Advancing Sustainability-Oriented Innovation: Towards a Capability Model for Stakeholder Engagement

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Extended abstract

Innovation is generally regarded as one of the major sources of competitive advantage and a key driver of business success in theory and practice [1]. Traditionally defined as *"[…] an invention brought to its first use, its first introduction into the market"* [2], conventional innovation is primarily market-driven and its success mainly defined in economic terms. However, corporations increasingly recognize the need to integrate the idea of contributing to the sustainable development of societies into their business practices [3]. Following the Brundtland Commission, sustainable development can be defined as *"[…] development that meets the needs of the present without compromising the ability of future generations to meet their own needs"* [4]. Today it is widely accepted that sustainable development encompasses three dimensions: economic, environmental and social development. The consideration of all three aspects in business and management has become well known as the "triple bottom line" [5]. The concept of sustainability-oriented innovation (SOI) refers to the idea of applying the notion of sustainable development to innovation management. Following the idea of the triple bottom line, SOI can be defined as the market introduction of a new or improved technology, process, product, service, or business model that, compared to previous versions, advances environmental protection and/or social well-being over its entire life cycle [6].

Many authors emphasize the critical role of stakeholder engagement and collaboration for SOI [7]. On the one hand, governments and civil society are increasingly putting pressure on firms to consider sustainability issues in their innovation practices [8]. On the other hand, sustainability innovations are often characterized by a systemic nature with complex architectures that require multiple organizations to innovate collaboratively [9]. A current example is the development of electric mobility. In this case, car manufacturers need to develop critical components like batteries jointly with suppliers. However, the success of electric mobility also depends on complementary innovations like charging stations, ICT (information and communication) infrastructure and clearing and settlement systems that are typically being developed in other industries like ICT and telecommunications. At the same time new business models have to be developed collaboratively, for instance, with electric utilities and network operators that may include flexible tariffs for charging and discharging depending on the availability and price of electricity from renewable energy sources. Policy makers play a crucial role as they are working on regulatory frameworks and incentive schemes in order to support market introduction and diffusion of electric mobility. Finally, customers and the broader civil society have to be included in the transition process as electric mobility is not only a new product but will probably affect the way people think about cars and personal mobility in general.

Further need for stakeholder engagement stems from the fact that sustainability effects of products occur throughout their entire life cycles [10]. In order to control these effects it is therefore necessary to engage with all value chain partners, including suppliers, distributors and users. One of the first major companies that embarked on explicitly considering the sustainability effects of end consumers is Unilever. Internal studies found that 68% of Unilever's greenhouse gas impact occurs in the usage phase, especially from hot water used with its hygiene products. Consequently, better understanding user behavior and influencing it towards a lower environmental impact has now become an integral part of Unilever's sustainability agenda [11].

The need to effectively engage with stakeholders is seen as a challenge for a firm that requires it to develop new capabilities [12]. However, existing research on

SOI either treats stakeholders undifferentiated stating a general need for stakeholder engagement or engaging with one specific group is addressed in depth (e.g. users [13]). A comprehensive framework that addresses the particularities of different stakeholder groups is still missing. This research aims at closing this gap by understanding the distinct roles of different stakeholder groups for SOI and exploring the capabilities needed to successfully engage with them in the process of creating sustainability-oriented innovations. It is driven by the following research questions:

(1) What is the role of different stakeholder groups in SOI?
    a. Why do different stakeholder groups need to be engaged in SOI?
    b. How can different stakeholder groups contribute to SOI?
(2) What are the key capabilities needed to engage with different stakeholder groups in order to foster SOI?

The research is based on the stakeholder, sustainability, innovation management and dynamic capabilities literature and complemented by case studies in multinational corporations from different industries.

Since R. Edward Freeman's seminal book 'Strategic Management: A Stakeholder Approach' in 1984, a variety of stakeholder typologies has emerged that yield important insights for SOI [14]. Mitchell et al. introduce a model to determine the importance of a stakeholder for a company based on three attributes: power, legitimacy and urgency [15]. By combining these attributes, they define a typology with eight types of stakeholders that may help to develop strategies to deal with them. Although not explicitly referring to stakeholder theory, the work of Afuah & Bahram is highly relevant for SOI as they contribute to a better understanding of systemic innovation [16]. They argue that for a systemic innovation to be successful, the effects (e.g. needed competencies, investment decisions, disruptive potential) on stakeholders in the innovation value-added chain (i.e. suppliers, customers and complementary innovators) have to be considered by the innovating company. Hall & Vredenburg and Hall & Martin add the importance of managing the sometimes conflicting demands of secondary stakeholders (e.g. environmentalists, NGOs, local communities) especially in the context of "controversial innovations" and "sustainable development innovations" [17]. In their stakeholder

view of the corporation, Post, Preston & Sachs suggest to structure a firm's stakeholders into three distinct groups depending on their relation to the focal company: resource base (e.g. customers and users, employees, shareholders and lenders), industry structure (e.g. joint venture partner and alliances, supply chain associates, unions, regulatory authorities) and social political arena (e.g. local communities and citizens, governments, private organizations) [18]. Within the conceptual part of this research the contributions of existing typologies in the context of SOI are evaluated with the goal of understanding the different roles of stakeholder groups in SOI practices. It is argued, that companies need to develop dedicated capabilities to engage with each group.

An initial literature review and informal discussions with practitioners have led to the development of a preliminary research framework including five capability dimensions: (1) scope (2) organization, (3) people, (4) methods and (5) culture. Within each of these dimensions dedicated capabilities are expected to be important for engaging with different stakeholder groups in order to foster SOI. The research framework will be used as an initial guideline for the case interviews. However, it remains open for adjustments during the empirical phase of the research project.

For the empirical part of this research, a multiple case study design is chosen. As recommended in the literature a qualitative case study approach is particularly well suited to explore a relatively new field in which the available body of knowledge is limited [19]. In order to gain a holistic understanding of the companies' SOI practices and for reasons of data triangulation, different data collection instruments will be used, including expert interviews and interview templates, internal documents, questionnaires, publications about the studied company as well as company publications like annual and sustainability reports [20]. Most of the evidence will be collected through interviews. This approach is especially useful when research moves away from everyday phenomena, such as work practices, and more towards strategic phenomena, as is the case in this study [21]. Compared to other tools of qualitative research, interviews are also regarded as being more flexible, which allows the investigator to adapt to the interviewee's and the company's context [22]. From the various kinds of interviews discussed in the litera-

ture, guideline interviews are chosen for this study. Using a set of standardized questions, the interviewee is asked to focus on the topic of interest while leaving enough room to contribute additional information or to emphasize aspects which might be important for the case study, but had not been considered by the researcher before [23]. In order to gain insights from different angles and thus avoid biases and increase validity, it is planned to include at least four generic perspectives in the interview process. The identified perspectives are: (1) responsible for innovation strategy, (2) responsible for sustainability/ CSR/ stakeholder engagement, (3) responsible for R&D/ innovation and (4) R&D/ innovation manager. As a sample it is planned to focus on best-in-class companies. Some contacts have already been established with sector leaders from the 2013 Dow Jones Sustainability Index [24]. It is expected to gain valuable insights on needed capabilities for stakeholder engagement in the area of SOI from these companies.

The research project ultimately aims at developing a capability model for stakeholder engagement in SOI practices. It is expected to yield important contributions for theory and practice. In particular, the body of knowledge on sustainability-oriented innovation and stakeholder engagement is expected to be extended. Furthermore, a framework for assessing, benchmarking and improving firms' capabilities will be provided that will be useful for practitioners in R&D and innovation management as well as sustainability and stakeholder management.

Keywords

Sustainability-oriented innovation, stakeholder engagement, collaborative innovation, systemic innovation, dynamic capabilities

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