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Abstract

This chapter explains why stakeholder engagement is even more critical for environmental innovation than for traditional innovation, arguing that learning how to successfully engage stakeholders in environmental innovation is one of the most critical levers in transforming our organizations and economy towards environmental, as well as social, sustainability. Five theoretical lenses that are useful for thinking about stakeholder engagement in innovation are introduced: stakeholder theory, resource-based view, absorptive capacity, institutional logics and dynamic capabilities. The evidence from a systematic review of 88 peer-reviewed articles is synthesized into a framework for stakeholder engagement in environmental innovation, with each element of the framework illustrated with empirical evidence from eight case studies of environmental innovation partnerships. The framework sets out the engagement management, engagement learning and operational capabilities required to engage stakeholders in environmental innovation, as well as the outcomes and benefits of such engagement. Research directions are identified, and guidelines for practices are proposed.

Keywords:

Stakeholder engagement, environment, innovation, partnership, collaboration, sustainability

Introduction

“We believe that innovations required to create the future won’t come from a single source. Not from science. Not from technology. Not from government. But from all of us. We must harness the collective power of unconventional partnerships to dramatically redefine the way we thrive in the future.”

Hannah Jones, Global Head of Sustainability and Innovation, Nike

Firms across all sectors are coming under increasing pressure to incorporate environmental goals into their strategies alongside financial and social goals. While some progress can be made by simple operational efficiencies, global environmental challenges are so acute that step-change improvements are required. Achieving these in a manner that is synergistic with financial performance, rather than in tension with it, requires innovation. And that innovation tends to require expertise and ideas from outside the firm, through stakeholder engagement with organizations from nonprofits and supply chain partners to competitors and regulators. This chapter summarizes current knowledge on how to make this stakeholder engagement work.

In the next section, we expand on why stakeholder engagement is so important for environmental innovation. The second section outlines the theoretical perspectives that can help in understanding this topic. In the third section, we provide a framework that synthesizes what is known about how to generate successful collaborations and successful environmental innovations through such stakeholder engagement. Finally, we summarize the benefits of stakeholder engagement for environmental innovation and provide directions for research.

The chapter draws on three prior works. We present a capability-based framework (Figure 1) that is adapted from the authors’ article with Palie Smart in *Journal of Product Innovation Management* (Watson et al., 2018), which synthesizes literature through a systematic review. We then illustrate this framework using cases from Watson et al. (2020) and Watson et al. (2024).

This chapter contributes to our prior work and to other prior literature by demonstrating the consistency of the Watson et al. (2018) capability-based framework with case data; by discussing the range of alternative theoretical perspectives that provide complementary insights; and by summarizing research directions as well as management implications from what is already known about the vital topic of stakeholder engagement in environmental innovation.

Background: why engage stakeholders in environmental innovation?

The need for environmental innovation

Our human home is facing multiple interconnected environmental crises. Climate change, fuelled by human-induced carbon emissions, is altering weather patterns, intensifying natural disasters, and destroying habitats. Its effects are felt in rising sea levels, dwindling polar ice caps, and disruptions in agricultural patterns, risking food security for millions. Biodiversity loss is another critical concern, with rampant deforestation, habitat destruction, and species extinction rates accelerating at an alarming pace. This loss undermines ecosystem resilience and reduces nature's capacity to provide humans with vital resources (such as timber, textiles fibres, and rare earth metals) and services (such as clean air, water, and pollination). Pollution in air, water, and soil jeopardises both environmental and human health, with mounting

evidence that microplastics have now pervaded food chains across the globe.

There is growing pressure on businesses to respond meaningfully to these environmental crises. Mounting public concern for environmental issues is shaping consumer and employee preferences, with 58% of customers across the globe saying they buy or advocate for brands based on their beliefs and values and 60% of employees saying they chose a place to work based on their beliefs and value (Edelman Trust Institute, 2022). Regulatory pressures and evolving policies aimed at curbing environmental impacts necessitate a proactive response, as staying ahead of regulations ensures compliance, mitigates risks, and avoids potential fines or penalties. Investors too are increasingly seeing the link between strong environmental, social and governance (ESG) performance and long-term financial success through enhanced brand reputation, customer loyalty and better resilience to market fluctuations, regulatory changes, and reputational risks.

Increasingly, companies are recognising that they must respond to these changing stakeholder expectations by integrating sustainability into their core strategies, including their approach to innovation. Ultimately, businesses driving environmental innovation not only contribute to solving environmental problems, but also secure their own longevity by aligning with shifting market demands and regulatory landscapes, and by fostering a culture of innovation essential for long-term success.

In this chapter, we adopt a broad conceptualization of environmental innovation as the development, application, or adoption of new ideas, technologies, strategies, or practices that aim to reduce environmental impact, enhance sustainability, and promote resource efficiency. This encompasses a wide range of approaches, including technological advancements, process improvements, policy changes, and business models that address environmental challenges.

We next turn to the benefits of involving stakeholders in innovation generally, and in environmental innovation, in particular.

Stakeholder engagement in innovation

Stakeholder engagement is a term used to describe the organizational practices undertaken to involve stakeholders in a positive manner in organizational activities (Greenwood, 2007). One such activity is innovation (Ayuso et al., 2011).

Engaging stakeholders in the innovation process drives significant benefits (Chesbrough, 2012; Nonaka, 1991; Payne et al., 2008; von Hippel, 2005; West et al., 2014). Collaboration with stakeholders, including employees, customers, communities, and partners, can foster diverse perspectives, enrich creativity, and enhance problem-solving. Their involvement ensures alignment with real needs, leading to products and services that better meet market demands and societal expectations. Additionally, stakeholder engagement can cultivate a sense of ownership and commitment, boosting morale and loyalty, and fostering a supportive organizational culture. It also serves as an avenue for risk mitigation, as stakeholders bring insights that can foresee potential pitfalls or regulatory concerns. Moreover, involving stakeholders can bolster public trust, credibility, and goodwill, enhancing brand reputation and competitive advantage.

Stakeholder engagement in environmental innovation

Research suggests that environmental innovation demands even greater engagement with external stakeholders than traditional innovation (Albino et al., 2012; De Marchi, 2012; De Marchi & Grandinetti, 2013; Horbach, 2008; Klewitz & Hansen, 2014; Petruzzelli et al., 2011) and even that sustainability-oriented innovation depends on stakeholder collaboration activities

(Adams et al., 2016). As far back as 1998, Sharma and Vredenburg found a positive link between the proactivity of a firm's environmental strategy and its development of a capability for stakeholder integration, while Klewitz and Hansen (2014) found evidence to suggest that interaction with external actors can increase an organization's sustainability-oriented innovation capability.

Indeed, the need for collaboration between organizations is explicitly recognised by the United Nations as critical in supporting the achievement of the UN's Sustainable Development Goals, under Goal 17: Partnership for the goals. Beneath this headline goal, sub-target 17.6 calls for "knowledge sharing and cooperation for access to science, technology and innovation" and sub-target 17.G for "multistakeholder partnerships that mobilize and share knowledge, expertise, technology and financial resources."

There are four key reasons why stakeholder engagement is even more critical for environmental innovation than for traditional innovation.

First, innovative solutions to complex environmental problems often involve input and action from a diverse range of stakeholders – from communities and non-governmental organizations to government and other businesses. Their engagement ensures a more nuanced understanding of environmental issues, incorporating varied expertise, local knowledge, and needs into the innovation process. Most studies focus on engagement with users/consumers, suppliers, NGOs and/or governments (see Watson et al., 2018, p. 260 for an overview). There is substantially less research on engaging competitors in innovation. This is an important omission because in contexts where an organization seeks to effect change at an industry level, such as moderating the use of scarce resources or agreeing to reduce plastic use, then a key stakeholder for engagement is competitors within the sector. Environmental innovation that extends beyond product and process innovation to business model or system-level innovation, in particular, involves expertise sourced through external and unfamiliar collaborations (Albino et al., 2012; De Marchi & Grandinetti, 2013).

Second, solutions to a wide range of environmental issues and impacts, even for more straightforward product or process innovations, may sit outside of a business's core expertise, representing a technological frontier with which it is likely to require external support (De Marchi & Grandinetti, 2013). The pace of change in our understanding of environmental topics and technologies means companies do not find it easy to know everything they need to know to innovate alone.

Third, environmental innovation, by definition, drives environmental (and also often social) outcomes as well as financial outcomes. Engagements between businesses and nonprofit organizations (e.g. charities) are therefore uniquely positioned to create value across economic, environmental, and social dimensions (King, 2007) since nonprofits' primary purpose is the promotion of social and/or environmental goals (Murphy & Bendell, 2001). However, these contrasting organization types are very different from each other in terms of their institutional origins and the ways they assess success and failure (Driessen & Hillebrand, 2013; Polonsky & Ottman, 1998), making it potentially more difficult for them to work together.

Fourth, in the case of environmental innovation, companies are more likely to need to establish legitimacy for the action they are taking to reduce negative environmental impacts, or ideally, to generate positive impacts. This may be legitimacy with customers who need to accept a new product or way of doing things (e.g., renting rather than buying), or with communities whom the company may look to for support with their initiative.

Stakeholder engagement is, then, important for environmental innovation, if not crucial. In the next section we explore the theoretical lenses that can help inform our understanding of this phenomenon.

Theoretical lenses for stakeholder engagement in innovation

Several theories are useful for thinking about stakeholder engagement in innovation. We summarize the relevant key questions they address in Table 1.

Table 1: Theories and their relevance to stakeholder engagement in innovation

Theory	Questions addressed	Selected references
Stakeholder theory	Who should we listen to? Why? What influence do they have?	Mitchell et al. 1997. Polonsky & Ottman 1998.
Resource-based view	What resources and capabilities do we have? What resources and capabilities can our partner offer?	Hart 1995. Verona 1999. Sharma & Vrendenburg 1998.
Absorptive capacity	How can we usefully access external inputs?	Cohen & Levinthal 1990. Pittz & Intindola 2015.
Institutional logics	How do we cope with differences in perspective?	Ashraf et al. 2017.
Dynamic capabilities	How do we build a continuously improving stakeholder engagement capability?	Teece et al. 2007. Watson et al. 2018.

Stakeholder theory

An obvious place to start on this topic is stakeholder theory. Stakeholder engagement has commonly been understood by stakeholder theorists as a transactional process whereby managers learn what is important to their various stakeholder groups, process this information internally, and try to reconcile stakeholders' divergent, incompatible interests (Donaldson and Preston, 1995; Hill and Jones, 1992). Polonsky and Ottman's (1998) research into involving stakeholders in 'green' new product development found that, although stakeholders can cooperate with firms and assist in developing green products, they can also threaten the process and/or indirectly influence the firm's activities via motivating others to act.

More recent stakeholder engagement literature, however, has moved away from the idea of making trade-offs between interests, towards exploring the complementarity between stakeholders' resource allocations (Henisz et al., 2014) and the synergistic links between the demands of business and society (O'Riordan & Fairbrass, 2014). There is now a recognition that relationships with external stakeholders give firms access to resources outside their boundaries, augmenting the organizational resource base (Helfat et al., 2007). It is also understood that innovation-oriented stakeholder relationships are even more strongly geared toward resource reconfiguration than other types of alliances (Schilke, 2014).

Resource-based view

This emphasis on stakeholder resources, rather than stakeholder power or legitimacy, leads us to consider next the resource-based view (RBV) as an alternative theoretical lens for

stakeholder engagement. The RBV focuses managerial attention on the assets, capabilities, and competencies that have the potential to deliver superior competitive advantage. These could exist internally, or they could need to be acquired externally, including from the natural environment; see Hart's (1995) natural resource-based view.

As important examples of this approach, Verona (1999) developed a resource-based model for integrating stakeholders into new product development. He identified 'external integrative capabilities' that absorb critical knowledge and resources from external sources, and 'internal integrative capabilities' that share and use the acquired information across groups of internal stakeholders. At around the same time, Sharma and Vredenburg (1998) found that firms with proactive environmental strategies develop the capability to integrate resources from their stakeholders, suggesting that such a capability underpins the ability to be responsive to environmental challenges.

Absorptive capacity

Along similar lines, the concept of 'absorptive capacity' in innovation literature refers specifically to a firm's "ability to recognize the value of new information, assimilate it, and apply it to commercial ends" (Cohen & Levinthal, 1990, p. 128). According to Cohen and Levinthal, this capacity depends greatly on prior related knowledge within the organization (making it easier to find current knowledge to 'connect' incoming ideas with), as well as the diversity of background of the people receiving this knowledge.

As an example, Pittz and Intindola (2015) looked at absorptive capacity in the context of cross-sector partnerships, in which this prior related knowledge was likely to be lacking, due to the significant differences between the organizations (i.e. for-profit and nonprofit). In this context, they identified trust and goal interdependency as key antecedents of absorptive capacity.

A theory with good explanatory power when considering engagement between 'unlike' partners is institutional logics, to which we turn next.

Institutional logics

Institutional theory is concerned with how broader belief systems shape the cognition and behaviour of actors. Institutional logics are defined as "socially constructed rules of action, interaction, and interpretation that guide and constrain individuals and organizations" (York et al., 2016, p.581). Much of the research using an institutional logics lens has considered how 'hybrid' organizations combine different institutional logics within a single organization. For example, private medical providers must combine business and medical logics (Reay & Hinings, 2009), and microfinance providers combine development and banking logics (Battilana & Dorado, 2010; Vassallo et al., 2019).

However, this theory is also relevant to the study of firm engagement with diverse stakeholder groups as it can help us to think about how partners can cope with differences in perspective when they try to innovate together. For partners situated within the same institution (e.g. for-profit companies share a 'market' logic), that institution's values and related practices can provide common rules of engagement to guide the cognitions and behaviour of individuals from both parties. Often, however, the whole point of partnering is to access complementary resources (Austin & Seitanidi, 2012), through partnering with an organization with a different institutional heritage—for example, a charity or government organization with a 'social' logic (Watson et al., 2020). That can create challenges in working together.

Much research examining logic tensions in partnerships is therefore in the context of cross-sector ('social') partnerships (Ashraf et al., 2017; Dentoni et al., 2016; Selsky & Parker, 2005;

Sharma & Bansal, 2017) where partners' embeddedness in contrasting institutional fields can make the partnership vulnerable to conflict (Le Ber & Branzei, 2010). Broadly, this literature concludes that if cross-sector partners can effectively work together despite differing logics, then combining their complementary resources can solve social and environmental challenges which are difficult for each to solve alone (Jamali et al., 2011; Sloan & Oliver, 2013). Ashraf et al.'s (2017) quantitative study establishes that incompatibility of logics negatively impacts the survival of cross-sector partnerships, with power imbalance intensifying this adverse impact. However, this negative effect is moderated by partners' dependence on each other's resources, with higher interdependence seemingly compelling partners to compromise, even in the face of logic incompatibility. These authors thus bring together thinking from both the institutional logics perspective and the resource-based view. Watson et al. (2024) surface one way in which partnerships can get around the problem of incompatible logics: Developing a common 'engagement logic', a logic that applies to all those working on an innovation partnership, that draws on elements of both parties' own organizational logics.

Dynamic capabilities

Dynamic capability theory is an extension to the resource-based view. It is concerned with the combination of abilities an organization needs to purposefully adapt its resource base and maintain competitive advantage in response to external changes. Dynamic capability is defined as "the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments" (Teece et al., 2007, p.516), with dynamic capabilities (plural) being the set of more specific abilities required to do this.

The concept of dynamic capabilities has parallels with the concept of absorptive capacity, in that it is concerned with blending external and internal insight and resources to drive innovation. A difference from both absorptive capacity work and the original resource-based view is that dynamic capability literature focuses on organizational responses in fast-changing environments, and therefore is concerned with how companies continuously learn, adapt and reconfigure their resources so they are better set up to do even better next time.

We know that relationships with external stakeholders give firms access to resources outside their boundaries, which can augment or be used to adapt their organizational resource base (Helfat et al., 2007), and that stakeholder relationships driven by a need for innovation are more strongly geared toward resource reconfiguration than other types of more transactional alliances (Schilke, 2014). We also know that the threats posed by climate change impacts, biodiversity loss, and resource scarcity present complex and fast-changing challenges for organizations.

We therefore suggest it is particularly useful to construe stakeholder engagement for environmental innovation as a dynamic capability, because it involves companies being able to 1) assimilate and reconfigure diverse inputs from stakeholders, and 2) reconfigure the way they bring in inputs going forward, so they are continuously improving their stakeholder engagement and the innovation that can flow from it, making them better able to respond to an increasingly fast-changing environment.

In the next section, we present a synthesis of the literature on stakeholder engagement in environmental innovation, using a dynamic capability lens on that literature. We first summarize our literature review method before outlining the resulting framework.

A capability-based framework for stakeholder engagement in environmental innovation

Method

To define the set of capabilities that organizations need to engage with stakeholders, we first conducted a literature review applying Tranfield et al.'s (2003) systemic literature review approach. Using the search criteria shown in Table 2, we searched for peer-reviewed academic literature which could shed light on the question of “how firms engage with their stakeholders, from distinct institutional settings, to enable environmental innovation”. Using the inclusion and exclusion criteria shown in Table 3, we generated an initial set of 1,079 articles which appeared in a number of journals, and then applied a process of screening and extraction to identify a final set of 88 journal articles for review (Table 4). This set of articles included a range of different stakeholder types, from policymakers to suppliers and nonprofits (Table 5).

Table 2: Systematic review - search strings

Theme	Search string
Sustainability	(sustainab* OR environmental OR green OR ecolog* OR CSR OR ‘corporate social responsibility’ OR ‘social* responsib*’ OR ‘corporate social performance’ OR eco-innovation OR ‘green technology’ OR renewable* OR remanufacture* OR ‘triple bottom line’ OR eco-efficien* OR eco-effectiv* OR SDI OR eco?centric OR biomimicry OR ‘beyond greening’ OR ‘frugal innovation’ OR ‘reverse innovation’ OR ‘circular economy’ OR ‘closed-loop’ OR ‘life-cycle analysis’ OR ‘cleaner production’ OR ‘trickle up innovation’ OR ‘cradle-to-cradle’ OR ‘social innovation’ OR ‘bottom of the pyramid’ OR BOP OR ISO 14001)
Innovation	(innovat* OR R&D OR ‘research and development’ OR invent* OR ‘product development’ OR ‘new product development’ OR NPD OR ‘value proposition’ OR ‘process innovation’ OR “organi?* innovation)
Stakeholder	(stakeholder* OR consumer* OR customer* OR user* OR supplier* OR competitor* OR partner* OR communit* OR regulator* OR policymaker* OR government OR NGO* OR “non-governmental organi?ation” OR media OR employee* OR director* OR department* OR investor* OR entrepreneur*)
Engagement	(engagement OR interaction* OR marketing OR ‘relationship management’ OR collaborat* OR cooperat* OR co-operat* OR co-creat* OR co-produc* OR ‘open innovation’ OR ‘user innovation’)

Table 3: Systematic review - inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Study type	Empirical and theoretical / conceptual studies. Peer reviewed; working /conference articles included if high quality	
Language	English	Any other language
Sector	Private sector; can include private sector firms' engagement with public sector	Any study which does not include consideration of private sector firms
Date	1970 to 2014	Any study published before 1970
Relevance	<ul style="list-style-type: none"> • Sustainability innovation management • Addresses sustainability innovation and stakeholder engagement processes • Level of analysis – firm level practices and processes • Innovation consistent with environmental sustainability (can also include social and economic sustainability) 	<ul style="list-style-type: none"> • Not directly relevant to the research question – e.g. sustainability only in the sense of continuance; environment not relating to the natural environment • Level of analysis – not firm-level practices and processes (e.g. community initiatives/activities) • Innovation consistent with social but not environmental sustainability • Technical research on manufacturing/supply chain

Table 4: Journals with two or more articles in the systematic review

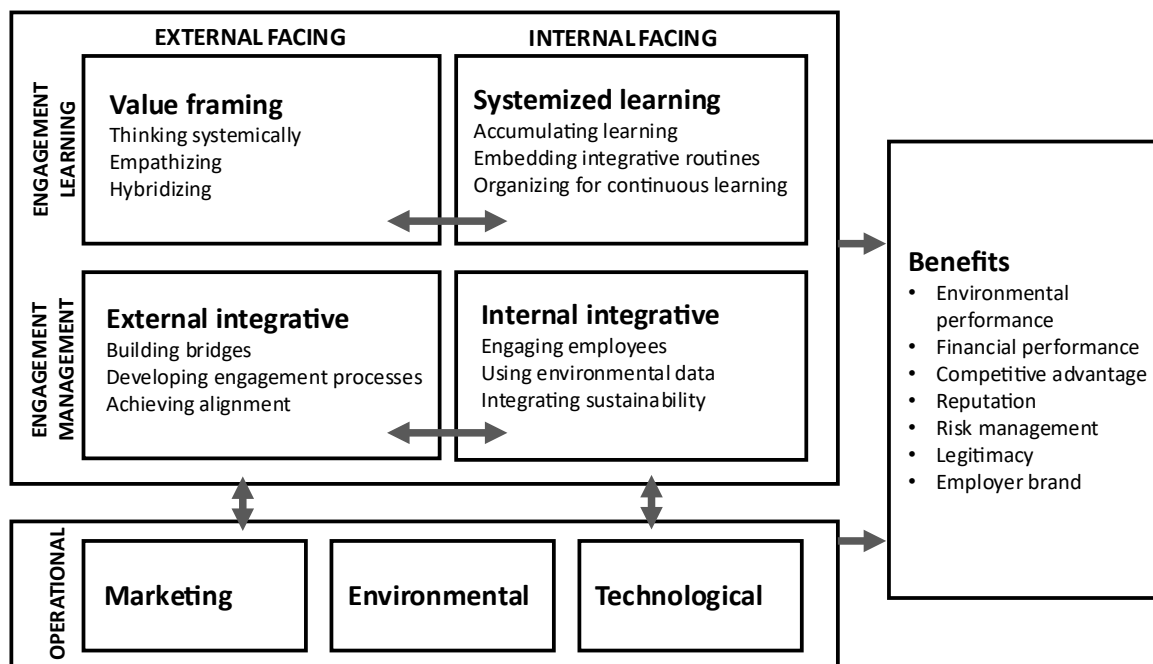
Journal title	No. of articles
Journal of Cleaner Production	17
Business Strategy & the Environment	11
Journal of Product Innovation Management	5
Journal of Business Ethics	4
MIT Sloan Management Review	4
Corporate Governance: The International Journal of Business in Society	3
European Journal of Innovation Management	3
Industrial Marketing Management	3
Ecological Economics	2
Industry & Innovation	2
R&D Management	2
Research Policy	2
Technovation	2
Total articles	60

Table 5: Systematic review - articles by type of stakeholder

Stakeholder type	No. of articles
External stakeholders	60
Users / consumers	9
Suppliers	9
NGOs / nonprofits	7
Government / regulators	5
Regional networks	3
Community	3
Universities	2
External - general	22
Internal stakeholders	28
Total articles	88

In synthesizing this literature, we adapted an existing model of product development capabilities (Verona, 1999) as a starting-point and used analytic induction (Bansal & Roth, 2000) to look for evidence which supported, amended or contradicted this prior theory, iteratively modifying the framework, as needed, to fit the data. This resulted in a conceptual framework of the organizational capabilities required to engage stakeholders in environmental innovation, shown in Figure 1. For a more granular version of this framework, see Watson et al. (2018).

Figure 1: Capabilities for stakeholder engagement in environmental innovation



As well as the systematic review, we conducted eight case studies of collaborative partnerships between a focal organization in the UK consumer-goods sector and a partner - such as a nonprofit organization. While some of the partnerships were dyadic, others involved multiple stakeholders (see Table 6). Importantly, since a partnership is a collaborative endeavour, we interviewed people involved in the innovation project from both the focal business and a focal partner organization. We drew on some aspects of this case data in Watson et al. (2020, 2024).

Table 6: Case studies of environmental innovation partnerships

CASE Focal business Partner	Number of interviews		Partner type	Innovation type	Context
	Total				
Case 1. CLOTHES Marks & Spencer Oxfam	7	4 3	Nonprofit	Process	Dyadic
Case 2. GADGETS Argos WRAP	5	3 2	Nonprofit	Process	Dyadic
Case 3. BEER Adnams M&S	6	4 2	For-profit	Product	Dyadic
Case 4. FREEZERS Unilever Greenpeace Other parties	6	2 2 2	Nonprofit; for-profit	System	Multi-stakeholder
Case 5. BEAUTY Walmart Forum for the Future Other parties	6	1 2 3	Nonprofit; for-profit	System	Multi-stakeholder
Case 6. PHONES Encom* Suppliers* Other parties	11	8 2 1	For-profit	Product	Multi-stakeholder
Case 7. SPORT Encom* ActiveAid*	6	4 2	Nonprofit	Process	Dyadic
Case 8. HERITAGE Adnams The National Trust	8	4 4	Nonprofit	Process	Multi-stakeholder / Dyadic
TOTAL INTERVIEWS	55				

* Encom and ActiveAid are pseudonyms. PHONES involved two anonymous suppliers

We next explain the framework of Figure 1, illustrating it with examples from these eight partnerships, supplemented with examples from our engagement with executives through sustainability teaching.

Framework overview

We know that companies require organizational capabilities, defined as “an organizational ability to perform a co-ordinated task, utilizing organizational resources, for the purpose of achieving a particular end result” (Helfat 2003, p.1), to achieve their goals. These include ‘operational’ capabilities that enable them to ‘make a living’ in an equilibrium state, as well as ‘dynamic’ capabilities that help them learn quickly and respond to changing external conditions.

Organizations engage with external stakeholders with the aim of enhancing the set of resources and capabilities available to them in achieving their goals. The activity of engaging stakeholders is not without challenge, so being able to successfully partner with other organizations can be considered an organizational capability in itself (Ayuso et al., 2011).

Taking Verona’s (1999) model of product development capabilities as a starting point, we used the data from the reviewed papers to identify and evidence the capabilities that were prevalent in cases of stakeholder engagement in environmental innovation. See Figure 1 for the resulting framework, along with benefits that arise from this stakeholder engagement. The capabilities are organized into three tiers:

- **Operational:** the basic technical capabilities to support stakeholder engagement.
- **Engagement management:** the capabilities which allow organizations to manage relationships with external stakeholders and assimilate acquired knowledge and resources internally.
- **Engagement learning:** the capabilities which allow organizations to continuously learn from, modify, and improve their stakeholder engagement activities.

Through the lens of dynamic capability theory, engagement management and engagement learning can be considered dynamic capabilities because they allow firms to integrate competencies from external stakeholders and use these to build and reconfigure their own resource base. Engagement management capabilities are what is known as ‘first-order’ dynamic capabilities (Collis, 1994; Winter, 2003), since they are routines that reconfigure the organizational resource base (Schilke, 2014). Engagement learning capabilities are what is known as ‘second-order’ or ‘higher-order’ dynamic capabilities: these are the routines that in turn reconfigure first-order capabilities (Collis, 1994; Winter, 2003). Second-order capabilities can be thought of as ‘learning-to-learn’ capabilities (Collis, 1994) or double-loop learning (Argyris & Schön, 1978). They comprise activities such as analysing what aspects of first-order dynamic capabilities work or do not work, codifying past experience and transferring knowledge within the organization.

To recap, companies deploy first-order engagement management capabilities to assimilate and reconfigure diverse inputs from stakeholders. They use second-order engagement learning capabilities to reconfigure the way they bring in inputs going forward – so they are continuously improving their stakeholder engagement and the innovation that flows from it.

The capabilities on the left of the framework in Figure 1 are those needed to access external resources, and those to the right act to integrate and reconfigure these resources internally. We next explain each capability in more detail, illustrating with case examples. Looking at Figure 1 from the top of the page down, we begin with the middle, engagement management layer.

Engagement management capabilities

An organization's *external integrative* capability absorbs critical knowledge and resources from external sources, while its *internal integrative capability* blends this with the knowledge and resources already in the company (Verona, 1999). In other words, firms absorb knowledge using external integrative capabilities; internal integrative capabilities then organize its use.

External integrative capability (external facing)

An external integrative capability facilitates companies' direct relationship with external stakeholders and how they go about absorbing knowledge and expertise. Three practices which together make up this capability emerged from our literature review.

Building bridges. Key to engagement management is recognising the need for, and putting in place, an individual or an organization who can act as a bridge between a company and its external partner. For example, Stafford et al. (2000) provide a detailed account of Greenpeace's role as a "strategic bridge" between a manufacturer of household appliances and its stakeholders to enable the development of a more environmentally friendly refrigerator. This collaboration evolved into a wider coalition called 'Refrigerants Naturally!', which looked to apply this technology broadly so as to reduce damage to the ozone layer. Individuals who play this bridging role have often worked across two or more sectors during the course of their career, and we increasingly hear of corporates deliberately hiring people with nonprofit or government backgrounds (and similarly charities recruiting those with a business background) to perform this role.

Developing engagement processes. A second critical element of engagement management capability is the development of processes and methods to engage with stakeholders in a way that encourages ongoing cooperation and trust. Key success factors for this include regular interaction, direct and open communication, non-hierarchical dialogue, allowing diverse points of view to be explored, empowerment, trust, and transparency (Heiskanen & Lovio, 2010; Hoffmann, 2007; Jamali et al., 2011; Mathur et al., 2008; McDonald & Young, 2012; Spena & De Chiara, 2012).

Across our cases, regular meetings and catch-up calls were used to create a continuing dialogue, with face-to-face meetings being cited as more likely to facilitate openness and honesty. For example, in the Refrigerants Naturally! coalition, meetings tended to be day-long and hosted at a neutral venue to help participants focus exclusively on the partnership. This intensive interaction allowed the individuals involved to share and strengthen personal missions which came to transcend their organizational identification and helped to create a strong group identity.

Achieving alignment. Also critical for external integration is aligning the goals of cross-functional and inter-organizational project teams. This occurs through mechanisms such as creating a shared vision, identification of multiple overlapping benefits, sharing experiences, using cooperative information systems, and involving the right individuals (Lee & Kim, 2011; Murphy & Arenas, 2011; Senge et al., 2007; van Bommel, 2011; Vergheze & Lewis, 2007). Our case evidence similarly suggests the need for mutually defined goals both for the joint project and for the individual partners, to avoid parties misinterpreting the relationship's intentions from their contrasting institutional perspectives.

However, our case research revealed an important subtlety to this idea of aligning objectives. Some partnerships were aligned around shared *ends*: for example, brewer Adnams and heritage charity The National Trust's informal relationship aimed to help both organizations to deliver

a reduction in carbon emissions through energy innovations. However, others thrived by aligning on shared *means* to contrasting ends. For example, a partnership between multichannel retailer Argos and environmental consultancy WRAP implemented a national retail trade-in scheme for consumer electronics. For WRAP, the innovation was a means to reducing negative environmental impact whereas for Argos, commercial benefits remained at the forefront:

“from a business case point of view, how we [Argos] can get new customers in, lock them in, give them a gift voucher for their product and then they’d spend more”

A third approach involved partners incorporating two different ends that they both believed were synergistic. An example is a coalition of suppliers convened by Walmart and nonprofit sustainability consultancy Forum for the Future (Forum). This coalition of suppliers of beauty and personal care products aimed to improve the beauty sector’s overall environmental sustainability. Walmart’s motivation was addressing changing consumer needs and thus maintaining financial success. By contrast their nonprofit partner, Forum’s aim was to reduce the sector’s negative impacts on the environment and health. Forum judged that to achieve scale in this system-change endeavour they needed to demonstrate its economic viability with high-profile market players. These ends were understood by both partners to be synergistic.

Internal integrative capability (internal facing)

An internal integrative capability allows an organization to share and use acquired information across groups of internal stakeholders (e.g., teams, departments, and functions). Insights from the literature suggest three practices which make up this capability.

Engaging employees. Employee engagement in environmental innovation can be influenced by the composition of teams (Bocken et al., 2014) and how business units and reporting lines are set up (Kiron, 2012; Kiron et al., 2013; Kruschwitz & Pflueger, 2012) as well as by the level of support provided by senior management (Bos-Brouwers, 2010; Kiron, 2012). In Marks & Spencer, the visibility and embeddedness of the company-wide ‘Plan A’ sustainability programme offered a supportive cultural context for their partnership with Oxfam, offering a wide network of engaged employees across functions with whom Oxfam could work. This partnership developed an innovative proposition called Shwopping, whereby Marks & Spencer customers could return their clothes to Oxfam and receive coupons for money off their next Marks & Spencer purchase. By contrast, we saw examples of reporting lines making it very difficult for externally sourced knowledge to be shared internally: A joint initiative between utility company Encom and charity ActiveAid reported into three different Encom functions over three years (sustainability, commercial, and public relations), leaving ActiveAid feeling that Encom lacked a common understanding of what the partnership stood for.

Using environmental data. Gathering and sharing environmental information using tools such as web-based software platforms, databases, design aids, and environmental management systems (EMS) helps firms identify innovations and facilitate the internal collaboration required to implement them (de Kraker et al., 2013; Gmelin and Seuring, 2014; Hallstedt et al., 2010; Horbach, 2008; Lenox and Ehrenfeld, 1997). For example, in the Shwopping case, Oxfam’s ability to report back to Marks & Spencer the number of items of clothing diverted from landfill (the key environmental metric of interest to Marks & Spencer) as well as the sales value of items collected (Oxfam’s priority metric) was cited as key to ongoing trust in the partnership’s ability to monitor the scheme’s success across all relevant dimensions.

Integrating sustainability. Environmental innovation requires collaboration between functions such as marketing, R&D/innovation, operations, and sustainability/corporate responsibility (Carrillo-Hermosilla et al., 2010; Chang & Lin, 2014; Dangelico & Pujari, 2010; de Medeiros

et al., 2014; Driessen & Hillebrand, 2013; Pujari, 2006; Pujari et al., 2003, 2004). This can be achieved by integrating environmental criteria into processes such as strategy development, product development, marketing, and performance management across functions. Specific examples include integrating environmental impact analysis within marketing practices such as market research (Pujari et al., 2004) and including green issues in new product development procedures (Driessen & Hillebrand, 2013).

In some of our case companies, sustainability objectives needed financial justification (or a ‘business case’) on a case-by-case basis. By contrast, in other organizations, we saw this integration being achieved through a formalised sustainability plan and objectives (e.g. Marks & Spencer’s Plan A and Unilever’s Sustainable Living Plan). Integration was aided in other cases by a strongly held belief that ‘doing good’ (social and environmental value) tended to lead to ‘doing well’ (economic value), and therefore that “*sustainability is good business*” as an executive at brewer Adnams put it. Or as their partner, The National Trust, put it:

“they’re open, honest people that are trying to make the world a better place and selling beer.”

We now move on to explaining in more detail the engagement learning capabilities in the upper tier of our framework.

Engagement learning capabilities

An organization’s *value framing* capability allows it to harness the potential value creation derived from engaging with stakeholders by constructively navigating differences in their logics. A *systematized learning* capability allows the organization to share the learning from specific instances of stakeholder engagement more widely across the organization, and therefore reconfigure their human and capital resources accordingly, so that the organization can continually develop and improve its stakeholder engagement capabilities.

Value framing (external facing)

A value framing capability enables organizations to navigate and harness the differences in the ways of seeing the world that exist between them and their stakeholder groups. Instead of seeing these differences as unassailable conflict or as opposing positions which have to be negotiated to a compromise, managers in firms with this capability think about the complete system operating beyond the immediate boundaries of the innovation context. They empathize with the alternative value frames of their collaborators and harness these differences by using them to rethink (or reframe) the problem, combine competencies in new ways, and co-create innovative solutions. Three practices comprise this capability.

Thinking systemically. First, an organization should consider the interests of all the stakeholders involved in the complete system of relevance to the potential innovation, both within the organization and beyond its boundaries (Senge et al., 2007). Internally, differences in value frames between departments can hinder or limit the scope of environmental innovation (Lenox & Ehrenfeld 1997; Pujari et al. 2003), so this requires an organization to set a purpose for environmental innovation that is greater than the individual agendas of its internal functions. Externally, thinking systemically means “focusing on issues that are larger than individual organizations and improving the related systems that can benefit all” (Senge et al., 2007, p.52). For example, automotive firms may need to shift their attention from individual company needs (such as government-funded subsidies) towards the collective needs faced by all industry players, in order to progress towards a more sustainable future for the industry (Holweg, 2014) and in order to successfully position themselves within that future.

Empathizing. Organizations should also create the time and space to reflect on the differences in value frames between themselves and their stakeholders, independently and in dialogue with those stakeholders. Senge et al. (2007) describe this as “relational work” which involves “moving beyond ‘politeness’ or win-lose debates into more authentic and reflective interactions characterized by candour, openness and vulnerability” (p.47). This includes listening openly to stakeholders, without applying filters that may be associated with the listener’s own value frame. For example, Aschehoug et al. (2012) found that the cultural frame of a department affected the way it responded to environmental information available from external stakeholders, resulting in a substantial gap between the information available and what the firm actually knew. In a similar vein, Hoffmann (2007) reported that the ability of a company to learn from customer involvement in sustainable product development was limited by filtering mechanisms constraining the company to information considered important by the recipient.

Immersing organizational members, beyond those in the immediate project team, in their partner’s world emerged from our cases as a key enabler of empathy, and often involved physically taking people to visit partner sites. For example, Encom’s contact centre staff visited projects funded by their customer fundraising club. Similarly, an Oxfam project manager explained how visits by the Marks & Spencer teams to Oxfam’s emergency warehouse helped M&S employees understand the criticality of the fundraising aspects of the Shwopping project, and hence Oxfam’s ability to provide urgent humanitarian aid:

“They can see items, where it’s labelled, actually to go to Syria or wherever it’s to go to. And they’re like, “Wow! That’s real”

Hybridizing. Hybridizing involves acknowledging organizational tensions between partners’ respective logics and co-creating appropriate solutions. Acknowledging tensions between logics is key to facilitating radical thinking around new solutions to existing problems (Driessen & Hillebrand, 2013). Once this tension is acknowledged, stakeholders can co-create solutions which deliver benefits to all parties involved, where ‘co-creation’ is defined as working together to redefine what is valued and expected or desired on an individual and collective bases (Vargo & Lusch, 2011). Le Ber & Branzei (2010) describe this hybridization process as stakeholders initially contrasting their divergent understanding of a problem (‘diagnostic frames’) and then working together to deliberately develop a partnership-specific understanding of possible solutions (‘prognostic frame’). In some close partnerships, this working together can be underpinned by the creation of an ‘engagement logic’ specific to the partnership (Watson et al., 2024).

Systematized learning (internal facing)

A systematized learning capability allows organizations to learn from individuals working with stakeholders on innovation projects, by sharing that learning across the organization, and reconfiguring their human and capital resources accordingly. Thus, the organization is ‘learning to learn’ and continually developing its stakeholder engagement capabilities. Systematized learning is enabled by a value framing capability because organizations who are able to question the boundary conditions, frames or assumptions of the problems at hand have the potential to achieve ‘higher order’ learning (Quist & Tukker, 2013). Three broad dimensions of a systematized learning capability can be inferred from the literature.

Accumulating experiences. Organizations learn to integrate multiple stakeholder issues over time by applying the learning from one stakeholder engagement and applying it to the next, making this capability difficult to build overnight or copy (Driessen & Hillebrand, 2013). These experiences can be from individuals within the firm, from previous innovation projects, and from benchmarking what other companies are doing. Rather than the insight residing only with

the team which owns that stakeholder relationship (e.g. sustainability teams for NGOs, marketing for customers, and public affairs for policymakers), firms need to be able to aggregate this learning at an organizational level. For example, Unilever develops online resources including case studies and best practice guides relating to sustainability initiatives that involve external partners, that can be accessed by other employees.

Embedding integrative routines. Organizations also need to embed the learning from these experiences across the organization. This includes reflecting on what works with respect to stakeholder engagement and sharing and embedding that across the organization (Ayuso et al., 2006, 2011; de Medeiros et al., 2014), albeit not in such a rigid way as to reduce the opportunity for future learning. Unilever has done this in two ways. Firstly, they have built a team of experienced, specialist managers with deep partnership expertise who tend to take the lead on particularly sensitive or conflictual relationships. Secondly, they assign one of these partnership ‘experts’ as a mentor to other managers who are new to representing Unilever in collaborations, as a way to embed and share their accumulated knowledge more widely.

Organizing for continuous learning. This capability involves achieving an organizational context (comprising structure, physical resources, individual actors and culture) which is open and flexible enough to allow the management of external stakeholder relationships to continuously evolve in response to what has previously been learnt. A similar capability has been termed “knowledge reconfiguration” in the product innovation literature, defined as “the creation of an ‘open’ structure that makes it possible to redefine role systems and relational patterns in a flexible way in order to make it easier to recombine resources continuously” (Verona & Ravasi, 2002, p. 579). Our review suggests that, in the context of environmental innovation, this could include reconfiguring the supply chain to enable reverse logistics for end-of-life product take-back (Roy & Whelan, 1992), or changing the organizational structure (Horbach, 2008) particularly to a non-hierarchical structure that favours direct communication and proximity between people (Ayuso et al., 2006). It also involves providing “flexible structures and systems that facilitate the development of new ideas” (Ayuso et al., 2006, p.485) and “an organizational context to support experimentation and the seeking of opportunities at the business/natural environment interface....through employee compensation systems and by facilitating management discretion” (Sharma and Vrendenburg, 1998, p.742).

Returning to the Unilever example again, a key approach to embedding sustainability into core strategy has been to task all the major Unilever brands to adopt and embody an appropriate social purpose. As a consequence, the core training of brand managers has changed to include an emphasis on systems-thinking as well as organizational thinking – and on how to mark out collaboration space as well as competitive space.

Operational capabilities

Finally, the dynamic capabilities outlined in our framework need to be underpinned by fundamental operational capabilities. These comprise three main categories: marketing; technological; and increasingly for all businesses, environmental:

- *Marketing capabilities* include skills for new product development, exchanging information and addressing the needs of broader sets of stakeholders, as well as relationship building.
- *Technological capabilities* including scientific expertise, manufacturing and design expertise, and technological complementarities.

- *Environmental capabilities* include environmental expertise, monitoring and communicating environmental performance, and championing environmental sustainability.

For more discussion of these operational capabilities, see Watson et al., (2018), pp 270-271.

The outcomes and benefits of stakeholder engagement

From our multiple reviews of literature which we have briefly summarized in this chapter, the primary outcome of stakeholder engagement is environmental innovation across three categories – product, process and organizational (Klewitz & Hansen, 2014). Similarly, the findings that emerge from the eight cases in this chapter include environmental innovations at the level of product, process and wider system. The literature furthermore evidences a range of benefits accruing to organizations who engage with stakeholders in these innovations:

- *Environmental performance*: Reducing environmental impacts (including in supply chains); reducing carbon emissions; eco-efficiency; efficient use of raw materials, energy, and other resources; optimized consumption thorough the use of renewable and recycled materials.
- *Financial performance*: Increased revenues; cost savings; increased demand for products and services; increased market share; access to new market segments; more efficient processes; pooling resources; increased profitability.
- *Competitive advantage*: Market opportunities; new business models; new markets; new commercially viable products; innovative services; development of innovative capabilities; enhanced creativity; access to knowledge and expertise; new technological resources; improved management of disruptive change; faster adoption/customer acceptance of innovation.
- *Improved reputation*: Brand value; brand recognition; customer satisfaction; trust, improved image, and compliance with future legislation; attracting new customers; understanding and fulfilling customer needs; consumer patronage; employee morale and retention.
- *Risk management*: Reliable supply of high-quality material for production; better control over suppliers; reduced uncertainty of future policy; reduced reputational risk; reduced risk of negative publicity; management of uncertainty; risk sharing.
- *Legitimacy*: Compliance with environmental laws and regulation; lowering of future regulation; development of industry standards.

Conclusions

There is an expectation on businesses today to “profitably solve problems of people and planet and not profit from causing them” (Mayer, 2018). Environmental innovation is a crucial route to achieving this, enabling firms to respond creatively to shifting customer and stakeholder demands while remaining viable and resilient into the future. Stakeholder engagement is a critical enabler of environmental innovation, bringing in the diverse perspectives, expertise and ideas required to create solutions to complex, systemic challenges. However, engaging diverse stakeholders in creative problem solving is not straightforward, and requires businesses to develop specific competencies as we have shown in Figure 1. Key competencies include the ability to look beyond organizational boundaries to understand the wider system in which a business operates; the ability to empathize with partner organizations’ values and perspectives, and therefore find ways to align what might first appear to be incongruent objectives; and the ability to take learning from external engagement and share it back into an organization, so learning can be accumulated over time and inform changes in internal structure and processes.

However, much still remains to be discovered. We identify a number of research directions in Table 7. Longitudinal research into this phenomenon will allow us to analyze the effects of stakeholder engagement over time, and a possible link between the maturity of a firm’s stakeholder engagement capabilities and more radical and systemic forms of innovation. It will also be enlightening to further explore what enables stakeholder engagement to translate into valuable organizational learning and what needs to happen for pairs or networks of organizations to all become wiser through their mutual interactions.

Table 7: Research directions

Societal impacts	Sustainability includes environmental and societal impacts. Our research was particularly focused on environmental innovation. Do the findings equally apply to societal innovation?
Longitudinal perspective	Neither the reviewed papers nor our own empirical research gathered longitudinal data yet, given the complex problems the partners seek to address, analyzing the effects of stakeholder engagement on environmental innovation would be better studied over longer periods.
Beyond dyads	Our research largely focused on dyadic partnerships. How do our findings apply to networks of more than two organizations collaborating for environmental innovation? How do they apply in supply chains and networks, for example?
Relative size and power	To what extent do issues of relative size and power moderate our findings, for example, a large multinational for-profit working with small nonprofits, large nonprofits working with small businesses, nonprofits of different scale working together, etc?
Capability-innovation types	What is the link between types of environmental innovation and the capabilities they require? Do more systemic innovations demand different capabilities?
Systemized learning	While there was evidence for systemized learning capability, this was less evident across the case studies than the other capabilities. What contextual aspects moderate the prevalence of this capability? Relevant differentiating characteristics might include: Learning culture of the organization; organizational willingness to apply technology to aid learning; individual employee enthusiasm and aptitude for learning; regulation and consumer pressure in the external environment.

Meanwhile, some clear guidelines for practice can be drawn from this research:

- When engaging stakeholders in environmental innovation, companies should recognize that a difference in perspectives between partners represents a challenge, but also an opportunity.
- Companies may also need to look out for differences in goals and perspectives between various internal functions which may hamper positive collaboration.
- Partners can find ways to align seemingly incongruent or conflicting goals through aligning on means rather than ends or recognizing the synergy of their respective ends.
- As well as developing skills in managing stakeholder engagements, companies need capabilities which make constructive use of differences to reframe problems, combine competencies in new ways and co-create innovation solutions (value framing capability).
- Structure and processes can help an organization “learn to learn” from its stakeholders. This occurs if the organization supports the accumulation and sharing of learning from stakeholder engagement and facilitates continuous learning about how best to engage stakeholders (systematised learning capability).
- These two capabilities are linked since a value framing capability helps organizations question the assumptions around the problem in hand, and therefore be more receptive to learning opportunities from engagement with external stakeholders.
- These capabilities are likely to be useful for engaging stakeholders in other forms of innovation as well as environmental innovation.

Squaring the circle between financial goals and environmental ones is a daunting challenge, particularly in for-profit enterprises. Stakeholder engagement for innovation can realise the potential for these goals to be conceptualised and pursued as synergistic and not in conflict. Environmental innovation can also do more than just help individual organizations to ‘do their bit’; we have seen numerous examples of collaborative innovation that contributes to the broader system change that is essential if we are to scale up innovations with the rapidity that is required. Learning how to successfully engage stakeholders in environmental innovation is therefore emerging as one of the most critical levers in the vital challenge of transforming our economy towards environmental, as well as social, sustainability.

Additional teaching resources

Teaching cases featuring three of the environmental innovation partnerships featured in this chapter are available for order from the Case Centre (<https://www.thecasecentre.org/>):

- Make-Up or Break-Up? The Marks & Spencer and Oxfam Shwopping Partnership
- Brewing a Partnership: Adnams and The National Trust
- Unilever-Greenpeace: Collaboration or Collision?

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