeting the interests of various groups by identifying synergies or tending to trade-offs), toward ultimately managing for sustainability (i.e. focusing on how organizations can positively address sustainability issues) requires a focus on creating the integral commons (Kurucz et al., 2008) or the intersection at which stakeholder interests and capabilities can interact to address wicked problems together. Mauser et al. (2013), in their comprehensive framework informed by a ten year global sustainability research initiative ‘Future Earth’, classify these challenges along three different dimensions of integration: international, sectoral and scientific, and argue that such integration involves an ongoing process of multi-stakeholder reflection. In the FSSD, these challenges of integration can be understood as opportunities for leadership to play a more clearly defined role in advancing strategic sustainability in organizations. Due to the holistic nature of the framework, these various integration issues are not exclusive to one
particular level of the FSSD process. However, we suggest that it is useful to consider how certain aspects of integration become more salient at different stages in the work of the FSSD in order to understand what the focus of leaders’ efforts should be at various levels of the process. Specifically, we will consider how international, sectoral and scientific integration challenges that are most prominent at levels 1-3 require leaders to direct their reflective practice toward ‘conceptualizing’, while horizontal and vertical integration challenges that present themselves most clearly at levels 4-5 necessitate meaning making toward ‘operationalizing’ (see Table 1).

Table 1: Central Integration Challenges for Leadership in the FSSD

[Insert Table 1 here]

Level 1 (system) describes how the system functions overall, including relationships between human practices and ecological parameters. Only by assuming full rationality would this imperative provided by the global system be self-evident and motivating. However, research in organizational behaviour has established that humans actually exhibit bounded rationality (Simon, 1957), or the idea that, in practice, decision makers do not have full information or the competence and capacity to make sense of the amount of information that is available (Hodgkinson and Starbuck, 2008). Senge (1990) describes the ‘reflexive loop’, a process where humans select the data that will support their beliefs and their intended course of action, rather than rationally factoring in all information to make an optimal decision for the system. The critical role for leadership at this level is to encourage the introduction and reflective consideration of deeper contextual information (ecological, social, cultural, geographic) into the
field of salience for collective meaning making: helping to develop a ‘biosphere consciousness’ (Rifkin, 2009). At Level 2 (success), the primary objective of the framework is identified, namely success within sustainability. The role for leadership here is in helping to establish social, environmental and economic principles that need to be observed in practice in order to support the Level 1 system. Robèrt et al. (2013) suggest that the success level principles must make sense for stakeholders and enable collaboration and cooperation and guidance for problem solving, among other things. At this level in the framework the work of leadership is cross-sectoral, to co-create meanings in sustainability that will integrate various stakeholder values and interests – across value chains, with investors, and with community members and policy makers. At Level 3 (strategic guidelines), steps are specified to ensure that financial, social and ecological resources are able to support the process undertaken – these are the principles of sustainable development that will allow for a process that meets the principles of sustainability articulated in Level 2. At this level it is recommended that the role of management is to understand and communicate the importance of these principles to the employees and that a four step strategy of sharing the framework, looking at today’s situation, thinking of tomorrow, and designing a strategic program (Robèrt, 2000) will assist with realizing sustainable development. In addition to facilitating this communication and engaging in this visioning and design, the role of leadership at this level needs to be focused on translating the valuation and incorporation of different disciplinary forms of knowledge that begins at Level 1, into the articulation of these strategic guidelines at Level 3. In Level 4 (actions) there is a description in concrete terms of what activities will support and realize the strategic guidelines developed in Level 3. Robèrt et al. describe how strategic guidelines are used to “inspire, inform and
scrutinize” (2013: 3) the various actions that comprise a strategic plan. The contribution that leadership can make here is one of horizontal integration, where the leader can scan across the possible range of activities and select and prioritize a related suite of actions. The horizontal relationship between activities is important here to seek synergies rather than trade-offs. Stakeholder theory acknowledges that while there will always be trade-offs between stakeholders, it is important to never trade off one stakeholder’s interests against another’s continuously over time and to also seek opportunities for synergies in value creation: however, if managers are looking for trade-offs, then that is all they will find (Freeman et al., 2010). Level 5 (tools) includes concepts, methods and tools that support the realization of the previous four levels of the model. Robèrt et al. (2013) describe how the tools must support the actions (Level 4) and help with their strategic selection (Level 3) so that the purpose of success may be realized (Level 2) in the context of the systemic imperatives (Level 1). The challenge for leaders here then is one of vertical integration or ensuring alignment between the tools and systemic level ‘rules’ by focusing the efforts of others on achieving both efficiency and effectiveness with these tools.

2.3 Reflective practice: Meeting the leadership integration challenges

Attending to relationships across the levels of the FSSD requires a process of meaning making and reflection that can be captured in the idea of ‘reflective practice’. Reflective practice is a process of stepping back to reflect on events that have taken place in order to better understand the underlying assumptions and meanings of various activities and develop an improved basis for future actions (Raelin, 2002). This process helps the leader to understand
more fully the connections among things (Hedberg, 2009) and thus is important for addressing the challenges of integration identified above. Important leadership capabilities for reflective practice include both self-reflection and critical reflection (Cunliffe, 2009) and these are essential management skills for understanding complex issues of sustainability (Kurucz et al., 2014). Self-reflection focuses on understanding our own values and assumptions and critical reflection focuses on deeply questioning assumptions in the global context. In the FSSD, levels 1-3 involve reflective practice that is focused on conceptualizing: identifying the specific system level social/ecological principles, defining the social and ecological sustainability principles and creating the strategic guidelines that will enable sustainable development. Levels 4-5 require a reflective practice process focused on operationalizing the system and strategic guidelines articulated above. Reflective practice toward sustainability relies on a process of continual meaning making and reflection between stakeholders from multiple sectors, disciplines and levels in the system (Calton and Payne, 2003; Kurucz et al., 2013) and thus can be understood as a process to integrate both within and across levels of the FSSD. Reflective practice is core to the idea of relational leadership.

2.4 Relational leadership: The relevance to strategic sustainable development

Relational leadership has been described as an ‘umbrella term’ that groups together approaches that focus on leadership as relationships that are co-produced with others, in both formal and informal leadership contexts and roles (Shamir, 2012). Social construction and joint meaning making form the basis for leadership processes and these processes are viewed as nested in a cultural, historical and organizational context. Relational leadership activities have
been described as those that “generally enable groups of people to work together in meaningful ways” (Day, 2000: 582).

In this paper, we view relational leadership for strategic sustainability as an ongoing process of meaning making and reflection within a nested system of the biosphere and human society. Relational leadership for strategic sustainability offers potential for us to envision how leaders might navigate the relational tensions that continuously arise from the central challenge of integration within and between levels of the FSSD. In the next section we will engage with some examples of relational leadership for strategic sustainability in practice by considering the ‘strategic sustainability organizational management’ approach. We will identify relational leadership processes that are relevant for achieving transformation in strategic sustainability initiatives in practice, and will use these to inform our conceptual development of the specific leadership practices and capabilities essential for the FSSD.

3. Relational leadership in practice: Management innovations to support strategic sustainability

In the following, we introduce two ‘strongly sustainable’ management innovations designed to support sustainability in organizations, with a particular focus on the business sector. ‘Weak’ sustainability is built on the idea that manufactured or other capitals of equal value can take the place of natural capital whereas ‘strong’ sustainability proponents argue that at least critical portions of the existing stock of natural capital must be protected and improved because the functions it serves cannot be substituted by manufactured capital (Daly and Cobb, 1989; Victor et al., 1998). Organizations that pursue a sustainability vision are often criticized for taking an approach that represents ‘weak’ sustainability, focusing on incremental improvements to
operations and upholding the current status quo, understanding that the purpose of business is to focus on financial outcomes for shareholders with little regard to the environment or society (Kurucz et al., 2008). While incremental approaches may do well with a more traditional approach to leadership as planning, organizing, managing and controlling, more transformational approaches to sustainability require notably different leadership skills and capabilities to realize their more progressive (i.e. strongly sustainable) objectives (Kurucz et al., 2013).

Although both of these strongly sustainable international initiatives use somewhat different descriptions of business sustainability, ‘strong sustainability’ in the case of the Strongly Sustainable Business Model Canvas (Jones and Upward, 2014; Upward, 2013; Upward and Jones 2016) and ‘future fitness’ or ‘true sustainability’ in the case of the Future-Fit Business Benchmark (Kendall and Willard, 2015), both are informed by and aligned with the notion of ‘strategic sustainability’ as proposed under the FSSD. Hence both of these innovations are also compatible with the FSSD’s definition of success, i.e. to not violate the sustainability principles (e.g. Broman and Robèrt, 2015; Robèrt et al., 2013), and so we will use the FSSD’s conceptual language to describe these initiatives and the term ‘strategic sustainability’ to describe their shared goals. We propose that, due to this compatibility in objectives, by examining the role of leadership in these two examples of management innovations we will gain practical insight into the nature of leadership required to enable success in strategic sustainability initiatives, and thereby inform other general applications of the FSSD approach.
In order to validate why we would draw leadership insights from these examples, we will first explore specifically how each of these management innovations can support achieving and measuring success in strategic sustainable development. First, unlike most other tools in use in business today they explicitly build on and acknowledge central concepts of the FSSD, such as backcasting from future scenarios and strategic prioritizing of steps towards their realization (cf. Robèrt, 2000). Second these two management innovations are enabled and supported by leadership characteristics consistent with relational leadership for sustainability as previously described. In Section 4 we will further develop the implications of these insights for understanding relational leadership for strategic sustainability, identifying specific leadership practices and capabilities that can enhance the transformative potential of the FSSD, and thus help to advance strategic sustainability initiatives.

3.1 Overview of management innovations for strategic sustainability

The first management innovation we will look at is the Strongly Sustainable Business Model Canvas (SSBMC) and its proposal for new business modelling tools intended to help organizations of all kinds to identify opportunities for developing new and transforming existing business models in ways that increase the possibility for contributions to strategic sustainability. The SSBMC (Jones and Upward, 2014; Upward, 2013; Upward and Jones, 2016) demonstrates relational leadership characteristics that support business modelling toward strategic sustainability. The second initiative is the Future-Fit Business Benchmark (F2B2) (Kendall and Willard, 2015) which proposes a strategic sustainability assessment framework to overcome the perceived limitations of the methods currently used in sustainability reporting,
ratings, and standards. Therefore, the F2B2 suggests a ‘fourth benchmark’ which defines the ultimate goal of zero negative impact on the socio-ecological system and helps in defining and striving for organizational sustainability goals by engaging in a process of relational leadership. The F2B2 explicitly addresses businesses as its primary target group.

In summary, both of these management innovations support the application of concepts and principles of the FSSD when leaders engage in a relational approach: the SSBMC in the design of business models, the F2B2 in the measurement and evaluation of operating businesses (see Table 2).

| Table 2: Two Strategic Sustainability Management Innovations: Designing and Measuring Success in the FSSD |
|[Insert Table 2 here]|

These initiatives also have close relationships with each other in terms of the project teams driving them as well as their complementary methodical characteristics. They share some common features that fit with the FSSD, as summarized in Table 2, and also demonstrate characteristics of relational leadership described earlier. Taken together, the SSBMC and the F2B2 provide a framework for organizational development and assessment processes that support strategic sustainability as shown in Figure 1.

| Fig. 1: SSBMC and F2B2 as a framework for strategic sustainable organization management |
|[Insert Figure 1 here]|
3.2 Management innovation 1: The ‘Strongly Sustainable Business Model Canvas’ (SSBMC)

In the following, we identify the specific relational leadership processes that support the
development of strongly sustainable business model designs, structured according to the five
levels of the FSSD. To start with, the idea of strongly sustainable business models will be
introduced.

3.2.1 Strongly sustainable business models: An overview

The business model in general has been identified as a crucial lever of organizational and
business development. It captures the value creation rationale of a business organization, and
therefore the *sine qua non* of any entrepreneurial activity (e.g. Amit and Zott, 2012; Beattie and
Smith, 2013; Morris et al., 2005). Following Amit and Zott, the business model can be defined as
a conceptualization of the content, structure, and governance of the value creating transactions
between a focal firm and its exchange partners (Amit and Zott, 2001; Zott and Amit, 2008). The
major purpose of this concept is to describe how firms create, deliver, and capture value for
themselves, their partners and customers (Osterwalder et al., 2005). Therefore, business model
design, in its conventional form, aims at the creation of economic value through the exploration
and exploitation of market opportunities through strategically designed, competitive business
models (e.g. Chesbrough, 2010; Teece, 2010). However, this approach ignores a fundamental
downside: the possibility that natural, social, and economic value is destroyed outside of
business models’ conventionally defined scope (i.e. so called externalities and unintended
consequences occur). To factor in these externalities requires organizations to deliberately
define the goal of achieving strategic sustainability. In turn, this requires enhanced business
model methods and tools that overcome this fundamental limitation of conventional approaches to business modelling, by making specific adaptations and extensions that align these business models with sustainability objectives.

Growing research at the intersection of sustainability and business models tries to identify principles, tools, and practical examples that contribute positively to the development of the natural environment, human society, and economy (Bocken et al., 2014; Boons and Lüdeke-Freund, 2013; Schaltegger et al., 2012, 2016; Rauter et al., 2015; Wells, 2013). Two theoretical extremes can be imagined to guide the search for such business models: extremely exhaustive models that maximize a limited number of performance indicators while they use up their resource base in a locust-like manner (Elkington, 2004); and strongly sustainable models that make net positive contributions in all performance dimensions while they regenerate and maintain their resource base, comparable to honeybees.¹ Based on the idea of strong sustainability put forward in ecological economics and described above, a strongly sustainable business model can be defined as one that creates, delivers, and captures positive environmental, social, and economic value for all its stakeholders through its entire value network (Kendall and Willard, 2015), thereby “sustaining the possibility for human and other life to flourish on this planet forever” (Ehrenfeld, 2000:36). This objective is compatible with meeting the sustainability principles articulated in Level 2 of the FSSD.

To support such business models Upward (2013; Upward and Jones, 2016) developed the technical Strongly Sustainable Business Model Ontology (SSBMO) based on a systematic

¹ For a discussion of weak, balanced, and strong sustainability in the context of business-society relations see for example Steurer et al. (2005) and Marcus et al. (2010).
critique and extension of Osterwalder’s (2004) Business Model Ontology. In addition to the technical aspects of designing sustainable business models, motivational elements and drivers are also required to facilitate their adoption. The role of leaders in designing change processes to enable this uptake has been shown to be of particular importance (Rauter et al., 2015). To address this need, the SSBMO then informed the SSBMC, a collaborative and strategic leadership design tool (Jones and Upward, 2014; Upward and Jones, 2016). The SSBMC provides a common language to enable leaders taking a relational leadership approach to create more effective collaborations that generate and refine ideas about existing and new strategically sustainable business models. It suggests that the following major elements and their interrelations allow for complete business model descriptions that enable managers and stakeholders to sustain a business model with qualities consistent with ecological balance and social benefit with a high degree of reliability:

(1) Three boundary contexts (based on the embedded view on the global socio-ecological system; e.g. Griggs et al., 2013; Marcus et al., 2010; Robèrt et al., 2013; Rockström et al., 2009b): i) environment (physical, chemical, biological); ii) society (social, technological) and; iii) financial economy (monetary) and;

(2) Four perspectives to strategically manage organizations within these boundaries (adapted from the Balanced Scorecard; Kaplan and Norton, 1996): i) stakeholder (who the organization does it for, to, and with); ii) product, learning and development (what the organization does now and in the future); iii) process (how, where and with what does the organization do it) and; iv) measurement (how the organization defines and measures its success)
The full canvas layout consists of 27 ‘blocks’: the three boundary and four perspective blocks introduced above, and 20 question blocks introduced below. All 27 blocks are more fully described in Appendix 1\(^2\).

3.2.2 The SSBMC and relational leadership

**Systems level.** To enable the development of strongly sustainable business models, designers need to engage in processes of integrative thinking to encourage a framing of the business model within an embedded perspective, i.e. within the global socio-ecological system. The SSBMO that underpins the SSBMC explicitly identifies the three boundary contexts environment, society, and financial economy (Jones and Upward, 2014; Upward, 2013; Upward and Jones, 2016). Leaders and collaborators using the SSBMC to develop desired near or long-term future business models are thus challenged to think beyond the organization and define its relations, inter alia, to bio-physical stocks, eco-system services, and the ‘fundamental human needs’ of environmental, social, and economic stakeholders (Max-Neef, 1991). The tool can be used to enable creative-integrative collaborations in which reflexive loops and bounded rationality might be moderated to allow for the emergence of consciousness for the global system and its constraints.

**Success level.** The SSBMC’s intention is to motivate leaders to deepen their understanding of stakeholders’ fundamental human needs. They have to identify the actors who take on roles as stakeholders of an organization, beyond actors who take a customer stakeholder role, including

\(^2\) The SSBMC is subject to an on-going program of applied research. Most recently the SSBMC has evolved to become the Flourishing Business Canvas that is currently under-going field evaluation and testing (see www.FlourishingBusiness.org for the most recent practice and developments).
environmental and social actors along with their specific needs. In turn, the requirement to consider stakeholder roles, the actors taking on those roles and the value propositions that meet those actors fundamental needs drives the identification of the enterprise’s relationships and channels required for value co-creation (e.g. two-way communication, product and service delivery, among others). Like most business modelling tools, the SSBMC supports the satisfaction of needs of ‘target groups’ to create and capture financial value. But compared to conventional tools (e.g. Osterwalder and Pigneur, 2010) the SSBMC follows an integrative approach. Its method suggests that actor-specific questions must be answered to fulfil the design task, such as “Who are the human and non-human actors who may choose to engage with the business?”, or “Which human and non-human actors’ fundamental needs is the organization intending to satisfy?” Consequently, this leads to an extended idea of success based on a definition of value that aligns with an understanding of fundamental human needs: “How does the organization define success environmentally, socially, and economically (from the perspective of all actors in all their various stakeholder roles)?” (Jones and Upward, 2014; see Appendix 1) Relational leaders must understand and deal with stakeholders’ diverse and partly conflicting needs as reference points to define business modelling success. The SSBMC requires relational leadership to facilitate the satisficing of as many of the needs as possible of all human and non-human actors related to a particular business model, and this approach is compatible with the FSSD’s sustainability principles.

Strategic guidelines level. On the strategic guidelines level, the FSSD requires the use of backcasting and prioritizing techniques to identify the means by which success can be achieved. Taking the above definition of strongly sustainable business models, i.e. business models that
do not violate the FSSD’s four sustainability principles, as the benchmark for desired future scenarios, the SSBMC offers a feature that can help in structuring and prioritizing possible steps for realizing these scenarios and thus success. In total, it defines a set of 20 questions within 3 contexts and grouped into 4 perspectives that leaders must respond to in order to develop strategically sustainable business models. Leaders and collaborators engaging in such projects must therefore build on very different kinds of knowledge and sources of information. While, for example, knowledge about bio-physical stocks is required (“Which bio-physical materials are moved and/or transformed during the processes which create, deliver and maintain the organization’s value propositions?”), the SSBMC also asks questions about the relative power of the various stakeholders in an organization’s approach to decision making (“What is the governance of the organization?”) (see Appendix 1). Obviously, leaders have to bring together and span multiple perspectives, interests, and fields of expertise (such as ecology and organizational management) and integrate these into a coherent model. Here, the 20 SSBMC questions, situated and inter-related with the 3 necessary contexts and grouped into 4 perspectives, can serve as a strategic guideline.

Actions level. From a business model perspective, the actions level refers to activities such as the development of new products or services as a foundation for new value propositions, or the set-up of new value chains and partner networks that fulfil the criteria of environmentally and socially sound sourcing and production to no longer violate the sustainability principles. That is, business models and their elements are instantiated, requiring detailed planning and conducting of implementation programs. However, implementation and subsequent business model execution, i.e. normal operations under the modified or new business model, are not
directly supported by the SSBMC. Here, other tools, e.g. from the fields of project management or process engineering, come into play, shifting from the business model scale to scales of higher granularity such as organizational units, production processes, or new product design. The leadership challenge associated with this shift is to identify activities and supporting tools that allow for an implementation of the envisioned business model. A range of actions and tools must be identified and integrated. Although the SSBMC does not directly support these actions, its major contribution is a shared language for describing near and long-term visionary business models that enhances collaboration amongst all stakeholders required to take effective action to bring about the desired improved future.

**Tools level.** While the SSBMC is intended to help organizations design their visionary future business models and select from possible near-term business models as stepping stones towards their strongly sustainable future, further SSBMC-related tools still need to be developed: e.g. computerized tools, techniques, methods, principles, patterns and case studies as means to support knowledge integration and sharing across the boundaries of different sectors, levels, and disciplines.  

3 This is the goal of the Flourishing Business Innovation Toolkit, of which the Flourishing Business Canvas, a recent evolution to the SSBMC, is a key component. The production of the Toolkit is an applied research project being undertaken by members of the global Strongly Sustainable Business Model Group (forum.SSBMG.com).

3.3 **Management innovation 2: The ‘Future-Fit Business Benchmark’ (F2B2)**

As with the SSBMC, we identify the specific relational leadership processes that are required of leaders to support the application of the Future-Fit Business Benchmark. The following section
introduces the major ideas of this strategic sustainability assessment framework, before we describe it in relation to the FSSD’s five levels.

### 3.3.1 Future-fit business benchmark: An overview

The Future-Fit Business Benchmark is a science-based, co-created, and openly available framework intended to introduce a new generation of sustainability metric (Kendall and Willard, 2015). The F2B2 developers, inter alia from The Natural Step Canada and Future-Fit Foundation, identified different shortcomings of sustainability reporting frameworks, ratings, rankings, and standards that, according the F2B2 developers, are insufficient and misleading as a support for business sustainability. Three kinds of benchmark are commonly used to assess progress on corporate sustainability (Figure 2): (1) comparisons relative to a baseline year (e.g. the last reporting period), (2) relative to current best practice (e.g. best performers in an industry), or (3) relative to a company’s own targets (e.g. to reduce CO₂ emissions by 20% until 2020). Using these kinds of benchmarks can lead to situations in which incremental and, in absolute terms even ineffective improvements, are seen as progress towards sustainability. For example, honoring a large industrial corporation as a particular ‘Industry Sustainability Leader’, despite the fact that many of these companies have an overall net negative impact on the environment, is only possible due to best-in-class methods as applied in the Dow Jones...
Sustainability Index. The F2B2 builds on the conclusion that such benchmarks cannot provide the signals business leaders, investors, customers, and policy makers need to fundamentally rethink today’s business models. Similar criticism has been raised in different studies on the reliability and validity of sustainability assessment and reporting methods (e.g. Talbot and Boiral, 2013 for the case of GHG inventories).

Fig. 2: The “fourth benchmark” proposed by the F2B2 (“required state”)

Therefore, the F2B2 proposes a ‘fourth benchmark’ to close these methodological gaps (‘required state’ in Figure 2). It is argued that the necessary signals to motivate real change can only be generated with reference to a desired future state in which a company is truly sustainable. ‘True sustainability’, or ‘future fitness’ as the F2B2 developers call it, defines the minimum acceptable level of environmental and social performance based on the best available science, such as operational translations of ‘planetary boundaries’ to the organizational level (Griggs et al., 2013; Robèrt et al., 2013; Whiteman et al., 2013). This desired future state, represented by the fourth benchmark, goes beyond traditional benchmarks in that it defines an ultimate goal, a point in the future beyond which companies create net positive value only (Kendall and Willard, 2015). This approach to goal setting is inspired by and hence compatible with backcasting from basic success principles and/or future scenarios within such constraints (e.g. Robèrt, 2000).

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Whether the F2B2 will correct the perceived flaws of common sustainability assessment frameworks depends on whether the concept of future-fitness provides not yet available and practically relevant definitions of truly, or strongly, sustainable businesses. Therefore, the F2B2 builds on the strategic sustainability paradigm that highlights the nested interdependencies of nature, society, and economy (Griggs et al., 2013; Kurucz et al., 2013; Marcus et al., 2010), and uses science-based environmental and social systems conditions (Broman and Robèrt, 2015; Missimer et al., 2010; Missimer, 2015; Robèrt et al., 2013) to ensure that future-fit businesses have an increased likelihood to become strategically sustainable. The acknowledgement of environmental and social systems conditions and their nested interdependencies, identified and formulated as ‘sustainability principles’ for flourishing on a finite planet, leads to ‘business principles’ for the development and management of businesses to ensure that their activities do not contribute to environmental and social problems. These business principles, however, do not require businesses to fix given problems, such as already degraded landscapes or expelled ethnic groups, which might be seen as a blind spot since the sustainable entrepreneurship literature shows that the problems of the past can be a strong motivation for particular types of environmental and social entrepreneurship (cf. Cohen and Winn, 2007; Schaltegger and Wagner, 2011.) The Future-Fit Foundation anticipates that future releases of the benchmark may help companies assess their efforts to be restorative or ‘net positive’ after they achieve a do-no-harm level of performance that will be defined in the first release of the benchmark in 2016.

Appendix 2 summarizes the sustainability principles identified in the natural and social sciences (Broman and Robèrt, 2015; Missimer, 2015; Robèrt et al., 2013) and related business principles,
currently in the process of development, that will allow companies to begin to connect their own operations to these principles. The business principles offer a starting point for relational leaders to begin to facilitate the translation of the sustainability principles to a particular business context. In doing so, they present an opportunity for the sustainability principles to be more substantially applied to specific business operations. Since the F2B2 is not a design tool (like the SSBMC), but a framework for performance assessment, these business principles describe what a truly sustainable organization would look like, i.e. what an assessment of such a business would reveal in the best of all cases (e.g. “Operations emit no greenhouse gases”). Based on this, the F2B2 proposes 21 performance goals for a future-fit business of which achievement is to be controlled with an according set of KPIs as illustrated in Figure 3.

The F2B2 business principles are not introduced to replace the FSSD sustainability principles, but as a specification for the realm of economic and business activities within the framing provided by the sustainability principles. The FSSD is generally open to such specifications: “Besides the sustainability principles, the FSSD is non-prescriptive. A multitude of possible visions exist within the principled frame ... When a vision has been defined it can guide supplementary studies of the system (including what need not to be studied), as well as selection, combination and development of supplementary forms of support as needed to enable the transition.” (Broman and Robèrt, 2015, p. 6)
3.3.2 The F2B2 and relational leadership

*Systems level.* As with the SSBMC, leadership processes of holistic and integrative thinking are essential to allow the F2B2 developers and user to incorporate an embedded view of nested environmental, social, and economic systems and to explore their limits, interrelationships, and mutual impacts. In order for the assessment framework to embody and thus assess the value creation criteria underpinning ‘future fitness’, the leadership process of meaning making needs to be guided by knowledge from the environmental and social sciences, both on the side of those developing and using the framework. It therefore makes transparent the *sustainability principles* and required *business principles* that allow for a holistic and integrative view of companies as a part of the global socio-ecological system, laying the ground for understanding and measuring companies’ impact on nature and society. The science-based sustainability principles are proposed to define the conditions for a sustainable human society on a finite planet (e.g. “In a sustainable society, nature is not subject to a buildup of naturally scarce elements extracted from the earth’s crust”) and business principles which describe what a future-fit business *would* look like (e.g. “The business does not contribute to a buildup in the environment of naturally scarce elements extracted from the earth’s crust”; see Appendix 2 and ‘Success level’ below). Leaders and collaborators within and outside the F2B2 initiative have to make sure that these science-based sustainability principles are translated and understood in a way that speaks to the business community.
Success level. The F2B2’s third key component, performance goals (Figure 3), is proposed as a means to connect the science, as represented by the science-based sustainability and business principles, to the most important core capability that businesses have developed and refined for centuries: pursuing goals. The rationale of the F2B2 is to use a set of 21 business goals to define the necessary and sufficient levels of social and environmental performance and translate these into a language which the business community is used to: the language of success as coded into performance dimensions and according key performance indicators (KPIs; see next level). The F2B2’s goals are derived from the FSSD’s definition of success, i.e. to not violate the sustainability principles. An example of a business principle in the area of operational waste is: “Operations emit no potentially harmful substances.” Setting the bar for operations (i.e. defining their success criteria) is rarely a straightforward task. For example, if NOx substances are increasing and/or already causing impacts in a region, not contributing to the problem means zero emissions to a company complying with the sustainability principles. Because of this complexity, interpretation of the sustainability principles requires multi-disciplinary knowledge and the ability to apply it to business operations: What kind of substances does the company emit, based on which processes? Which natural sinks are affected? Which of these substances’ are naturally scarce? Which of them must be substituted, and how? Obviously, leaders and collaborators striving for improvements in this performance dimension are challenged to identify and listen to experts, such as physicists, biologists, process engineers or psychologists, who are normally not invited to co-define strategic business goals and success. How then to integrate these diverse forms of knowledge is the work of leaders at
the level where strategic guidelines are being developed toward the articulation of sustainable development goals.

_**Strategic guidelines level.**_ The ‘fourth benchmark’ introduced above (Figure 3) is inspired and thus compatible with backcasting as proposed by Robèrt (2000, p. 244, original italics): “What is considered ‘realistic’ today should only be allowed to influence the _pace_ of the transition, not its _direction._” Although it might seem unrealistic to design 100% non-waste-emitting business operations _today_, it is still possible to envision minimizing waste emissions _far beyond_ what is currently feasible and to systematically select those steps that move a company toward this aspirational goal. The performance goals and their KPIs are expected to help measure progress towards a business’s long-term future vision – such as a non-waste business model – while the prioritizing questions proposed under the FSSD can help in selecting short- and medium-term steps (e.g. Robèrt et al., 2013): Are the short- and medium-term options flexible platforms for future steps? Do they strike a balance between direction and speed? Do they earn a return on investment that allows sustaining the journey towards the transformational goal? Although a strong vision might help engage others and keep direction, relational leaders and their collaborators must also facilitate the co-production of a long-term process in which a concrete route to the long term future visionary business model emerges as they move. Keeping the dialogue alive to foster mutual learning and to motivate others to keep moving, despite all uncertainties, requires strategic and visionary capabilities from relational leaders working with the F2B2.
*Actions level.* Actions directly related to the F2B2 are the assessment and communication of a business’s strategic sustainability performance. However, as with the SSBMC, those activities that change or even transform a business depend on the interplay with other actors and tools. It is sustainability reports, standards, investment appraisals, and ratings which receive business leaders’ attention and might thus lead to change, i.e. concrete steps and activities. Therefore, a core activity at the level of the F2B2 initiative is building trusting relationships with the providers of sustainability reports, standards etc., with the aim that they embed F2B2 within their frameworks and methodologies. The actions at the level of single businesses, such as re-designing business models, for example using the SSBMC, are expected to be stimulated but not directly supported.

*Tools level.* While the F2B2 is intended to help relational leaders formulate their visionary future goals, decide about steps, and track their progress towards these goals, it has to be seen as one among further necessary tools which have to co-evolve: F2B2-related tools still need to be developed, such as a handbook on how to assess the KPIs for each goal so that progress can be reported and raters can compare companies’ relative progress toward the benchmark goals. If the F2B2 initiative is successful in the future, its framework might become the “Intel inside” the tools used by reporting, rating, standards, and investing organizations, capitalizing on their existing reach and influence.
4. Relational Leadership for Strategic Sustainability: Practices and Capabilities to Support the FSSD

In this section, we will further develop our definition of relational leadership for strategic sustainability, as an ongoing process of meaning making and reflection within a nested system of the biosphere and human society. We will do this by extending insights from the two strategic sustainability management innovations we have just explored to consider the specific relational leadership practices and capabilities that the FSSD requires in order to realize its transformative potential.

Essential in relational leadership for strategic sustainability across levels of the FSSD, in both the SSBMC and the F2B2, is the role of leaders facilitating collective meaning making as a precondition for holistic and integrative systems thinking. In the SSBMC, collective meaning making is enabled by a shared language based on an integrative view of the complex knowledge of environmental, social and economic value co-production for stakeholders into a limited number of questions situated in their necessary contexts. In the F2B2, collective meaning making is supported by translating complex knowledge from the natural and social sciences into a limited number of business principles, formulated into KPIs and Business Goals using a language familiar to business leaders. Thus both the SSBMC and F2B2 can enable a shared point of orientation and reflection for relational leaders and their collaborators.

In addition to the general processes of meaning making and reflection these two management innovations enable and support, we will now consider the specific relational leadership practices and capabilities that can be articulated for each level of the FSSD. We will focus on
the two key components of reflective practice (conceptualizing and operationalizing), as they relate to the levels of the FSSD, and will describe the role of relational leadership for strategic sustainability in each, as summarized in Table 3 below.

**Table 3: Relational leadership for strategic sustainability: Practices and capabilities to support transformation in the FSSD**

[Insert Table 3 here]

4.1: **Relational leadership for strategic sustainability: Practices and capabilities to support conceptualizing**

Strong sustainability represents a challenge to the status quo (Hopwood et al., 2005). The process of reflective practice that relational leaders for sustainability engage in to address the integration challenges posed by Levels 1-3 of the FSSD is described as conceptualizing. From the previous examples of management innovation we can see that conceptualizing involves challenging the status quo and imagining new possibilities. In order to do this, leaders need to engage first in critical thinking to ‘unlearn’ what we already know, our ‘unsustainable’ practices, which opens up the potential for double and triple loop learning to take place. The key capabilities that will support conceptualizing in reflective practice are integrative thinking, coproduction and dialogic strategic visioning.

**Integrative thinking.** In Level 1, relational leaders for sustainability need to surface underlying reality assumptions (Dyer, 2011) about the physical and social environment (i.e. assumptions about how the world *really* is) in order to encourage meaning making and reflection that
expands beyond a local perspective toward a consciousness of the global socio-ecological
system within which individuals and organizations operate. This leadership practice of
encouraging critical thinking requires support with leadership capabilities of integrative
thinking. Integrative thinking allows leaders to expand the field of salience, or the relevant set
of factors that are taken into consideration, exploring multi-directional and non-linear causality
in systems, visualize the whole of a system while working on the parts and searching for the
creative resolution of tensions (Martin, 2009).

**Co-production.** In Level 2, relational leaders for sustainability are focused on surfacing
underlying values assumptions (Dyer, 2011) of various stakeholder groups (i.e. assumptions
about how the world *should be*). This leadership practice of critical thinking to explore different
worldviews is supported by the leadership capability of co-production of principles. Co-
production (Waddell, 2005) leads to mutual gains between sectors when leaders can jointly
articulate and commit to their goals and understand how they might achieve these in
collaboration with stakeholders through a commitment to shared leadership. A ‘value
attunement’ (Swanson, 1999) orientation that comes from leaders who engage in dialogue
based on mutual respect would enable the understanding and acknowledging of difference;
something that is central to creating synergies between different sectors’ interests and
worldviews so that collaboration in developing sustainability principles is possible.

**Dialogic strategic visioning.** In Level 3, relational leaders for strategic sustainability are focused
on engaging others in double and triple loop learning, to generate transformative ideas that
integrate a wide range of perspectives and forms of knowledge from different disciplines.
Double loop learning (Argyris, 1977) is supported when leaders ask the question “are we doing the right things?” and challenge existing reality and values assumptions to envision new possibilities. Triple loop learning (Keen et al., 2005) is made possible when leaders bring stakeholders together in a democratic process of participation and shared leadership so that governing norms and values might be challenged, asking the question together of “how do we decide what is right?” This leadership practice of engaging others in double and triple loop learning is supported by the leadership capability of dialogic strategic visioning. Dialogic strategic visioning involves leaders catalyzing a process of dialogue based on four capacities that help to enable the identification of creative possibilities: voicing (i.e. speaking the truth of your own perspective), listening (i.e. attending another’s ideas without opposition), respecting (i.e. understanding that you can never fully understand another’s point of view) and suspending (i.e. holding assumptions, judgements and certainties up for examination) (Waddell, 2005). Multi-stakeholder learning dialogues that address complex problems such as those of sustainability require reflective leadership practices in framing problems and considering how to act on them using empathetic listening and dialogic learning (Calton and Payne, 2003). Dialogic strategic visioning requires the leader to incorporate different forms of knowledge from different disciplines in the development of strategic guidelines for sustainable development.
4.2 Relational leadership for strategic sustainability: Practices and capabilities to support operationalizing

Strategic sustainability initiatives require attention to alignment of activities within the broader strategic guidelines, purpose and system within which they are embedded (Robèrt et al, 2013). Because of this, the process of reflective practice that relational leaders for sustainability engage in to address the integration challenges posed by Levels 4-5 of the FSSD is described as operationalizing. From the previous examples of management innovation, we can see that the meaning making and reflection involved in operationalizing requires leaders seeking synergies between activities and ensuring alignment between tools and actions. In order to do this, leaders need to engage others in pragmatic experimentation to identify new opportunities for action and then use single and double loop learning to assess the efficiency and effectiveness of this selection and prioritization of activities and the tools that support them. The key leadership capabilities that will support operationalizing are having both a system building and a system quality focus.

**System building focus.** In Level 4, relational leaders for strategic sustainability need to engage others in pragmatic experimentation to identify and create synergies between activities. This leadership practice of pragmatic experimentation to select and prioritize a related suite of actions is supported by the leadership capability of a system building focus, or understanding actions and strategies in the context of system relationships. To encourage societal learning, leaders need to understand their actions in the broader context of the system they are operating in (Waddell, 2005). Using a conversational approach to design thinking (Liedtka and
Mintzberg, 2006), leaders can include a wide range of stakeholders in a process of problem solving characterized by empathy, iteration and invention (Liedtka and Ogilvie, 2011). Tensions that emerge from this process are generated by the consideration of how stakeholder worldviews and different forms of knowledge should play a role in this experimentation, embracing an awareness of the physical and social limits of the biosphere (Kurucz et al., 2013) that serve as design constraints. Identifying these limitations with others and then encouraging experimentation within them to develop contextually optimal solutions is the role of leaders at this level.

**System quality focus.** In Level 5, relational leaders for sustainability need to work on engaging others in single and double loop learning to ensure alignment between tools and actions. Single loop learning (Argyris, 1977) is focused on ensuring efficiency in the application of tools to address system level problems, and is characterized by leaders engaging others in asking the question “are we doing things right?” Double loop learning (Argyris, 1977), discussed above is focused on the effectiveness of these tools within the overall strategic sustainability objectives. The leadership practice of engaging others in single and double loop learning is supported by the capability of a system quality focus. Design thinking requires leaders who are engaging others in a process of pragmatic experimentation to also spark conversations to determine if these ideas are desirable, feasible and viable (Brown, 2009). At this level, the role of leaders is to ensure that tools are developed to strengthen relationships across levels of the FSSD to support sustainability principles (i.e. ensure desirability of the tools) and to enable strategic objectives (i.e. ensure feasibility and viability of the tools).
Taken together, these practices and capabilities that support the process of meaning making and reflection focused both on conceptualizing and operationalizing allow relational leaders for sustainability to bolster the transformative potential of the FSSD.

5. Conclusion and directions for future research

In this paper we have considered how leaders might best function to address the integration challenges inherent in strategic sustainable development and thus accelerate progress in these initiatives. We have identified the importance of relational leadership for strategic sustainability, or the ongoing process of meaning making and reflection within a nested system of the biosphere and society, for understanding how leaders might address the relational tensions that continuously present themselves from this central challenge of integration. The primary contribution of this paper is that we have developed a conceptual model of relational leadership for strategic sustainability, informed by practice, which describes specific practices and capabilities to support the FSSD in achieving its transformational potential. A secondary and related contribution is that we have examined two strong sustainability management innovations, the SSBMC and the F2B2, to consider how they embody relational leadership for strategic sustainability, and how these practices and capabilities help to support and measure success in the FSSD for the purpose of strategic sustainable organization management. Future empirical research focused on identifying the relational leadership practices, capabilities, methods and tools relevant for strategic sustainability initiatives and how these specific practices and capabilities support the FSSD’s desired outcomes would help to validate and further refine an approach to leadership that is most helpful for accelerating progress on critical
environmental and social issues. The practical relevance of the SSBMC and F2B2 as organizational development and assessment supports for the FSSD would also be a worthwhile area of exploration. Based on this initial model of relational leadership for strategic sustainability, and allowing for future empirical refinements, it is also important to focus on how to design an approach to relational leadership development that will nurture and encourage the leadership practices and capabilities that best support strategic sustainability initiatives.
References


Robèrt, K.-H. (2000). Tools and concepts for sustainable development, how do they relate to a general framework for sustainable development, and to each other? Journal of Cleaner


Appendix 1 – The ‘Strongly Sustainable Business Model Canvas’ (SSBMC)

This appendix provides a summary of the SSBMC’s 27 ‘blocks’ introduced in the main article (three boundary, four perspective and 20 question blocks). For a full description see (Upward, 2013). Note that SSBMC is subject to an on-going program of applied research. Most recently the SSBMC has been evolved to become the Flourishing Business Canvas that is currently under-going field evaluation and testing (see www.FlourishingBusiness.org for the most recent practice and developments).

1. On the systems level the SSBMC embeds an organization within the three contexts of natural environment, society, and the financial economy (based on the embedded view on the global socio-ecological system; e.g. Griggs et al., 2013; Marcus et al., 2010; Robèrt et al., 2013; Rockström et al., 2009)

2. On the organizational management level the SSBMC uses four perspectives to group the 20 questions, thereby helping tool users to manage the necessary complexity (adapted from the Balanced Scorecard; Kaplan and Norton, 1996)
3. The SSBMC combines the three contexts and four perspectives to allow for integrative and context-sensitive business model design (three dimensional side view)

3. Visually, to be practically useful, the SSBMC then translates this to a two dimensional view by looking down from above three dimensional view. The contexts and perspectives are shown as simple blocks. The SSBMC combines the three context blocks and perspectives to allow for integrative and context-sensitive business model design
4. The 20 questions are shown as blocks that, by visual position, are inter-related to the necessary combinations of the three contexts and grouped by one of the four perspectives

... that prompts leaders and designers to respond to the following 20 questions.

1. **Actor**: Who are the human and non-human actors who may choose to engage with the business? Which actors are representing the needs of other humans, groups, and non-humans?

2. **Needs**: Which human and non-human actors’ fundamental needs is the organization intending to satisfy? What needs do the actors have which the organization can meet or might prevent an actor from fulfilling?

3. **Stakeholders**: What roles do all the actors involved with the organizations take?

4. **Relationships**: What is the nature of the relationships with the organization’s stakeholders that must be cultivated and maintained?

5. **Channels**: What channels will be used to communicate, developing the required relationships, with each stakeholder (and vice versa)? How will value propositions be delivered or co-created with each stakeholder?
6. **Value Propositions:** How is value co-created/co-destroyed between the organization and stakeholders and other actors? What are the positive (value creating) and negative (value destroying) value propositions for each stakeholder now and in the future? How does each value proposition relate to meeting each stakeholder actor’s needs or might prevent that actor from fulfilling a need?

7. **Organization:** What are the business models of the organizations involved in the co-creation/co-destruction, delivery and maintenance of the value propositions? How do those organizations’ creation, delivery and maintenance of their (positive and negative) value proposition alter the definition and measurement of success?

8. **Decision:** What is the governance of the organization? Which stakeholders get to make decisions about the organization’s definition of success and what the organization does to achieve that success? (e.g. what channels are used to develop and maintain which relationships with which actors taking which stakeholder roles, and, where and how are activities undertaken and resources transformed?)

9. **Partnerships:** What formal stakeholder relationships are required to deliver the organization’s value propositions? Who are the organization’s partners and what agreements for resources and activities have been made with them?

10. **Resources:** What tangible and intangible resources (human, social, knowledge, monetary, energy) are required to co-create, deliver and maintain the organization’s value propositions?

11. **Biophysical Stocks:** Which bio-physical materials are moved and/or transformed during the processes that create, deliver and maintain the organization’s value propositions (considering the entire lifecycle of all technology and biological nutrients)?

12. **Activities:** What activities are required to co-create, deliver and maintain the organization’s value propositions? What are the organizations business processes? Are these activities social, monetary, or bio-physical or a combination?

13. **Ecosystem Services:** Which outputs from which ecosystem services are used in, harmed or improved by the activities that co-create, deliver and maintain the organization’s value propositions?

14. **Success:** How does the organization define success environmentally, socially and economically (from the perspective of all stakeholders with the decision rights to define organization success)?

15. **Tri-profit:** How does the organization choose to calculate profit – environmentally, socially, financially any point in time? How are the costs ‘subtracted’ from the revenues for each of environmental, social and monetary costs and revenues and ‘summed’ to calculate tri-profit (each in their own units)?

16. **Valuation Method:** How does the organization value contributions to success? How does the organization calculate measures of environmental, social or monetary costs, revenues or any and all assets from measures of process performance and/or the value customer and other stakeholders place on the value propositions? (e.g. typically customer stakeholders are willing to pay to receive a value proposition via a monetary pricing calculation)

17. **Processes (Measure):** How does the organization measure those aspects of the organization’s processes that define success (e.g. quality, quantity, timeliness, satisfaction, etc.) in environmental (Système International), social (happiness, well-being), and economic (monetary) units?
18. **Costs**: How does the organization measure the costs incurred at any point in time? How are costs valued in financial terms (e.g. payments made to stakeholders, particularly suppliers), social terms (e.g. decreased happiness, illness etc.), environmental terms (e.g. nature harmed or depleted) (each in its own units)?

19. **Revenues**: How does the organization choose to measure the revenue generated at any point in time? How are revenues valued in financial terms (e.g. payments received from customers), social terms (e.g. increased happiness, wellbeing etc.), environmental terms (e.g. improved state of nature) (each in its own units).

20. **Assets**: How does the organization measure the value of the assets required, created or depleted over time? How are assets valued in financial terms (e.g. financial valuation), social terms (e.g. social capital, knowledge capital, brand value), environmental terms (e.g. natural capital restored or harmed) (each in its own units).

Source: Upward, 2013; Jones and Upward, 2014; Upward and Jones, 2016
Appendix 2 – Science-Based Sustainability Principles, Business Principles, and Performance Goals

This appendix provides a summary of the science-based sustainability principles that inform the F2B2 business principles and performance goals. In turn these will inform the key performance indicators (KPIs) which are currently under development and review. The F2B2 is a work in progress, a living process in development with stakeholders. The goals listed here are preliminary and are intended as illustrative and not exhaustive.

<table>
<thead>
<tr>
<th>8 Sustainability Principles for a sustainable human society on our finite planet&lt;sup&gt;7&lt;/sup&gt;</th>
<th>7 Business Principles that are the starting point for more fully developing a strategically sustainable future fit business model/operating business</th>
<th>21 Future-Fit Business Goals that an organization much achieve to operate within the business principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a sustainable society, nature is not subject to systematically increasing concentrations of substances extracted from the Earth’s crust.</td>
<td>The business ensures no potentially harmful substance escapes into the environment.</td>
<td>Products emit no potentially harmful substances when used as intended</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All products and packaging are designed to be repurposed at end of life</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Customers have access to end-of-life repurposing services for all products and packaging (This goal also aligns with the business principle about Health)</td>
</tr>
<tr>
<td>In a sustainable society, nature is not subject to systematically increasing concentrations of substances produced by society.</td>
<td></td>
<td>Operations emit no greenhouse gases</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Products emit no greenhouse gases when used as intended</td>
</tr>
<tr>
<td>In a sustainable society, nature is not subject to systematically increasing degradation by physical means.</td>
<td>The business protects the environment from physical degradation.</td>
<td>All energy is from renewable sources (This goal also aligns with the business principle about Potentially Harmful Substances)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>All water is used in an environmentally responsible and socially equitable way (This goal also aligns with the business principle about Health)</td>
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<td></td>
<td></td>
<td>All materials are from responsibly-managed sources (This goal also aligns with the business principles about Potentially Harmful Substances and Values)</td>
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<tr>
<td></td>
<td></td>
<td>Physical presence has net zero impact on local ecosystems</td>
</tr>
</tbody>
</table>

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<sup>7</sup> This wording is taken from the latest scientific publication summarising the sustainability principles, Broman and Robèrt, 2015, p. 7.
<table>
<thead>
<tr>
<th>In a sustainable society, people are not subject to structural obstacles to <strong>health</strong>. (This means that people are not exposed to social conditions that systematically undermine their possibilities to avoid injury and illness; physically, mentally or emotionally.)</th>
<th>The business safeguards the health of everyone it depends upon&lt;sup&gt;8&lt;/sup&gt;</th>
<th>Employee health is fostered (This goal also aligns with the business principle about Values)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In a sustainable society, people are not subject to structural obstacles to <strong>influence</strong>. (This means that people are not systematically hindered from participating in shaping the social systems they are part of.)</td>
<td>The business ensures that everyone it depends upon has a voice.</td>
<td>Employee concerns are actively solicited, impartially judged, and transparently addressed (This goal also aligns with the business principles about Health and Values)</td>
</tr>
<tr>
<td>In a sustainable society, people are not subject to structural obstacles to <strong>competence</strong>. (This means that people are not systematically hindered from learning and developing competence individually and together.)</td>
<td>The business ensures that everyone it depends upon has the opportunity to learn and grow.</td>
<td>The Living Wage and Employment Terms goals support this business principle</td>
</tr>
<tr>
<td>In a sustainable society, people are not subject to structural obstacles to <strong>impartiality</strong>. (This means that people are not systematically exposed to partial treatment.)</td>
<td>The business treats everyone it depends upon impartially.</td>
<td>All employees receive equal pay for equal work.</td>
</tr>
<tr>
<td>In a sustainable society, people are not subject to structural obstacles to <strong>meaning making</strong>. (This means that)</td>
<td>The business protects the values of everyone it depends upon.</td>
<td>All employees are subject to fair employment terms (This goal also aligns with the business principle about Learning &amp; Growth and Impartiality)</td>
</tr>
</tbody>
</table>

<sup>8</sup>This is the wording in the current F2B2 draft. From a relational leadership perspective it is important to acknowledge the complexity of stakeholder relationships. From this stance we would not only consider ‘who the business depends upon’ but rather ‘who the business impacts or who impacts them’.
| people are not systematically hindered from creating individual meaning and co-creating common meaning.) | All lobbying is for outcomes that align with future-fit principles (This goal also aligns with the business principle about Health) |
| | The right tax is paid in the right place at the right time (This goal also aligns with the business principle about Health) |

Source: Kendall & Willard, 2015, based on Broman and Robèrt, 2015; Missimer, 2013; Missimer et al., 2014; Missimer, 2015; Robèrt et al., 2013
Table 1: Central Integration Challenges for Leadership in the FSSD

<table>
<thead>
<tr>
<th>FSSD Levels</th>
<th>Central Integration Challenges for Leadership</th>
<th>Reflective Practice Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Levels 1-3:</strong> System, Success and Strategic Guidelines</td>
<td>• <em>International:</em> Developing consciousness of the global socio-ecological system; • <em>Sectoral:</em> Defining success by integrating diverse stakeholder interests and worldviews and; • <em>Scientific:</em> Valuing different kinds of knowledge from different disciplines</td>
<td>Conceptualizing</td>
</tr>
<tr>
<td><strong>Levels 4-5:</strong> Actions and Tools</td>
<td>• <em>Horizontal:</em> Selecting and prioritizing a related suite of actions and; • <em>Vertical:</em> Ensuring alignment between tools and actions</td>
<td>Operationalizing</td>
</tr>
<tr>
<td>FSSD Levels</td>
<td>Relating Two Strategic Sustainability Management Innovations to the FSSD</td>
<td>SSBMC: Design for Success Based on FSSD</td>
</tr>
<tr>
<td>-------------</td>
<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------</td>
</tr>
<tr>
<td>(1) System</td>
<td>“An organization in the global socio-ecological system (the organization within society within the biosphere); An overview of the sustainability challenge” (Robèrt et al., 2012, p. 49)</td>
<td>SSBMC explicitly positions an organization and its BM within the global socio-ecological system; The BM and aspects of the economy, society, and biosphere are explicitly represented and modelled</td>
</tr>
<tr>
<td>(2) Success</td>
<td>“Eliminate the organization’s contribution to society’s violation of the Sustainability Principles; AND within the constraints of the Sustainability Principles, the organization’s vision and goals” (Robèrt et al., 2012, p. 49)</td>
<td>SSBMC provides a shared language to uncover stakeholders’ needs and satisfiers with respect to the value an organization creates or destroys; Stakeholders discover shared and divergent needs and values and can inform the definition of organizational (and hence BM) success</td>
</tr>
<tr>
<td>(3) Strategic Guidelines</td>
<td>“Backcasting from success principles [A2] and the organization’s vision and goals (Robèrt et al., 2012, p. 49); The three prioritizing questions” (Robèrt et al., 2012, p. 55)</td>
<td>SSBMC provides a template to capture a BM at any point in time: existing or desired (near- or long-term future); Having a single representation over time allows for alignment (using the 3 prioritizing questions) of near-term preferred BMs with long-term back-casted visionary ones</td>
</tr>
<tr>
<td>(4) Actions</td>
<td>(1a) Design of a future long-term visionary BM with the potential to fully comply with the definition of success [A2] using the SSBMC [column B]; (1b) Design and selection (via the 3 prioritizing questions) of a near-term BM headed towards the long-term visionary BM; (2) Implementation of new BM; (3) Measuring the organization’s performance using the F2B2 KPIs [column C]; (4) Evaluating performance based on F2B2 goals</td>
<td>SSBMC can enhance the collaboration necessary for BM implementation via its shared language to describe current, near-, and long-term future BMs; But implementation itself (planning and execution of transformation programs and normal operations under the new BM) is not supported by the SSBMC</td>
</tr>
</tbody>
</table>

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9 Does this investment/action (i) constitute a flexible platform towards compliance with the Sustainability Principles while striking a good balance between (ii) pace of transition and (iii) return on investment?

10 Business Model (BM)
| (5) Tools | SSBMC [column B] and F2B2 [column C] are tools designed within an understanding of the system [A1], definition of success [A2], and required strategy [A3], to take the actions [A4] necessary to achieve that success [A2], within that system [A1]. | In the future, the SSBMC could be extended with additional third-party tools, computerized tools, techniques, methods, principles, patterns, and case studies. | F2B2 plans to be the “Intel inside” the tools used by reporting, rating, standards, and investing organizations, capitalizing on their existing reach and influence. |
Table 3: Relational leadership for strategic sustainability: Practices and capabilities to support transformation in the FSSD

<table>
<thead>
<tr>
<th>FSSD Levels</th>
<th>Reflective Practice Focus Across Levels</th>
<th>Relational Leadership for Strategic Sustainability</th>
<th>Practices</th>
<th>Capabilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>(1) System</td>
<td>Conceptualizing</td>
<td></td>
<td>Surface underlying reality assumptions about the physical and social environment</td>
<td>Integrative thinking: expand the field of salience and encourage a holistic perspective</td>
</tr>
<tr>
<td>(2) Success</td>
<td>Conceptualizing</td>
<td></td>
<td>Surface underlying values assumptions of various stakeholder groups</td>
<td>Coproduction of principles: acknowledge diversity and differences to allow for collaboration in developing principles</td>
</tr>
<tr>
<td>(3) Strategic Guidelines</td>
<td>Conceptualizing</td>
<td></td>
<td>Engage others in double and triple loop learning to generate transformative ideas that integrate a plurality of perspectives</td>
<td>Dialogic strategic visioning: Facilitate dialogue (voicing, listening, respecting, suspending): acknowledging diversity and differences to identify strategic opportunities</td>
</tr>
<tr>
<td>(4) Actions</td>
<td>Operationalizing</td>
<td></td>
<td>Engage others in pragmatic experimentation to identify and create synergistic actions</td>
<td>System building focus: Understand actions and strategies in the context of system relationships</td>
</tr>
<tr>
<td>(5) Tools</td>
<td>Operationalizing</td>
<td></td>
<td>Engage others in single and double loop learning to support efficiency and effectiveness of the actions identified</td>
<td>System quality focus: Ensure that tools are developed to strengthen relationships across levels of the FSSD to support sustainability principles and enable strategic objectives</td>
</tr>
</tbody>
</table>
Fig. 1: SSBMC and F2B2 as a framework for strategic sustainable organization management
Fig. 2: The “fourth benchmark” proposed by the F2B2 (“required state”)
Fig. 3: Conceptual key components of the F2B2

- Science-based Sustainability Principles for a sustainable human society on a finite planet
- Business Principles for a future-fit business; derived from Sustainability Principles
- 21 Future-Fit Business Goals to create the possibility for a business to thrive if it operates within its Business Principles
- Key Performance Indicators (KPIs) to evaluate how far away a company is from its Future-Fit Business Goals