



embedding sustainability in organizational culture

A Systematic Review of the Body of Knowledge



Network for
Business Sustainability

Business. Thinking. Ahead.

Prepared by
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Lisa Papania and Daniel Papania,
Simon Fraser University



93% of CEOs see
sustainability as important
to their company's future
success.¹

¹ According to the 2010 UN Global Compact-Accenture CEO Study "A New Era of Sustainability".

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But how can they embed sustainability into their company? Which practices are most effective?

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2010

Network for Business Sustainability

Additional resources,
including an executive report and
supporting slide deck, are available at
www.nbs.net/knowledge/culture.

Dear Reader,

One question I hear often is: how do we ensure that sustainability remains engrained in the organization after the CEO or sustainability officer leaves? I am delighted to share with you this report, which addresses this critical question. It is the culmination of a full year's effort to compile and synthesize the best academic research in the area. As both an academic researcher and Executive Director of the NBS, I know this report fills an important gap in our knowledge.

At the Network for Business Sustainability, we believe that the innovative, frame-breaking solutions required for sustainability will come only through cross-sectoral collaboration. The development of this report embodies this philosophy. A group of managers representing a range of private and public sector organizations told us they wanted this issue researched. A committee comprised of five managers and one researcher helped guide the research team. The result is a report that we hope has broad appeal—to both the communities of research and practice.

Stephanie Bertels and her research team must be commended for their ability to navigate this process. They skilfully scoped an unmanageably broad topic to be relevant to managers and to identify key gaps for future research. Dr. Bertels and her team embody the notion of 'engaged scholarship.'

This report is just one of several produced by the Network for Business Sustainability that aim to assemble the best research evidence for practical problems. Each report forms a piece of the puzzle that will help move business forward on the path toward sustainability. By working together we will build resilient organizations and ensure a healthy, happy and prosperous future.

Sincerely,



Dr. Tima Bansal
Executive Director, Network for Business Sustainability
Professor, Richard Ivey School of Business, The University of Western Ontario, Canada

Dear CEOs, HR Leaders and Sustainability Leaders,

Businesses can be susceptible to contracting 'flavours-of-the-month.' Because it is imperative that sustainability becomes more than just a passing fad, the NBS Leadership Council identified 'embedding sustainability in corporate culture' as one of our priorities for 2010.

This report is the result of a year's work to compile what the international research tells us about embedding sustainability in culture. The research team filtered through thousands of articles and books to summarize the best available evidence and provide you state-of-the-art information for your decision-making.

We would like to direct you to the key framework, found in the executive report and on page 14 of this report. This tool will help you identify gaps in your current program and implement new practices to integrate sustainability into the fabric of your organization.

Please review the detailed list of practices in the report. I'm confident you will find some practices you've never before considered. Sustainability requires us to be bold and try new things. Together, we can make sustainability part of the DNA of business.

The fact that you are reading this report bodes well for the future of your organization and our society. Please share it with your colleagues. We hope that it helps you on your sustainability journey.

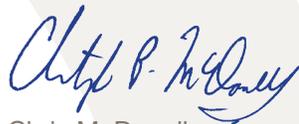
Sincerely,



Peter MacConnachie, Sr Sustainability Issues Manager, Suncor Energy Inc.
On behalf of the NBS Leadership Council Subcommittee for Embedding Sustainability



Grete Bridgewater,
Director, Environmental
Management Systems
Canadian Pacific



Chris McDonnell,
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CHAPTER 1

Introduction

In the last decade, sustainability has become an increasingly integral part of doing business in any industry. For companies to balance their financial, social, and environmental risks, obligations and opportunities, sustainability must move from being an add-on to ‘just the way we do things around here.’ As organizations work through these changes, business leaders are starting to recognize that organizational culture plays a fundamental part in the shift toward sustainability. Yet, despite a multitude of corporate sustainability reports that describe sustainability as ‘the way we do business,’ most business leaders lack a clear understanding of how to embed sustainability in their day-to-day decisions and processes. Leading firms, including those that make up the Network for Business Sustainability’s Leadership Council, are looking to understand how to ‘sustain’ sustainability over the long term.

Every year, the Network for Business Sustainability (nbs.net) funds systematic reviews based on the top priorities identified by its Leadership Council. In 2009-2010, the Leadership Council identified embedding sustainability in corporate culture as a knowledge priority. This project aims to summarize what we know about how firms go about making sustainability an everyday, enduring part of the organization, something that has both penetration and traction. In writing this report, our aims were to summarize what we know (and don't know) about embedding sustainability in organizational culture and to provide a framework for thinking about the practices that may support this process.

To this end, we've undertaken a large-scale systematic review of both academic and practitioner sources related to embedding sustainability in organizational culture. Given that culture is a broad topic, we initially cast a wide net. We identified 13,756 academic and practitioner articles and reports using an extensive set of keywords related to the topic. Our focus was on work that specifically addressed embedding sustainability; however, we also saw the potential to learn from other well-studied analogous cultural interventions such as health & safety, high-reliability organizations, legal compliance, and the implementation of total quality management.

Preliminary screening narrowed this pool to 701 of the most promising sources. These sources were reviewed in detail to identify 96 highly relevant materials on embedding sustainability. This included 82 academic articles and 14 practitioner articles and books that explored the theme of sustainability and culture. We also retained 83 sources that examined analogous cultural interventions. Using this data set of 179 sources, we conducted extensive, detailed analysis and synthesis of the materials to extract the various practices that may support embedding sustainability.

In conducting our review, we found instances where practitioner knowledge leads theory. Practitioners are advocating practices that researchers have not yet studied in any detail. We also found numerous instances where academics proposed practices that were not directly tested in their own work. Rather than limit our examination to empirically tested practices, we identified all the relevant practices regardless of the level of empirical support and documented whether each instance had been proposed, empirically tested and supported or was empirically tested and unsupported. Based on this analysis, we developed the framework on embedding sustainability presented in this report. The full details of our methods are presented

in Appendix A of this report. The set of articles, reports and books that make up our data set are listed in Appendix B.

Our review of previous research and practice reveals the following issues:

- Embedding sustainability into culture is still an emerging field of research. There has been a limited amount of research addressing how to embed sustainability in organizational culture. In this area, practice often leads theory.
- The research that has been conducted on embedding sustainability continues to be dominated by exploratory, case-based research with an emphasis on success stories.
- There is a lack of clear definitions (what academics call construct clarity) in this field—terms are used somewhat interchangeably and are often not defined.

This report attempts to address some of these issues by presenting a framework to help practitioners evaluate their efforts to embed sustainability and to help researchers contextualize their own work within the larger field. Additionally, we have tried to lend 'construct clarity' by providing a set of working definitions with examples to begin to establish a common vocabulary for the field and to differentiate terms that both practitioners and academics have previously used interchangeably.

WHAT IS A CULTURE OF SUSTAINABILITY?

To define what we mean by a culture of sustainability, it will be helpful to understand what we mean by sustainability and also what we mean by culture. While there are many different definitions of sustainability, the most frequently cited comes from the World Council on Economic Development, which advocates operating in ways that "meet the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland, 1987).

In practice, business sustainability consists of managing the 'triple bottom line.' This includes decision-making that takes into consideration financial, social, and environmental risks, obligations and opportunities. This means more than just accounting for environmental and social impacts in corporate reporting. Sustainable businesses are resilient and create economic value, healthy ecosystems and strong communities. Sustainable businesses survive over the long term because they are intimately connected to healthy economic, social and environmental systems.

We view sustainability as a goal rather than as an end point. In today's business environment, sustainability is something that many companies are striving toward, but few (if any) have yet achieved. One key component of this journey involves embedding sustainability into organizational culture.

Like sustainability, organizational culture is also defined in many different ways. Academic definitions make reference to shared assumptions and values as well as expected behaviours and symbols. An organization's culture guides the decisions of its members by establishing and reinforcing expectations about what is valued and how things should be done. For this reason, culture is often described as 'the way we do things around here.' Over time, an organization builds up its own culture, providing a sense of identity to its members about 'who we are' and 'what we do.' An organization's culture is both reinforced and reshaped through the daily practices of its members.

...a culture of sustainability is one in which organizational members hold shared assumptions and beliefs about the importance of balancing economic efficiency, social equity and environmental accountability.

For our purposes, a culture of sustainability is one in which organizational members hold shared assumptions and beliefs about the importance of balancing economic efficiency, social equity and environmental accountability. Organizations with strong

cultures of sustainability strive to support a healthy environment and improve the lives of others while continuing to operate successfully over the long term.

WHAT DIFFERENTIATES SUSTAINABILITY FROM OTHER CULTURE CHANGE INITIATIVES?

Organizations launch change initiatives—even cultural change initiatives—all the time. In fact, many organizations are undergoing multiple change initiatives simultaneously. There is an enormous literature on organizational change from a strategic perspective as well as on specific kinds of culture change such as implementing total quality management, building cultures of health and safety or building cultures of compliance. While the lessons learned from these kinds of culture change may prove useful, a shift toward a culture of sustainability presents some unique challenges.

Most organizational change initiatives are largely confined to the boundaries of the organization. In contrast, sustainability is part of a broader societal agenda that extends beyond the organization. The motivation for a sustainability change initiative can often be driven by external forces and, at times, the benefits may not appear to directly enhance value. In cases where the change is motivated internally, the change may be initiated because one or more organizational members deem it to be 'the right thing to do.' Furthermore, key levers required for change may be beyond the control of the organization and may reside in the organization's supply chain or with its key stakeholders. This often means that organizations embarking on a sustainability journey must be willing to engage in significant interorganizational collaboration. Lastly, and perhaps most importantly, transitions to sustainability may involve the need for paradigm-breaking business models or approaches.

In our review, we focus on summarizing what we have learned from both research and practice about embedding sustainability into organizational culture. However, we also draw information from analogous cultural interventions such as total quality management, the health and safety movement, and studies of high reliability organizations and attempt to draw parallels to embedding sustainability.

HOW TO NAVIGATE THIS REPORT

Framework:

The next chapter (Chapter 2) explains how we developed our portfolio framework for embedding sustainability into organizational culture. We make extensive use of this framework in the remainder of the report. This framework groups categories of practices into four quadrants based on both the intended outcome and approach required.

Practices:

The next four chapters (Chapters 3-6) are organized around each of the four quadrants and are intended to help you understand each of the practices in more detail. Each chapter focuses on one quadrant and provides detailed descriptions of each practice, grouped by category. You can read or skim all of these chapters, or you can simply refer to particular practices as you need them.

Each quadrant is divided into categories of practices and these categories are divided into individual practices. Each practice is defined and followed by a list of examples. A discussion of what we currently know (and do not know) about the practice follows the examples. We outline the recommendations from practitioners, consultants and researchers and describe any findings from empirical studies. Where available, we suggest what lessons the sustainability movement can glean from research on analogous interventions in the areas of health and safety, ethics, total quality management, and high reliability organizations, recognizing that there may be limitations to the application of this knowledge to this domain.

Lastly, and perhaps most importantly, for each practice, we make an overall assessment of how confident we are in its effectiveness, based on the existing body of research. You will note that each practice is accompanied by an indication of the 'level of support.' For each practice, we make an overall assessment of the state of the research and whether the given practice has been proposed but not yet tested; is weakly supported; or supported. Here's how to interpret these assessments:

Proposed but not tested:

These practices have been raised by your peers, consultants and academics as having the potential to build or support a culture of sustainability. They may work, but have not yet been tested empirically. We suggest that you consider trying these practices, but that you monitor and assess their effectiveness on a regular basis.

Weakly supported:

These practices have received limited testing. Practices in this category have been identified as part of academic case studies of leading firms or have received a limited amount of attention as part of a study with a related but different focus. Again, we suggest that you consider trying these practices, but that you monitor and assess the outcomes.

Supported:

These practices have received empirical support in the literature. These are your 'go to' practices. When assembling a portfolio of activities, try to include practices from this category. In the body of this report, supported practices are denoted with ✓.

Next Steps:

The report concludes in Chapter 7 with a call to action for managers and researchers. We begin by discussing how practitioners can use the framework and practices described. Next, we map out a future research agenda in the area of embedding cultures of sustainability. Lastly, we call upon practitioners to contribute to this emerging research agenda by offering up their knowledge about what has (and has not) worked in their own organizations.

CHAPTER 2

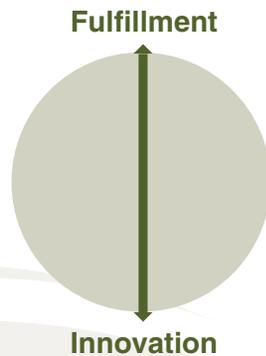
A Portfolio of Practices for Embedding Sustainability

The members of the NBS Leadership Council that commissioned this study wanted to know *how* to embed sustainability in organizational culture. In constructing this review, we are not addressing all of the ways to be a sustainable organization. Instead, this review is targeted at those organizations that have made some strategic choices about their pursuit of sustainability and in the process, have identified a need to strengthen their organization's sustainability culture.

Consequently, in conducting our analysis of the available practitioner and academic literature in this area, our focus was on organizational practices that build and support a culture of sustainability. As we read each source, we asked ourselves the following questions: what are they doing; who is doing it; what are they trying to accomplish; and how are they going about it? Our analysis of the 179 sources that make up this review revealed a multitude of different ways that organizations can work to embed sustainability into organizational culture. In the end, we identified 59 distinct practices. We examined these different practices and grouped them in a way we anticipate will be meaningful for businesses. The practices varied on two main dimensions relating to intent and their approach. These two dimensions are described below.

INTENT: WHAT ARE YOU TRYING TO ACCOMPLISH?

As we compared the practices, we found that they appeared to target two different sustainability goals: fulfillment and innovation. On the path to sustainability, organizations often face tensions between ensuring they meet existing sustainability commitments (fulfillment) and making way for changes that will help them improve their sustainability performance in the long run (innovation). These two goals form the vertical axis of our framework.



FULFILLMENT

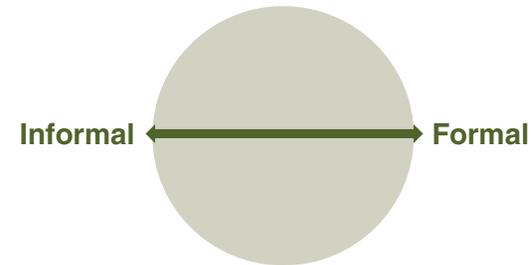
Practices aimed at fulfillment were those targeted at delivering on current sustainability commitments or implementing current sustainability initiatives. These practices involved discussions about what the organization ‘should do’ and emphasized compliance, operational excellence and targeted reinforcing or refining what the organization was already doing in the area of sustainability.

INNOVATION

In contrast, practices aimed at innovation were those that attempted to find ways to do things differently or better. These practices involved discussions of what the organization ‘could do’ and involved experimenting, learning, and trying new things.

APPROACH: HOW ARE YOU GOING ABOUT IT?

The practices were also grouped into two different approaches to meeting goals: informal and formal. There is an ongoing interplay between these two approaches and both impact culture. Managers should be aware of the existence and impact of both ‘soft’ and ‘hard’ approaches to building culture.



INFORMAL

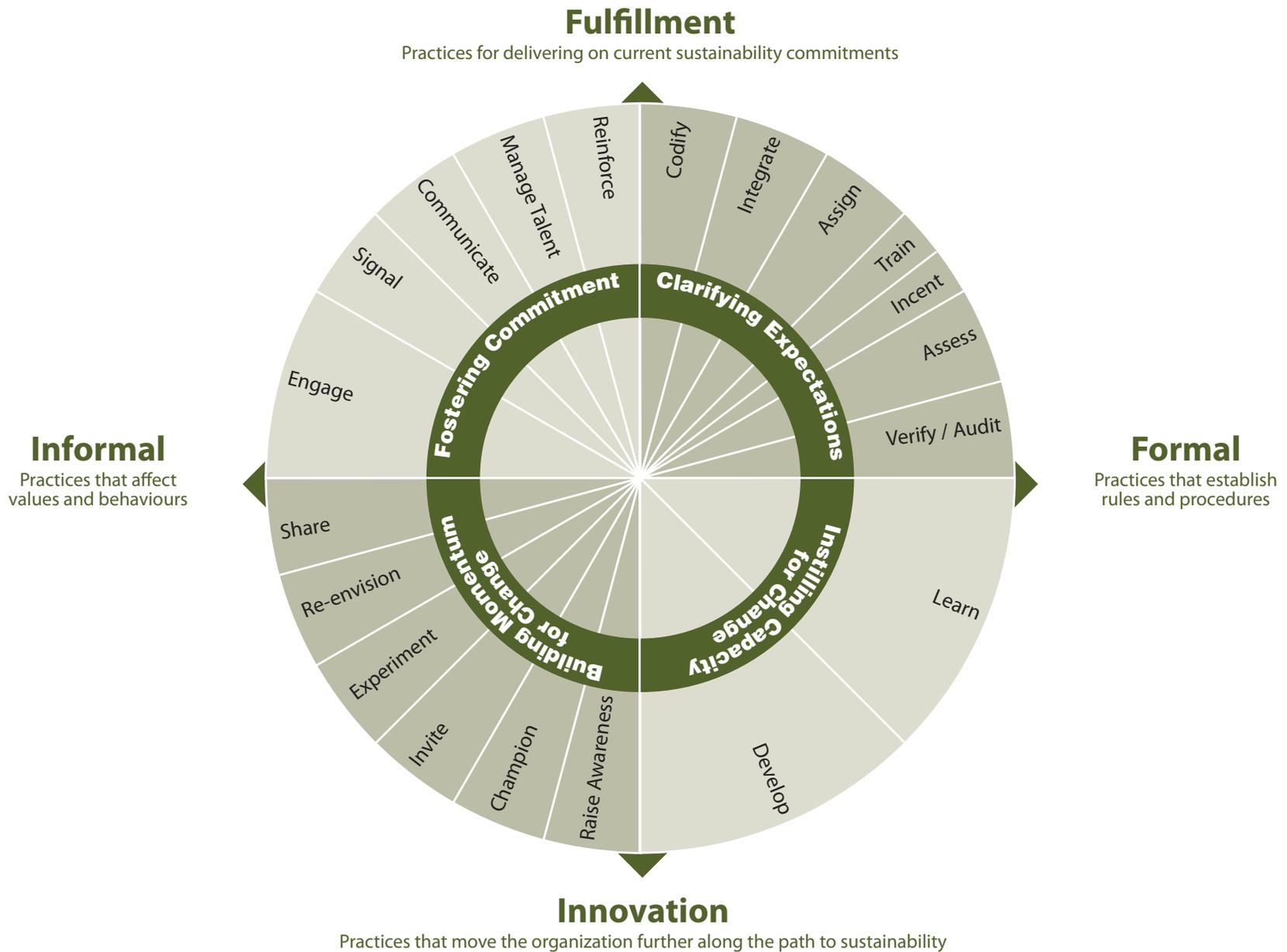
Informal approaches to shaping an organization’s culture target people’s values as well as social norms. A social norm is an expectation that people will behave in a certain way. Norms (as opposed to rules) are enforced by other members of the organization through the use of social sanctions. Norms and values are generally passed on and shaped through observation or experience. Thus, informal approaches aim to establish and reinforce shared values and shared ways of doing things that align the organization with its journey to sustainability. This is often accomplished through discussion, through experiences and by modelling desired behaviours.

FORMAL

Formal approaches to shaping an organization’s culture involve trying to guide behaviour through the rules, systems, and procedures. The idea is to codify and organize values and behaviours that have developed informally. This is often accomplished by generating documents and texts such as codes of conduct, procedures, systems, and training materials and by implementing programs.

A PORTFOLIO APPROACH TO EMBEDDING SUSTAINABILITY

When we combine these two dimensions, the result is the following framework for embedding sustainability:



These four quadrants represent different ‘types’ of practices that can be employed to embed sustainability into organizational culture. We’ve called the quadrant that depicts the informal practices aimed at fulfillment ‘fostering commitment.’ The formal practices aimed at fulfillment are about ‘clarifying expectations.’ The informal practices aimed at innovation relate to ‘building momentum for change.’ Finally, the quadrant that contains the formal practices directed at innovation we’ve called ‘instilling capacity for change.’ These four quadrants and their associated categories and practices are briefly introduced below and described in much more detail in the following chapters.

FOSTERING COMMITMENT (Informal Practices Aimed at Fulfillment)

Engage	Signal	Communicate	Manage Talent	Reinforce
✓ support educate link challenge leverage capture quick wins recognize	✓ model ✓ allocate resources commit self-regulate adhere to standards accommodate work-life balance invest in the community	tell stories customize	recruit allocate people promote	inform repeat follow up

Practices in this quadrant aim to build and reinforce the importance of sustainability for the organization and to support and encourage those who are making efforts to embed sustainability. There are five categories of practices: engaging; signalling; communicating; managing talent; and reinforcing.

CLARIFYING EXPECTATIONS (Formal Practices Aimed at Fulfillment)

Codify	Integrate	Assign	Train	Incent	Assess	Verify/Audit
✓ create policies set goals operationalize	✓ into product design and life cycle into mission, vision and values into strategy and business plans into business into existing roles	✓ assign responsibility to senior leaders ✓ create roles	✓ train	incent	inventory develop metrics monitor / track report	audit verify

The practices in this quadrant aim to integrate sustainability into the core of the organization’s strategies and processes; equip and encourage employees via training and incentives; and measure, track, and report on the organization’s progress. There are seven categories of practices: codifying; integrating; assigning responsibility; training; incenting; assessing and verifying/auditing.

**BUILDING MOMENTUM FOR CHANGE
(Informal Practices Aimed at Innovation)**

Raise Awareness	Champion	Invite	Experiment	Re-envision	Share
✓ frame trigger	✓ champion	ask listen seek external help	✓ experiment	define sustainability back-cast	share knowledge internally share knowledge externally collaborate with others

Practices in this quadrant aim to support a culture of sustainable innovation by developing the new ideas needed to bring your organization closer to its long-term sustainability goals. These practices inspire and reassure employees so that they can experiment, try new things, and build on each other’s ideas. The categories in this quadrant are awareness raising; championing; inviting; experimenting; re-envisioning; and sharing.

**INSTILLING CAPACITY FOR CHANGE
(Formal Practices Aimed at Innovation)**

Learn	Develop
scan benchmark pilot learn from failure reflect	develop new business processes and systems develop new products and services

Practices in this quadrant aim to create structures or supports that will form a foundation for future changes in the organization. The categories in this quadrant are learning and developing.

SUPPORT FOR A PORTFOLIO APPROACH TO EMBEDDING SUSTAINABILITY

We propose that organizations should draw from all four quadrants in their efforts to embed sustainability. Similar to the need to consume food from each of the four food groups, we speculate that a balanced approach is required. Though we currently have no evidence to support the interactions between these quadrants in particular, it is likely that practices in one quadrant will support and reinforce practices in other quadrants. Indeed, the literatures on health and safety and on embedding cultures of ethical conduct demonstrate the need to employ a portfolio of strategies.

McCarthy and Blumenthal (2006) found that it was a combination of practices that supported one organization's process of safety improvement. These practices included assessing current safety levels; training employees about safety; adaptation

of safety measures for each department; regular communication with senior management to enable implementation of improved safety measures; measurement and analysis of results; and organizational communication of success stories. Similarly, Benson and Ross (1998) found that embedding a culture of ethical conduct requires a range of practices including the appointment of a known and respected champion to manage the firm's ethics program; the selection of key employees to implement the program throughout the organization; the creation of clear policies detailing the firm's position on ethical issues; the provision of training for all employees on these policies and how they have been integrated into firm operations; and independent verification of the success of the program. Although the task of embedding sustainability into organizational culture may differ from these other culture change initiatives, we expect that drawing from a portfolio of practices will be necessary to achieve sufficient penetration and traction.



CHAPTER 3

Fostering Commitment

In this chapter, we discuss the informal practices aimed at supporting the goal of delivering on existing sustainability commitments. These practices aim to motivate employees to get involved, to reinforce the importance of sustainability for the organization and to support and encourage those who are making efforts to embed sustainability.

Five categories of practices are discussed in this section: engaging; signalling; communicating; managing talent; and reinforcing. In each sub-section below, we describe the practices that fall into these categories.

PRACTICES**Engage**

- educate
- challenge
- link
- support
- leverage
- capture quick wins
- recognize

Signal

- commit
- model
- allocate resources
- self-regulate
- adhere to standards
- accommodate work-life balance
- invest in the community

Communicate

- tell stories
- customize

Manage Talent

- recruit
- allocate people
- promote

Reinforce

- inform
- repeat
- follow up

ENGAGE

This category consists of informal practices that attempt to raise the level of employee engagement throughout the organization. These practices aim to generate interest and excitement among employees about the journey toward sustainability and to encourage the active participation of all employees in sustainability initiatives. These practices help motivate employees to act in a way that brings the organization closer to its sustainability goals. The practices that relate to engagement include educating; challenging; linking; supporting; leveraging; capturing quick wins; and recognizing.

EDUCATE: Raise the level of awareness and understanding of sustainability through the provision of information in informal ways

- Include sustainability information in company newsletters, on bulletin boards, or in memos
- Bring in speakers to talk about sustainability issues
- Host internal workshops, conferences or trade shows

Practitioners note the importance of providing information about sustainability to increase the awareness and understanding of the concept among employees. While little research has explored the role of informal education, Molnar and Mulvihill (2003) note that inviting in industry leaders to speak to employees can inspire new sustainability initiatives. We discuss the formal practice of training in the next chapter.

Assessment: Proposed but not tested

CHALLENGE: Encourage and recognize good ideas or effort through internal competitions

- Organize sustainability competitions between business units or regional units to motivate sustainability performance
- Use internal competitions as a means to generate and identify new ideas

Several practitioners have suggested that internal competitions can be used to build interest in sustainability, to generate new ideas and to identify and recognize good ideas. These practitioners suggest that it is important to keep a positive frame on the competitions, but when done correctly, that competition can be a good motivator (Ethical Corporation, 2009; NBS, 2010).

In one example, described by Goodman (2000), business units were awarded additional training resources for energy, water and waste reductions. This initiative resulted in significant reductions across the company.

More research is needed to explore further the role of competition in embedding sustainability.

Assessment: Weakly supported

LINK: Bring sustainability down to the individual level by connecting the impact of everyday actions at work with sustainability at home (and vice versa); connect organizational sustainability activities to personal sustainability activities (and vice versa)

- Encourage employees to bring their personal sustainability behaviours into the workplace
- Encourage employees to carry the organizational sustainability message into their communities

Bringing sustainability down to the level of individual actions appears to make it more concrete. Further, linking employee actions at work to their behaviours at home and in their communities appears to reinforce these behaviours. One senior manager recommended encouraging staff to bring their personal sustainability behaviours into the workplace (Ethical Corporation, 2009). A practitioner in Goodman's (2000) study suggested that messages about sustainability are attractive when employees can also use the knowledge in their private lives. Hart (2005) encourages organizations to allow employees to align their values with their job.

Research by Bansal (2003) in the area of sustainability begins to provide support for this idea. Her research demonstrates reciprocal links between organizational and individual actions.

In the quality literature, Blackburn and Rosen (1993) describe how leaders in quality improvement reinforce a 'prevention-oriented approach' by providing personal health and safety services to employees. Not only do these practices emphasize the organizations' proactive approach to problems, but they create a positive and satisfying environment for employees.

Linking is a practice that has received preliminary support in the literature, but still requires more study.

Assessment: Weakly supported

✓ **SUPPORT: Make it easier for employees to make choices that favour sustainability**

- Make it easier for employees to make sustainability decisions at work
- Provide support for employees to make sustainability decisions in their personal lives such as transit pass programs, ride-sharing, and secure bicycle parking

Companies can build a culture of sustainability by making it easier for employees to make sustainable choices at work and in their personal lives. As an example, Shrivastava (1995) cites management's provision of corporate vans for employee ride-sharing as reinforcing its commitment to sustainability and building employee morale. Another company has a fleet of smart cars for work-related travel during the day so that employees can still take transit to and from work (NBS, 2010).

Ramus and Steger (2000) found that employees were more likely to develop and implement creative ideas that positively affected the natural environment when they perceived supervisory encouragement for doing so. Bansal (2003) also found that management's support of employees' sustainability activities contributes to a culture of sustainability. In the innovation literature, Stopford and Baden-Fuller (1994) explain how chief executives of organizations in their study supported learning by removing barriers to teamwork and collaboration through the abolition of separate dining rooms for managers and teams.

Supporting is a practice that appears to be supported empirically.

Assessment: Supported

LEVERAGE: Condone, encourage and support grassroots efforts; try to amplify the effect of activities initiated by individuals or small groups

- Provide small grants or time off for sustainability projects launched by employees
- Provide company time to meet about conceiving and launching CSR initiatives

Another way to embed sustainability is to leverage the grassroots efforts of your employees. Practitioners have suggested that leveraging can be a way to let employees drive positive change (NBS, 2010; Willard, 2009). Suggestions to leverage 'grassroots' efforts include providing company time to meet about

conceiving and launching sustainability initiatives (Strandberg, 2009) or providing small grants to support projects initiated by employees or stakeholders (NBS, 2010). Bansal (2003) notes that in one company, the efforts of one individual to encourage recycling resulted in a recycling table at which all organizational members could donate or pick up used office supplies.

The practice of leveraging did not receive any specific empirical attention in the research reviewed here.

Assessment: Proposed but not tested

CAPTURE QUICK WINS: identify and complete changes related to sustainability that are less demanding of resources or that result in readily identifiable benefits (also called 'low hanging fruit')

- Start with the 'low hanging fruit'

Identifying 'quick wins' or 'low hanging fruit' is cited by practitioners as a means to build momentum for sustainability within the organization. Dunphy and colleagues (2003) suggest small successes can be used to overcome areas of resistance. Interface started with 'quick wins' but after they exhausted the 'low hanging fruit' they found that they needed to develop a more structured plan for moving to the next state (DuBose, 2000).

In the quality literature, Manley (2000) explains that capturing quick wins is an important tactic for demonstrating that a new approach is effective in order to encourage already-enthusiastic supporters to get behind future quality improvement programs.

Capturing quick wins appears to be a practice well suited to building momentum; however, none of the empirical work reviewed here specifically examined its effectiveness and at what stage along the sustainability trajectory it is best employed.

Assessment: Proposed but not tested

RECOGNIZE: Show awareness of, approval of, or appreciation for efforts to implement sustainability through informal accolades

- Publicly recognize employees at staff meetings
- Create sustainability awards
- Hold celebrations

The practice of informal recognition is mentioned frequently by practitioners and researchers. Unlike the formal practice of incentives in which compensation is directly tied to specific sustainability measures or outcomes, recognition involves informal attempts to indicate approval or appreciation for efforts to improve organizational sustainability.

Doppelt (2003) recommends the creation of awards as well as celebrating sustainability successes regularly. In contrast, Willard (2009) cautions that rewards and celebrations may produce short-term results rather than long-term motivation. Based on their findings, researchers have also suggested that rewarding individual efforts can help build commitment to sustainability (Angel del Brio et al., 2008; Smith & Brown, 2003).

In the innovation literature, Beck (1987) describes how employees adopted Bank of America's innovation culture through small gestures of recognition. A small pin presented by the CEO or high-level management gave encouragement to employees who enacted the organization's values and refocused management styles toward promoting and supporting these values. The chief executives in Stopford and Baden-Fuller's study (1994) encouraged innovation through financial and status rewards for teams and individuals. Blackburn and Rosen (1993), in their study of embedding cultures of quality improvement, find that awards communicate to employees that the organization values their quality improvement efforts.

While these and other studies suggest that informal recognition and rewards may be a mechanism to support sustainability efforts, the efficacy of different informal rewards has not been well studied at this stage.

Assessment: Weakly supported

SIGNAL

Signalling practices are those that serve to identify sustainability as a priority for the organization. An organization's actions send strong messages regarding its position on sustainability to its employees. This category of practices includes actions or gestures that serve to communicate the importance of sustainability to employees in informal ways. These practices include committing publicly; modelling; allocating

resources; self-regulating; adhering; accommodating work life balance; and investing in the community.

COMMIT: Have the organization and/or senior leadership team make a public commitment to sustainability

- Make your sustainability commitments public
- Include sustainability messages in company presentations and press releases whenever possible
- Include sustainability targets and performance in company publications such as annual reports

One way to signal a commitment to sustainability is for the organizational leadership to speak openly about their sustainability goals and their progress toward them. According to some practitioners, committing publicly to sustainability targets can serve as a powerful motivator (NBS, 2010). There are many ways to get the message out: company presentations, speeches by senior leadership and press releases all provide opportunities to reiterate the organization's commitment to sustainability. Making commitments in your sustainability report can also serve as an important driver for internal performance and priority setting by holding departments publically responsible for meeting these commitments (Ethical Corporation, 2009).

Turning to the research on this topic, we find that an external message may have a stronger impact on organizational members than a message that is delivered only internally (Hagen, 2008). It also appears that leading companies do discuss sustainability more openly. In a study by Howard-Grenville et al. (2008), high-performing environmental facilities were also those that were more likely to raise environmental issues in their communications with others outside of the organization. More research needs to be done to understand how public commitments drive internal sustainability implementation.

Assessment: Weakly supported

✓ MODEL: Enact the roles and behaviours organizational leadership wishes employees to emulate

- Demonstrate sustainability leadership by 'walking the walk' and 'talking the talk'

- Participate in ongoing discussions about the journey toward sustainability
- Prioritize sustainability in discussions and decision-making
- Back up colleagues and your employees when they prioritize sustainability
- Show interest in the work of sustainability committees

Practitioners and researchers both point to the commitment of senior management and the board as critical success factors for embedding sustainability. According to practitioners, it is imperative that senior management and the board signal their support for sustainability (Dunphy et al., 2003; Epstein, 2008; Ethical Corporation, 2009; Strandberg, 2009; Willard, 2009). As one practitioner noted: “If the CEO is talking about it then everyone notices” (Ethical Corporation, 2009: 13).

People are far more likely to try out new behaviours if they see them modeled by others they respect and admire (Wirtenberg et al., 2008). Leadership from senior management and the board regarding sustainability objectives gives credibility to the goals being pursued throughout the organization. Senior leadership can signal their commitment by ‘practising what they preach’ including prioritizing sustainability in their decision-making (Epstein, 2008).

Backing up subordinates when they make a decision to prioritize sustainability is another way to send a strong signal (Howard-Grenville et al., 2008). Werre (2003) suggests that senior leaders need to show interest in the work of sustainability committees and participate in the ongoing dialogue around sustainability. Leaders can also look for opportunities to reinforce positive steps that employees are taking to substitute sustainable behaviours for unsustainable ones (Doppelt, 2003). The order in which you say things speaks volumes; consider placing sustainability at the top of the agenda at every staff meeting (Doppelt, 2008). The key is to ensure alignment and consistency between the organization’s sustainability goals and the actions of its senior leadership.

Several researchers have found links between top management support for sustainability and sustainability implementation or cultures of sustainability (Adriana, 2009; Angel del Brio et al., 2008; Bansal, 2003; Berry, 2004; Bowen, 2004; Cordano & Frieze, 2000; Dixon & Clifford, 2007; DuBose, 2000; Esquer-Peralta et al., 2008; Goodman, 2000; Holton et al., 2010; Molnar & Mulvihill, 2003). In particular, Andersson et al. (2005) found that when values of ecological

sustainability were strongly espoused among top management, supervisors translate and enact these values in their everyday interaction with subordinates at the operational levels. Sharma (2000) found that leaders need to legitimate environmental issues as an integral part of the corporate identity.

Harris and Crane (2002) caution that while positive modelling can yield benefits, a negative instance of modelling can be highly detrimental. For instance, in one company, when the Chairman denounced green initiatives as nonsense at the company Christmas party, it dampened the greening efforts being undertaken.

In the ethics literature, a study by Elankumaran, Seal and Hashmi (2005) echoes these findings and Harris and Crane’s (2002) warning. The authors found that employees at Tata Steel looked to the managing director for cues on how to behave with respect to ethical issues.

Overall, this body of research supports the need for upper management to model their commitment to send the signal that sustainability initiatives are legitimate and valued. Modelling is a highly supported practice.

Assessment: Supported

✓ **ALLOCATE: Back up the commitment to sustainability with an allocation of time, money, and people**

- Provide company time to participate in sustainability committees
- Allocate personnel to execute sustainability initiatives
- Provide financial resources for upgrading equipment or developing new processes

Another way to signal the importance of sustainability is by allocating resources. Several practitioners and researchers suggested that allocating time and money to an issue helps place it on an organization’s strategic agenda (Andersson & Bateman, 2000; Buysse & Verbeke, 2003; Chamorro & Bañegil, 2006; Darnall & Edwards, 2006; DuBose, 2000; Dunphy et al., 2003; Strandberg, 2009). Several more have found evidence that allocation of resources supports the implementation of sustainability and/or acts as a signal to stress its importance for the organization (DuBose, 2000; Holton et al., 2010; Molnar & Mulvihill, 2003; Roome, 2005; Weiskillern, 2004). For instance, Molnar and Mulvihill (2003) found that continuous funding is needed to maintain sustainability momentum and implement change.

For a leading firm in Roome's (2005) study, allocating resources helped the operation meet internal targets and find solutions to sustainability problems. Sharma (2000) suggests providing managers with time and resources they can apply to creative problem-solving at their discretion. Senior leadership needs to both allocate resources to sustainability and communicate that they are willing to do so (Dunphy et al., 2003).

This echoes findings from the quality literature. For example, Handfield and Ghosh (1994) and Blackburn and Rosen (1993) demonstrate that a culture of quality is embedded through committing extensive resources in the form of senior-level managers, high-quality training, systems for performance measurement, and time for meetings at the division level.

Allocating resources is a practice that has received support in the literature.

Assessment: Supported

SELF-REGULATE: implement voluntary initiatives; adopt best practices in the absence of, or in advance of, regulation

- Adopt voluntary codes of practice developed internally or at the industry level

Voluntary initiatives are often the starting point for the move from being a compliance-based organization to one that is pursuing sustainability. Self-regulating is about making choices; it is about being willing to place constraints on how the organization operates in order to make faster progress towards a desired future.

Howard, Nash and Ehrenfeld (1999) propose that going beyond compliance to adopt voluntary codes or practices can be a mechanism for building a collective identity around sustainability. The authors note that the codes themselves establish new norms, and while they often lack strong external sanctions for non-compliance, the potential for transformation rests in the potential for peer pressure both internal to the company and from industry peers who have also adopted voluntary codes. Howard-Grenville et al. (2008) note that organizations that pursue beyond-compliance initiatives may be more concerned with matching their behaviours to evolving social norms. Therefore, at this stage, it is unclear what role self-regulation plays in embedding sustainability and whether self-regulation is a leading or lagging indicator of a culture of sustainability.

Assessment: Weakly supported

ADHERE TO STANDARDS: Comply with a recognized set of standards related to environmental and/or social performance

- Gain certification from outside agencies such as Fair Trade, EcoLogo, Forest Stewardship Council or LEED
- Gain certification for your environmental management system or sustainability management system (such as AA 1000, EMAS, GRI, ISO 14001)

Many organizations seeking to embed sustainability will choose to make investments in some form of environmental management system (EMS) or sustainability management system (SMS). Some will choose to develop an in-house solution while others will prefer to implement a recognized external system such as AA 1000, EMAS, GRI, and ISO 14001. Companies may also pursue product or process specific certifications such as Fairtrade, Ecologo, the Forest Stewardship Council or the LEED green building system.

Adhering to outside standards may signal both internally and externally that a firm is taking responsibility and moving towards sustainable development (Beske et al., 2008) and that things are being 'done correctly' (Holton et al., 2010). Other researchers have suggested that adherence to standards and seeking certification can reinforce sustainability objectives (Hagen, 2008); lead to continuous improvement (Annandale et al., 2004); and improve internal morale (Howard-Grenville et al., 2008).

However, the role of adherence to standards in embedding sustainability is still not entirely clear. As in the case of self-regulation noted above, it is unclear whether the adoption of standards is a leading or lagging indicator of a culture of sustainability. In particular, Bansal and Hunter (2003) found that the prediction that ISO 14001 certification would reinforce a firm's commitment to quality or social responsibility was not supported. These authors suggest that early adopters of ISO 14001 may have been aiming to reinforce their existing strategy (and by extension, may have already developed a culture of sustainability, which led them to embark on certification). For now, we can only say that adherence to outside standards appears to reinforce a culture of sustainability.

Assessment: Weakly supported

ACCOMMODATE WORK–LIFE BALANCE: Make an effort to address family-life commitments and social benefits for employees, and to see employees as a whole person and part of the community

- Provide social benefits for employees
- Support job flexibility
- Support the personal growth of employees

Another way to signal the importance of sustainability for the organization is to implement programs that attempt to balance the demands of working life and home life for employees. Efforts to make working life and family life more compatible include flexible work schedules, part-time work, and social benefits for employees. These practices signal an understanding of the social dimension of sustainability. By supporting these types of practices, an organization creates alignment between what they say and how they operate.

While these practices were proposed both by practitioners and researchers, we found no research that explored the impact of accommodating work–life balance on embedding sustainability.

Assessment: Proposed but not tested

INVEST IN THE COMMUNITY: Contribute to the community and encourage and enable employees to do the same

- Contribute to community causes
- Permit employees to take paid or unpaid time off to volunteer
- Match contributions made by employees
- Select a corporate cause and involve all levels of the organization in supporting it

Practitioners have proposed that investing in community causes and allowing employees to take paid or unpaid time off to focus on volunteering opportunities builds commitment to sustainability (Dunphy et al., 2003; Epstein, 2008; Ethical Corporation, 2009; Laszlo, 2003; NBS, 2010). Despite this, we found no empirical studies that examined the effect of investments in the community and policies regarding employee volunteerism on building and supporting a culture of sustainability.

Assessment: Proposed but not tested

COMMUNICATE

The informal practices presented in this quadrant rely on the ability to communicate both the value of sustainability and the changing priorities and expectations for how work gets done. We identified two core practices related to communicating: storytelling and customizing. Storytelling makes use of relatable anecdotes and examples to convey sustainability concepts. Customizing refers to attempts to tailor the organization’s message to ensure that it is authentic and relevant for different internal and external audiences.

TELL STORIES: Convey desired sustainability behaviours through the use of examples and stories

- Discuss case studies of successful sustainability initiatives in your organization
- Create stories about what the company could be like in the future
- Create simple stories and repeat them often, using different means
- Start every meeting with a quick sustainability story
- Use metaphors and symbols

Dunphy and colleagues (2003) propose that storytelling can open up lines of communication, create integration opportunities and develop a commitment to new values. Esquer-Peralta et al. (2008) suggest sharing case studies of successful sustainability initiatives in the organization, including the lessons learned along the way. Hagen (2008) found that stories that present the company as further along the journey can inspire people to live up to the ideal. One organization emphasized the importance of finding a simple story that can be repeated often and in many ways so that everyone in the organization becomes familiar with it (van Marrewijk and Becker, 2004). Another organization starts every meeting with a quick sustainability story (Ethical Corporation, 2009). Andersson and Bateman (2000) found that the use of metaphor and symbolism can be another powerful means of conveying sustainability messages.

Jassawalla and Sashittal (2002) explain how storytelling is used to create the “true believers and adherents” (p. 45) essential for embedding innovation. Their research reveals that stories are necessary for teaching organizational members how to think about and adopt new ways of doing things.

While none of the research reviewed here explicitly explored storytelling's impact on embedding sustainability, several practitioners and researchers suggested its value. More research is needed to understand the potential value of storytelling.

Assessment: Proposed but not tested

CUSTOMIZE: Make or alter to individual or group specifications

- Translate and adjust your message for different groups or, in the case of multinational firms, for different cultures
- Adjust your message for delivery in different types of media
- Transform your message by adjusting the terminology for different operational divisions and levels

Customization is about taking the key messages about sustainability and making them more relevant for the intended audience. Different groups within the organization may be receptive to different styles and means of communication.

In the case of multinational firms, this may involve addressing the local context to ensure the message has local relevance (Ethical Corporation, 2009). Esquer-Peralta et al. (2008) suggest the need to tailor your message by using terminology that will be familiar to the particular audience. Part of the process of embedding sustainability appears to involve translating abstract sustainability concepts into language that enables employees to understand their application in day-to-day business (Wei-Skillern, 2004). Reverdy (2006) notes that cross-functional work groups can be helpful in this translation process.

The safety literature identifies the need to customize outside, related practices for the local context when creating a culture of safety (McCarthy & Blumenthal, 2006); and the need modify standard targets to particular settings in order to gain team member buy-in (Manley, 2000).

There is preliminary support for the value of customizing key sustainability messages. More research is needed to understand this practice.

Assessment: Weakly supported

MANAGE TALENT

The practices in this category describe how staffing decisions support the transition toward sustainability. Managing talent involves hiring people with the passion,

attitude and competence to deal with environmental and sustainability issues in their daily work and placing the right people in the right roles across the organization. We cover three practices in this section: recruiting, allocating and promoting.

RECRUIT: Identify and hire people with a sustainability orientation or sustainability skills

- Refer to sustainability values, goals and performance in recruiting materials
- Integrate sustainability into all job advertisements
- Make sustainability part of all job descriptions for new hires
- Select new employees on the basis of a commitment to sustainability
- Attempt to foster productive diversity through hiring decisions

To build and support a culture of sustainability, an organization's recruiting and selection processes should strategically build a pool of human capital with values and skills that support the journey toward sustainability. Companies with a strong reputation for sustainability will attract candidates seeking to work in a sustainable company. An organization transitioning toward sustainability should consider referring to its sustainability values, goals and performance in recruiting materials to attract candidates that will align with these values (Epstein, 2008; Ethical Corporation, 2009; Goodman, 2000).

Doppelt (2003) suggests including sustainability in the job descriptions for new hires. Dunphy and colleagues (2003) raised the importance of fostering productive diversity through hiring decisions. Standberg (2009) notes that it is important not to overlook probationary reviews after a hiring decision has been made—this is the ideal time to confirm the employee's commitment to sustainability.

Despite several references to the importance of hiring among both researchers and practitioners, there is little research that examines the impact of hiring on creating a culture that supports sustainability.

Assessment: Proposed but not tested

ALLOCATE PEOPLE: Move the staff who are passionate about, or skilled in, sustainability into key roles

- Identify people with a passion for sustainability and place them in key roles

- Identify people with sustainability related skills and technical knowledge and place them where their skills are needed

Another important aspect of staffing is ensuring that the talent that you already have gets allocated to the right positions within the organization. In particular, key roles must be staffed with people with appropriate training and dedication to sustainability (Angel del Brio et al., 2008). Andersson and Bateman (2000) advise identifying employees that have a passion for or a technical expertise in sustainability and channelling this interest to benefit the organization. Moving these people into key roles (such as environmental managers) may be one way to accomplish this.

In the quality literature, Manley (2000) found that selecting the ‘right’ people was key to moving toward a culture of quality. Choosing cooperative, motivated people to work as a steering body or championing group, while simultaneously excluding those who are against or ambivalent towards quality improvement, is critical to developing strategies that move the firm towards quality improvement. Motivated people are willing to disseminate information and coordinate action that contributes to the embedding of a culture of quality improvement.

In the sustainability research, the personal dedication of environmental managers was found to be an important factor in implementing environmental supply chains (Adriana, 2009). Beyond this, the issue of allocating the right people to key sustainability roles has not been explored in any depth.

Assessment: Weakly supported

PROMOTE: Move people with sustainability values and skills into higher positions in the organization

- Make sustainability performance a criteria in promotion decisions
- Reward employees demonstrating a commitment to sustainability through promotion
- Include sustainability principles and goals in promotion criteria

Recognizing employee commitment and dedication to sustainability goals and values through promotion not only places the best people in those roles but also sends a powerful message to other employees indicating the importance of this behaviour to the organization. Several studies pointed to promotions as a means for

an organization to highlight the importance of sustainability (Doppelt, 2003; Ethical Corporation, 2009). One way to do this is through the inclusion of sustainability outcomes as a major factor in staff assessment for career advancement (Dunphy et al., 2003).

Despite this, we found no empirical work in this area. The role of promotion requires further exploration.

Assessment: Weakly supported

REINFORCE

The practices in this category emphasize the importance of sustainability or particular actions that lead to sustainability. Organizations must constantly reinforce the sustainability message in various ways to embed it in the hearts and minds of all employees. Regular checkpoints and reviews should be performed to keep sustainability on the organizational agenda and to maintain momentum. In this category, we look at three practices: informing; repeating; and following up.

INFORM: Act repeatedly to keep employees informed, apprised, and up-to-date

- Communicate sustainability progress widely across the organization
- Keep employees up to date on organization’s current activities and future plans

Practitioners suggest organizations should communicate regular updates on their current initiatives and future endeavours to all employees. If employees are not familiar with current programs and the intended future direction, they may feel excluded or detached from the organization and its ambitions. Willard (2009) points to the need to keep managers updated on sustainability progress. Employees in Holton’s (2010) study emphasized the importance of good internal communication up and down the management chain. However, beyond this, the value of keeping employees informed has not been studied in any detail.

In the quality literature, Blackburn and Rosen (1993) discuss that embedding a culture of quality improvement requires information sharing between top management and lower levels of the organization. Often top managers believe such sharing leads to a loss of power; however, the authors find that firms with frequent,

honest, and open communication policies cultivate and reinforce a culture of quality improvement.

Informing is a practice that still requires academic testing.

Assessment: Proposed but not tested

REPEAT: Regularly and persistently engage in the activities and behaviours deemed important to the organization to ultimately embed these in the organization's culture

- Communicate an important sustainability message repeatedly, frequently and widely
- Keep communication concise, but repeat it often
- Use multiple media formats to reach a wider audience, reinforce your message, and signal its importance
- Repeat actions and behaviours that are desirable to the organization's sustainability vision

A change in culture and the acceptance of new ideas takes time and persistent reinforcement. Since employees learn at different rates, it makes sense to repeat a message to afford everyone the time and mental space to acclimatize to fundamental changes. A manager in Harris and Crane's (2002) study explained how their organizational transition involved a stage with many memos and other communications about sustainability. Messages can be delivered by speeches from senior executives, discussions at staff meetings, internal memos, newsletters and intranet systems. Using a variety of means helps build awareness of sustainability issues in employees and also improves their understanding of the organization's plans and values (Doppelt, 2003).

An important aspect of repeating involves knowing when to advance to the next stage of a message or change program. Employee surveys or other feedback tools can be used to understand how quickly a change has been adopted so that future communication and programs can be tailored appropriately (Doppelt, 2003). Employees should be permitted to ask the same sustainability questions and address the same concerns repeatedly as they learn and discover. This will allow them to fully embrace the elements of the new shared culture (Wirtenberg et al., 2008).

There were indications of the importance of repeating among the empirical findings as well. One manager, describing the adoption of stakeholder relationship building

behaviours amongst new employees, explained how it took five to seven years of consistent actions and behaviour for sustainability to seep into organizational culture (Sharma & Vredenburg, 1998). In another study, head office audits, originally considered with suspicion by local management, became accepted as the norm after several years of repetition, as the managers developed trust and an open rapport with inspectors (Werre, 2003).

From the safety literature, Cox, Jones and Collinson (2006) found that constant, regular and routine reminders of the importance of safety were necessary to embed a safety culture.

There is preliminary support for the value of repeating key sustainability messages. More research is needed to understand this practice.

Assessment: Weakly supported

FOLLOW UP: Ensure sustainability tasks are completed through monitoring, reviewing and enquiring on the status of key tasks

- Periodically evaluate your environmental results
- Obtain employee feedback to understand their level of engagement
- Review sustainability performance results at regular status update meetings

As an organization evolves, it is crucial to continually assess and monitor its progress to ensure it is heading in the right direction and employees are completing the tasks and goals assigned. This can be achieved via feedback loops, surveys, status updates, performance dashboards and committing managers to regular communication on their sustainability deliverables (Dunphy et al., 2003; Ethical Corporation, 2009; NBS, 2010).

From the safety literature, we learn that regular feedback from supervisors on whether employees' behaviour was in line with safety improvement expectations, including in employees' performance reviews, was crucial in making these behaviours become habits (McCarthy & Blumenthal, 2006).

Following-up is a practice that has been proposed, but not yet tested empirically.

Assessment: Proposed but not tested

CHAPTER 4

Clarifying Expectations

While the informal practices described in the previous section will help build buy-in for embedding sustainability, it is also important to send clear signals about how things should be done by capturing evolving behaviours and procedures in a more structured way. Our focus here is on the formal practices that support the implementation of current sustainability commitments.

There are seven categories of practices. The first three categories of practices (codifying, integrating, and assigning) provide the foundation for embedding sustainability into an organization's culture by taking the informal elements of sustainability and integrating them into the core of the organization's strategies and processes. The next set of practices (training and incenting) focus on formally equipping and encouraging employees via training and incentives. The last group of practices (assessing and verifying/auditing) concentrates on determining where an organization is, measuring, tracking, and reporting on its progress as well as checking to ensure that it is on track to meet goals.

PRACTICES

Codify

- set goals
- create policies
- operationalize

Integrate

- integrate into mission, vision & values
- integrate into strategy and business plans
- integrate into business processes and systems
- integrate into existing roles
- integrate into product design and life cycle

Assign

- create new roles
- assign responsibility to senior leaders

Train

- train

Incent

- incent

Assess

- inventory
- develop metrics
- monitor/ track
- report

Verify/Audit

- audit
- verify

CODIFY

Codifying involves capturing the informal and making it explicitly formal by setting goals, creating policies, and operationalizing these goals and policies in the form of practices and procedures. The intent behind codifying is to ensure order and uniformity of purpose throughout the organization as it embarks on a cultural shift. Codifying helps to build confidence and avoid confusion during a time of major change, by clearly spelling out the organization's position and ambitions regarding the importance of sustainability now and in the future.

SET GOALS: Develop organizational, department and individual goals and targets for sustainability

- Set explicit organizational goals for sustainability
- Set sustainability goals at the business unit and departmental levels
- Include sustainability in personal goal setting
- Encourage individuals to set their own targets for sustainability
- Build sustainability goals into scorecards
- Ensure that the goals can be measured

Practitioners and researchers both point to the importance of developing goals related to sustainability. Sustainability goals should be set at the organizational level, the level of business units and departments, and at the individual level. Setting explicit sustainability goals and deadlines can help coordinate activities and achieve specific sustainability targets.

When developing goals, Camilleri (2008) suggests that they should be measurable. Siebenhüner and Arnold (2007) found that setting ambitious targets can stimulate new ways of thinking and experimentation. While both practitioners and researchers raised the importance of goal setting, no studies explicitly explored how goal setting relates to sustainability penetration or what types of goals (incremental or stretch) are more effective and under which circumstances.

Assessment: Proposed but not tested

✓ CREATE POLICIES: Develop overarching organizational policies to guide behaviour

- Develop environmental policies; health & safety policies; ethics policies; climate change policies
- Implement Sustainability Codes of Conduct

- Create supplier sustainability performance policies or procurement policies

Corporate policies make expected behaviours explicit and promote a set of values related to sustainability. Andersson et al. (2005) propose that the existence of corporate policies related to sustainability may serve to signal the organization's commitment to sustainability for employees. Establishing corporate policies related to the environment, health and safety, ethics, climate change, and sustainable procurement guide decision-making across the firm. For instance, Camilleri (2008) describes how one company tried to strike a balance between price, quality, environmental and safety issues, and availability in addition to giving preference to locally sourced goods and services within their procurement policy. Strandberg (2009) points to an organization's code of conduct as a key tool for boards to express a commitment to sustainability. She notes that it is "one of the rare documents which all employees are bound by and come into contact with" (p. 13).

Researchers have found support for the role of policies in embedding sustainability. Harris and Crane (2002) found that by formally documenting their environmental position a company was more frequently viewed as supportive of sustainability by their own employees. Furthermore, Ramus and Steger (2000) found a relationship between the existence of a published environmental policy and the creative environmental ideas initiated by employees. They also suggest employees may sense more managerial support of these initiatives if the company effectively communicates its sustainability policies.

In the safety literature, McCarthy and Blumenthal (2006) demonstrate that the development of new policies is integral to the establishment and realization of a culture of safety improvement.

The creation of policies is a practice that has been shown to help embed sustainability. Further research could explore how best to structure these policies and which kinds of policies are most effective.

Assessment: Supported

OPERATIONALIZE: Develop the standards, procedures and practices that enact corporate policies; translate goals and policies into work practices

- Translate abstract sustainability objectives into everyday work practices
- Develop procedures and standards related to sustainability

Employees can deliver on sustainability objectives more easily if they are built into daily operations and practices. The development of detailed standards and procedures clarifies and reinforces expected behaviours. In short, this practice is about translating your ideas into desired actions.

We find preliminary support for the importance of operationalizing in the research studies reviewed. Reverdy (2006) found that the translation of environmental requirements into everyday work practices was necessary for the successful implementation of an environmental management system. Zhao (2004) found that the lack of efforts to link sustainable development to daily operations was one of the main causes of inaction and a key hindrance to implementing sustainable development.

Both the innovation and safety literatures suggest that operationalizing is an important practice. Bank of America embedded a culture of innovation by providing explicit guidance on how managers should engage with employees to achieve the organization's goals (Beck, 1987). Becker (2008) found that innovation was embedded when behaviour change was mandated through deadlines. Enacted formalized safety policies helped embed a safety culture in a study by Cox, Jones and Collinson (2006). They added, however, that the safety culture is weakened when policies are undermined by a lack of supporting management practices and when punishment rather than rewards are used.

Operationalizing receives preliminary support but further research is needed to understand how best to operationalize sustainability.

Assessment: Weakly supported

INTEGRATE

Here we explore the formal integration of sustainability into the way the organization currently operates. This includes incorporating sustainability into an organization's mission, vision, and values; strategy; business plans; business processes; roles; management systems; and product design and life cycle. Through this integration, an organization truly commits to cultural transformation by incorporating sustainability into its core.

INTEGRATE INTO MISSION, VISION AND VALUES: Incorporate sustainability values into the organization's mission, vision and values

- Establish a new mission if one does not exist or if it does not explicitly address sustainability
- Update the organization's vision to reflect what it would be like if it were truly sustainable
- Incorporate sustainability in the organization's values
- Increase the level of priority for sustainability among the organization's values

An organization's mission, vision and values are formal, overarching statements of commitment that send a clear message to its employees and other stakeholders about its position on sustainability. Practitioners noted that integration of sustainability into these elements holds everyone from board members to employees accountable for their actions and encourages employees to take sustainability into account when making decisions. Clear articulation of sustainability within the mission, vision, and values may also help to foster alignment in an organization (Strandberg, 2009). By integrating sustainability into the mission, vision and values, an organization inspires and motivates employees to take obligations to the next level (Epstein, 2008) and enables leadership to challenge their people to do something great (Hart, 2005).

There was only very preliminary empirical support for the value of integrating sustainability into missions, visions and values. Harris and Crane (2002) found that when sustainability was integrated into an organization's mission statement, its managers sensed a change toward the support of sustainable growth.

In other literature pertaining to embedding culture, Gilbert and Ivancevich (2000) explain that a diversity culture is embedded by making diversity part of the organization's mission, beyond what is required by regulation. In the innovation literature, Jassawalla and Sashittal (2002) describe that it is through a process of developing their own team mission statements incorporating innovation that employees build a sense of collective ownership, commitment, and focus and, through this, a culture of innovation.

More research is needed to understand the impact of mission, vision and values on embedding sustainability.

Assessment: Weakly supported

INTEGRATE INTO STRATEGY AND BUSINESS PLANS: Incorporate sustainability into the organization's strategic planning process

- Prioritize sustainability in the strategic planning process
- Incorporate sustainability into strategy
- Involve those responsible for implementing sustainability (such as environmental managers) in the formulation of new strategy
- Emphasize sustainability as a strategic priority
- Directly integrate sustainability goals and deadlines into individual units' business plans
- Require that business units address sustainability in their business plans

Researchers and practitioners alike have proposed the importance of integrating sustainability principles into an organization's strategy. It is suggested that organizations should integrate sustainability across all functions, not as a separate issue. Some have gone so far as to suggest that sustainability should form a key building block of any future strategic planning for the organization.

In addition to explicitly considering sustainability when reconfiguring their strategic planning process, organizations are encouraged to include the individuals responsible for implementing sustainability (such as environmental managers) in corporate strategic planning (Buisse & Verbeke, 2003; Hart, 2005).

Once strategic goals have been set, the next task is to incorporate sustainability into the organization's various business plans to bring these goals down to the level of business units or of particular products or services (depending on how the organization structures its business planning). This can take the form of requiring business units to identify how they will contribute to the organization's overall sustainability goals or asking them to set unit-level sustainability targets.

Despite considerable rhetoric about the importance of sustainability in the strategic planning process, we found no empirical testing that addressed this issue. In fact, Cramer et al. (2004) challenge the notion that change comes about through

a rational process of integrating sustainability into strategy. Instead, they found that the people involved in change, especially line managers, construct their own understanding by building new concepts and words and undertaking incremental actions that are relevant to their day to day responsibilities.

In the innovation literature, George and Van de Ven (2001) explained that an organization is able to uphold a culture of innovation by constantly adapting business plans and strategies in line with external changes while holding constant the values contained in the organization's mission statement.

Clearly, the practice of integrating sustainability into strategy is worthy of more scholarly attention.

Assessment: Proposed but not tested

INTEGRATE INTO BUSINESS PROCESSES AND SYSTEMS: Incorporate sustainability thinking into existing business tools and processes

- Fully integrate sustainability throughout existing business tools and processes
- Build sustainability metrics into day-to-day business processes
- Adapt management systems to identify and manage sustainability issues
- Enhance decision support systems based on sustainability factors
- Integrate different management systems into one, under a sustainability framework

Moving from strategy and planning to implementation brings us into the realm of business processes and systems. Organizations are increasingly turning to various types of management systems to manage complex business processes or to track and analyze data. Given that business processes and systems drive day-to-day operations and decision-making, organizations should embed sustainability within these areas to drive and support change. Willard (2009) suggests making use of existing processes such as environmental, health and safety systems, Total Quality Management, Six Sigma, or lean manufacturing to leverage change initiatives that are already under way.

Although further research in this area is needed, this review suggests that integrating sustainability goals and metrics into business processes and systems

can help support systemic improvements (Allenby, 2000). Holton et al. (2010) found that several interviewees noted the need to integrate standards for quality, environment, and health and safety under one integrated management system; however, most were still struggling with this task. Many interviewees were also beginning to try to incorporate other sustainability issues such as social issues, community relations, supplier performance and product life cycle issues. Esquer-Peralta et al. (2008) also recommend trying to bring existing systems together under one Sustainability Management System (SMS).

Bowen (2004) showed that a culture of ethical behaviour was embedded when ethics was continuously reinforced as an element of decisions made every day. Hyland, Becker, Sloan and Jorgensen (2008) found that continuous improvement was supported by integrating it across all business processes.

Sustainability researchers have yet to explore how to best to incorporate sustainability into current business processes and systems or how business processes and management systems impact sustainability implementation.

Assessment: Weakly supported

INTEGRATE INTO EXISTING ROLES: Add responsibilities and expectations related to sustainability to the description of every role in the organization

- Change staff job descriptions to incorporate sustainability
- Make environmental innovation and performance a part of every employee's job
- Work with the human resources team to bring sustainability into the job functions of every employee across the company
- Assign tasks to roles, not people

This practice focuses on the integration of sustainability at the individual level. Once an organization has defined and integrated sustainability into its vision, mission and values, it can translate this vision into individual roles at all levels, from the CEO to the mailroom (NBS, 2010). Making sustainability part of the role description for every function in the organization ensures that sustainability becomes part of everyone's day-to-day work (Ethical Corporation, 2009). Coupled with role descriptions, organizations need to ensure that employees will know how their sustainability performance will be measured. Accountability mechanisms need to be fair and effective to maintain ongoing improvement (Blackburn, 2007).

Annandale et al. (2004) found that changes to staff job descriptions served to raise environmental awareness among more than a third of the firms in their study. Companies in Jenkins' (2006) study found that employees were more engaged in the sustainability agenda if they saw how it directly related to their job.

More research is needed to further explore the value of integrating sustainability into organizational roles.

Assessment: Weakly supported

✓ INTEGRATE INTO PRODUCT DESIGN AND LIFE CYCLE: Improve the sustainability performance of existing products from conception, through manufacturing and use, to disposal and recycling

- Address the social, economic, and environmental impacts of products and services
- Invest in sustainable product and manufacturing technologies
- Produce products to higher environmental standards
- Use environmentally friendly and recyclable materials in products and packaging
- Reduce, reuse, recycle associated waste materials
- Reduce power consumption requirements of products and production processes

An organization's products and services are the core artifacts of its existence. Employees and other stakeholders often see the company and its products as inseparable. Ultimately, any truly sustainable organization will need to give consideration to its entire product design and life cycle. This includes everything from product materials, production processes, packaging, waste, and even customer use and disposal.

Addressing product design is an important signal to employees that the company can successfully deliver on its vision. It also helps to institutionalize behaviours consistent with the company's effort to simultaneously pursue profitability and environmental sustainability (Smith & Brown, 2003). Organizations must consider the entire supply chain and process, where suppliers and vendors are seen as partners co-designing and co-creating ideas and sustainability innovations (Laszlo, 2003). One company in Laszlo's study involved their suppliers in the redesign of their waste removal systems, leading to cost savings for all and showing a

commitment to sustainability. Donnelly et al. (2004) describe how a company pioneered a product-based environmental management system. They note that although sustainability principles had been long established in the organization, the product-based environmental management system provided a formal framework to refine and document their processes, ensure compliance and embed continuous learning. In another study, a company's product design philosophy strongly emphasizes minimization of waste in discarded products and in packaging. The company conducts a systematic analysis of product features and specifications to identify opportunities for waste minimization (Shrivastava, 1995).

In addition, organizations should include the true environmental costs of product in accounting and planning systems so that environmentally superior products can show savings relative to other products (Mehalik, 2000). Producing products to higher environmental standards, even when resisted initially, often creates unexpected cost-saving and customer-satisfying benefits to the point where the manufacturer transforms its entire production processes to incorporate sustainability (Goodman, 2000).

Bierly, Gallagher and Spender (2008) found that embedding reliability requires that product development processes be regularly adjusted to accommodate best practice technologies, and that learning from past projects be incorporated into new initiatives.

Integrating sustainability into product design and life cycle is a practice worthy of more study.

Assessment: Supported

ASSIGN RESPONSIBILITY

Practices in this category involve allocating the responsibility for sustainability to new or existing roles within the organization, including roles at the most senior levels. This may include the creation of new roles within organizations to address new responsibilities, including managing environmental compliance, dealing with stakeholders, investing in the community, tracking and reporting on progress towards sustainability, and leading sustainable innovation. Organizations can both create new roles and hold senior leaders and board members accountable for sustainability deliverables. By assigning the responsibility for sustainability to

specific roles and at senior levels, the organization signals that sustainability is a priority.

✓ CREATE ROLES: Expand existing roles or develop new roles within the organization to capture essential sustainability responsibilities

- Assign full-time personnel to lead sustainability or environmental programs
- Create new management roles to deliver on the sustainability agenda
- Create a department with primarily sustainability responsibilities
- Expand or upgrade existing health and safety, environmental, reporting and quality roles
- Give these roles direct exposure to senior leadership, the CEO and the board of directors
- Ensure these roles do not operate in isolation, but collaborate and integrate with the rest of the organization (e.g., through cross-functional teams, subcommittees)

Ángel del Brío et al. (2008) found organizations that value sustainability will dedicate a specific manager or department to this area and ensure this person or department reports to (or is part of) senior management. They also find that the creation of specific roles has a legitimizing effect within the organization. Several other authors also point to the creation of specific roles related to sustainability (Cheung et al., 2009; Holton et al., 2010; Lee, 2009; Smith & Brown, 2003). In other cases, a failure to create roles and assign responsibility stood in the way of effective implementation of environmental programs (Balzarova et al., 2006).

Assigning full-time responsibility for sustainability issues to roles within the organization, and prioritizing the importance of these roles, demonstrates management's sustainability commitments to employees and other stakeholders (Smith & Brown, 2003), and legitimizes and validates sustainability programs (DuBose, 2000). Dunphy and colleagues (2003) suggest that the functional roles related to sustainability should report to the CEO and the Board of Directors.

The creation of roles to deliver on essential sustainability responsibilities is a practice that is supported by the literature. Future research could expand upon our understanding of the effectiveness of particular roles.

Assessment: Supported

✓ **ASSIGN RESPONSIBILITY TO SENIOR LEADERSHIP: Allocate the responsibility of delivering on the sustainability agenda to senior leadership roles within the organization, including at the board level**

- Assign responsibility for sustainability to board members and/or a board subcommittee
- Assign responsibility for sustainability to the CEO
- Assign responsibility for sustainability to roles within the senior leadership (create a VP Sustainability, for instance)

Actions taken by senior leadership and the board of directors send very strong signals to the rest of the organization. NBS (2010) suggests establishing a role for a sustainability executive who reports directly to the Board of Directors or the CEO.

The creation of a board-level sustainable development committee sent a strong signal in one large multinational company (Wei-Skillern, 2004). Holton et al. (2010) note that when directors in each of their study companies took direct responsibility for sustainability that the commitment to sustainability was transferred down through the company. Adriana (2009) found a connection between board member responsibility for environmental supply chain management (ESCM) and the program's successful implementation.

The value of assigning responsibility for sustainability at the senior level in the organization has received empirical support in the literature.

Assessment: Supported

TRAIN

Training provides employees with the additional skills and knowledge to help them accomplish tasks, work with systems, or carry out procedures related to or involving sustainability. Training clarifies expectations and creates consistency in behaviours.

✓ **TRAIN: Training employees in systems or procedures related to sustainability**

- Include sustainability training in employee induction programs (emphasizing how sustainability is at the core of the organization's values)
- Invest in ethics, environmental and sustainability training for all employees

- Train managers in ethical and sustainable decision-making, consistent with the organization's mission, values and goals
- Customize training to different audiences using appropriate language
- Train employees to implement and operate sustainability management systems
- Provide motivation by describing learned lessons
- Supplement formal training with mentoring and coaching
- Provide regular training updates to keep sustainability at the forefront of peoples' thoughts

Training has been suggested as an effective way for organizations to communicate the importance of sustainability values and strategy to employees. Training also ensures that all employees have the right skills sets to support sustainable development. One company sends every new employee on a three-week immersion program to ensure they understand and enact the company's values (Ethical Corporation, 2009). Colbert and Kurucz (2007) suggest that all development processes can be infused with sustainability themes. Sustainability training can raise employee awareness of important issues and also improve employee skills competence. Sustainability training can cover everything from sustainability policies, programs, goals, and performance to all aspects of business operations, including suppliers, waste and emission management, product design and life cycle (Maon et al., 2009).

Buysse and Verbeke (2003) identified environmental training as one of five resource domains where organizations can engage in action to become greener. Holton et al. (2010) found a trend amongst the companies they studied toward making use of internal training instead of third-party training—the benefits were cost savings and in-house knowledge building and retention. They also saw a trend toward training targeted at changing behaviour, rather than simply developing technical skills. Dunphy and colleagues (2003) point out that when organizations limit training to the technical skills required for compliance, they are not likely to bring about the attitudinal or cultural change required. Companies found that employees were more interested in sustainability if they had opportunities for training and development (Jenkins, 2006). One organization implemented a nine-month training program followed by a company-wide brainstorming session (Smith & Brown, 2003).

In the safety literature, McCarthy and Blumenthal (2006) explain that training can be effective in embedding a safety culture when provided frequently to the same employees, and when reinforced by a short self-assessment following each session. In the innovation literature, Jassawalla and Sashittal (2002) show that training is not only integral for gaining new skills; but 1) for bringing employees together around a central focus in order to build cohesion and commitment; 2) for developing employees' skills in human interaction; and 3) for showing management's commitment to innovation through the organization's investment of time and resources for the purposes of acquiring new skills and ideas that support teamwork.

Training is a practice that is supported empirically. Additional research in this area should focus on understanding what kinds of training activities are most effective.

Assessment: Supported

INCENT

INCENT: Link compensation to the achievement of set sustainability objectives

- Include sustainability metrics in employees' performance appraisal and assessment
- Link compensation to sustainability performance
- Redesign promotions, raises, bonuses and benefits to reward sustainable performance
- Be clear how people will be measured and ensure that the targets sought are within that person's control

Many organizations have experimented with linking employee remuneration to sustainability targets. Some even propose that adequate remuneration is a necessary precondition to employee engagement. The rationale is that if organizations include corporate responsibility-related metrics in employees' annual appraisals, then employees would be as incentivized to perform on these issues as any other aspect of their job; if they don't deliver, then their pay and bonuses are impacted (Ethical Corporation, 2009). Practitioners propose that once something is built into the bonus structure, it gets incorporated into everyday business more quickly, and targets that were previously described as unattainable are suddenly reached in the presence of financial incentives (NBS, 2010). Practitioners have also expressed concerns about ensuring that the departments that make expenditures to deliver on

sustainability are the ones that get credit for the improvements (Ethical Corporation, 2009) and that where possible the emphasis should be on incenting long-term thinking (NBS, 2010).

Several research studies also suggest that incentives can drive sustainability performance. One organization connects sustainability to employees' bonus compensation to encourage them to build sustainable practices into their day-to-day work. Bonus compensation is dependent in part upon two sustainability metrics: the safety incident/lost workday rate, and landfill reduction (Douglas, 2007). DuBose (2000) found that linking sustainability to a bonus plan allowed one firm to signal priorities and thus speed up the implementation of key initiatives. It appears that financially rewarding individuals for their personal contribution toward sustainability encourages them to participate in firm activities and recognizes those who participate over those who don't (Jones, 2000). Lyon (2004) suggests being open and transparent about the data used to assess bonuses; making assessments cumulative (based on performance trends over time); and in cases of missed targets, making a distinction between system failures and individual failures.

In the quality literature, Handfield and Ghosh (1994) found that incentives helped embed a culture of quality when they were linked to third party certification. The authors found the spreading of a quality culture throughout the firm was aided by awarding teams for the achieving quality certification. In the diversity literature, Gilbert and Ivancevich (2000) found that a culture of diversity and equality was embedded by linking employees' pay to their behaviour related to promoting tolerance and equality.

While several studies indicate support for the value of incentives, more work is needed to understand what types of incentives are effective and under what conditions.

Assessment: Weakly supported

ASSESS

The practices in this category relate to understanding where the organization is, where it wants to go and whether it is on track to get there. They also deal with developing an awareness of an organization's capability for change and an understanding of how much change is required. Assessment practices also involve

measuring and tracking performance and documenting progress. The practices described here (inventorying, developing metrics, monitoring/tracking and reporting) attempt to address these issues.

INVENTORY: Develop an understanding of where an organization is, where it may lead, and where it may lag; conduct base-line assessments.

- Survey employees to understand their attitudes
- Critically assess the organization's strengths and weaknesses

Practitioners and those writing for practitioners identified the importance of developing baselines before charging ahead with sustainability. One organization's vice president surveyed employees annually to understand if they were engaged in the corporate sustainability programs (Ethical Corporation, 2009). Doppelt (2008) suggests assessing employees' readiness for change, in order to focus on change mechanisms that are appropriate for the employees' state. The Network for Business Sustainability (2010) recommends developing an understanding of where the organization leads and lags. Despite this, we found no empirical work that explored inventorying as a practice.

Assessment: Proposed but not tested

DEVELOP METRICS: Develop ways to measure progress toward sustainability—the process of deciding what to track in order to monitor progress

- Translate ambiguous and poorly defined concepts into tangible objectives and metrics appropriate for the organization's products and services
- Identify all forms of relevant sustainability data to be monitored and collected
- Consider environmental performance (resource use, emissions) as well as process performance
- Use discussions and negotiations over metrics as a way to refine collective understandings, goals and priorities

Developing sustainability metrics (or indicators) can be seen as one way of operationalizing sustainability. Organizations can use discussions and negotiations over metrics as a way to refine collective understandings, to set goals and to define priorities. Organizations should define consistent metrics that are tailored and relevant to them (Ethical Corporation, 2009).

While there has been considerable work done on how to develop appropriate sustainability metrics, we found only limited empirical work that addressed the role of metrics in shaping the culture of the organization. Some have suggested that the development of metrics may help to translate the abstract concept of sustainability into more concrete terms (Blackstock et al., 2008). Holton (2010) stresses the need to ensure that performance metrics will be reliable and meaningful. Smith and Brown (2003) note that development of relevant metrics is needed for an organization to track its achievements.

Leaders in quality improvement incorporate quality dimensions into manager and employee performance reviews (Blackburn & Rosen, 1993).

More empirical study is required to understand how the development and selection of metrics shapes a culture of sustainability.

Assessment: Weakly supported

MONITOR/TRACK: Measure performance against pre-defined sustainability objectives and goals

- Regularly gather relevant sustainability performance data
- Leverage existing monitoring tools where possible
- Be clear, transparent and consistent with metrics definition and measurement

To understand the success of any initiative, collection and analysis of relevant data is crucial and sustainability programs are no exception (Ethical Corporation, 2009). Ultimately, this performance data can be used to drive decisions and new initiatives. Although data collection can be labour-intensive, it is vital for tracking the organization's progress and for clarity and transparency in communicating this progress. Development of new tools is not always necessary—many companies with embedded sustainability metrics use the same monitoring tools as for any other company performance metrics (Ethical Corporation, 2009).

Holton et al. (2010) found that all the directors and senior managers they interviewed considered performance monitoring to be essential in demonstrating continuous improvement. In addition, companies used performance monitoring to identify and prioritise areas for improvement and to set new targets. Similarly, a lack of useful data can be a barrier to implementing sustainable development programs (Allenby, 2000).

In a study on corporate culture, Bourgault, Dion and Lemay (1993) found that monitoring whether senior managers' performance is aligned with organizational goals is integral to embedding organizational values among their divisions.

While we find empirical support for the need to monitor and track, more research needs to be done to understand how monitoring and tracking shapes a culture of sustainability.

Assessment: Weakly supported

REPORT: Document sustainability performance and progress

- Implement a corporate environmental reporting system
- Publish internal and external environmental, sustainability or CSR reports
- Report on sustainability progress, addressing previously set goals
- Report on future plans and commitments

Sustainability reports communicate an organization's progress and future commitment toward sustainability. They serve as a public record of an organization's goals and encourage transparency and accountability. These reports also maintain dialogue with many stakeholders, including shareholders, customers, business partners, government, and employees throughout the organization (Maon et al., 2009).

A company in Wei-Skillern's study (2004) encouraged open dialogue by inviting feedback on its activities. This initiative was so popular that a dedicated person was assigned to handle stakeholder responses. A report can also be used for internal purposes, such as establishing commitments and holding departments publicly responsible. This can be an important driver of sustainability performance (Ethical Corporation, 2009).

Annandale et al. (2004) found that while interview respondents acknowledged the positive impact of corporate environmental reporting on environmental performance, it was seen as primarily a public relations exercise, and had less impact in improving environmental awareness than environmental management systems.

While these studies point to the potential for sustainability reporting to shape culture, we found no studies that explicitly explore this theme. Given the substantive

investments that organizations make in reporting, this is an area worthy of more exploration.

Assessment: Proposed but not tested

VERIFY/AUDIT

This category involves more formal evaluations than the previous category (assessing). Practices in this category examine an organization's systems, processes, projects or products for reliability, accuracy, adherence to standards, and compliance. An audit will scrutinize operations, systems and procedures to check whether they meet external or internal standards. This not only drives improvement, but also signals an organization's readiness and commitment to meeting its obligations. An additional layer of scrutiny is gained from third-party verification.

AUDIT: Organizational members examine their own systems, processes, projects or products for reliability, accuracy, adherence to standards and compliance

- Conduct regular internal audits of systems and processes
- Create audit committees or departments
- Ensure that the internal audit function reports to, or is represented on, the board of directors
- Draw upon existing expertise in financial and health and safety auditing

In order to move from a reactive state to a proactive state, an organization must set its own high standards for systems, processes and environmental impacts, and regularly check for adherence. Organizations can draw upon expertise within their organization for financial auditing or health and safety auditing to develop a robust system of sustainability audits.

Auditing was seen by leading firms as important for achieving continuous improvement (Annandale et al., 2004) and as a process of assurance, to demonstrate the quality of performance against stated objectives (Livesey & Kearins, 2002). Internal audits can reinforce procedures, reveal lapses and spark new momentum for ensuring sustainability performance (Hagen, 2008).

In their study on safety improvement, McCarthy and Blumenthal (2006) found that embedding a culture of safety improvement was assisted by the regular auditing

of the organization's safety programs by trained internal staff from a department dedicated to measuring performance effectiveness making use of validated tools adapted from related industries.

These studies point to the need to better understand the role of auditing in shaping a culture of sustainability.

Assessment: Weakly supported

VERIFY: Engage an outside party to compare the organization's activities with corresponding specifications or requirements

- Engage third-party auditors to conduct performance verification
- Engage third-party auditors to conduct report-content verification

Third party verification involves hiring independent auditors to conduct assurance assessments on either sustainability performance or sustainability reporting. While third-party verification is commonplace for financial performance and reporting, it is much less prevalent for sustainability information. The issue of the necessity and value of third-party verification is still a matter of debate, but the practice is on the rise, suggesting that it is increasingly viewed as important for credibility (Blackburn, 2007). The role of third-party verification in building and sustaining cultures of sustainability is one that remains to be explored by researchers.

Assessment: Proposed but not tested

CHAPTER 5

Building Momentum for Change

The preceding two chapters have focused on informal and formal practices aimed at fulfilling current sustainability commitments.

In this chapter, we outline several informal practices that aim to develop the new ideas and new practices needed to bring an organization closer to its long-term sustainability goals. We discuss practices intended to effect change by inspiring and reassuring employees to be bold and fearless as they experiment, try new things, and build on each other's ideas. The categories of practices covered in this chapter include awareness raising; championing; inviting; experimenting; re-envisioning; and sharing.

PRACTICES**Raise awareness**

- trigger
- frame

Champion

- champion

Invite

- ask
- listen
- seek external help

Experiment

- experiment

Re-envision

- define sustainability
- back-cast

Share

- share knowledge internally
- share knowledge externally
- collaborate with others

RAISE AWARENESS

This category looks at techniques used to encourage or convince individuals of the importance of sustainability for the organization or the need to take transformative action. These practices include triggering and framing.

TRIGGER: Initiate; create events that help set things in motion; disrupt the status quo

- Disrupt people's patterns by pointing to the negative implications of current behaviours
- Make use of visual displays to demonstrate the implications of current behaviours
- Provide opportunities for employees to experience the implications of currently unsustainable behaviour first-hand

Sometimes it is necessary to disrupt the status quo to generate an understanding of the need for change. Triggering is about demonstrating the risks of current thought patterns and building awareness of the benefits of alternatives (Doppelt, 2008).

Consider bringing visibility to sustainability issues by disrupting existing patterns (like placing wastebaskets down the hall instead of in offices) or by creating visual displays (by displaying a day's worth of waste) (NBS, 2010). To raise awareness among the senior leadership, Willard (2009) suggests providing opportunities for them to experience the negative effects of current operations first hand. Similarly, Dunphy and colleagues (2003) suggest that placing employees in face-to-face situations with those who will be most affected by their work can powerfully impact attitudes.

In the high-reliability organization literature, van Stralen (2008) explains how triggering episodes are important for altering perceptions about the implications of current practices. In his study, van Stralen demonstrates how interventions 'mid-action' can provide employees with tangible evidence that different behaviours are required to achieve superior outcomes.

We found no empirical work that explored the effectiveness of triggers in the context of sustainability.

Assessment: Proposed but not tested

✓ FRAME: Construct and present a fact or issue from a particular perspective

- Frame sustainability as a financial opportunity or put it in quantitative terms
- Frame sustainability in everyday business language
- Frame sustainability as urgent
- Consider framing sustainability as innovation or being 'cutting edge'
- Consider framing sustainability as being about quality
- Consider framing sustainability in terms of maintaining a licence to operate
- Consider framing sustainability as good publicity and contributing to reputation
- Consider framing sustainability as 'the right thing to do'
- Consider framing sustainability in terms of its benefits for employees
- Avoid emotional language

Practitioners in this review stressed the importance of framing sustainability in ways that reflect the organization's values (NBS, 2010) and in language that aligns with organizational priorities (Ethical Corporation, 2009; Laszlo, 2003; Willard, 2009). Where possible, tie arguments to dollars and convert ambiguous terms like 'sustainability' into language that will resonate with the audience (NBS, 2010). Practitioners also mentioned that messages may need to be tailored differently for different audiences in the organization, but that it is important to remain authentic when doing so (NBS, 2010).

Framing is an area where considerable empirical work has been undertaken. In their survey of 146 environmental champions, Andersson and Bateman (2000) found that framing sustainability as a financial opportunity and using simple everyday business language (such as win-win or cutting-edge) was one of the keys to successful championing. Framing sustainability as urgent also increased the likelihood of success, whereas champions who were not successful often mentioned the inability to generate a sense of urgency as a prime cause of their failure.

Andersson and Bateman (2000) advise that sustainability should be first framed as having high financial payoff. Then, more framing dimensions tailored to the

distinctive priorities of the target audience can be added—for instance, how it contributes to innovation; is relevant to corporate values; and will generate good publicity. They caution that unlike appeals to the general public, dramatic and emotional language is not as effective as a business case framing when discussing sustainability within companies (exceptions may occur when the organization already has a strong sustainability culture).

Bansal (2003) found that sustainability values are more likely to lead to change if they are framed as concerns. Bansal also found that frames that pick up on organizational values or organizational priorities and use organizational language will be better received. If an issue did not fit with organizational values, it did not reach the organizational agenda.

Choosing the right words is extremely important to mobilize internal support (Cramer et al., 2004). Terms like sustainability and corporate social responsibility can be loaded and viewed as jargon (Jenkins, 2006). Molnar and Mulvihill (2003) note that businesses can avoid these terms altogether and still be leading-edge firms by ensuring that their actions clearly and consistently demonstrate a commitment to sustainability.

Based on this review, we suggest that, when possible, sustainability should be framed in business terms that resonate with the organization and, where possible, tie arguments to dollars. If the organization is at an early stage along the sustainability continuum, consider avoiding terms like *sustainability* and corporate *social responsibility* altogether. Layered upon this core framing, champions may also wish to tie sustainability to other strategic priorities or conversations being undertaken in the organization. We suggest stressing the urgency of addressing sustainability, but avoiding emotional language when doing so. Last, tailoring messages to suit different audiences in the organization can be effective, but it is important to remain authentic.

Assessment: Supported

CHAMPION

✓ **CHAMPION: Act of an individual (the champion) to take up, support or defend a cause or course of action**

- Build coalitions
- Inspire others through dedication and commitment
- Do your homework—learn as much as you can about sustainability and how it relates to your organization
- Consider organizing teams of Sustainability Champions

Both practitioners and researchers repeatedly noted the power of individual initiative in advancing the sustainability agenda. Champions recognize the importance of sustainability for the organization and are able to bring the issue onto the organizational agenda (Andersson & Bateman, 2000). Practitioners have suggested identifying champions (Ethical Corporation, 2009) and organizing sustainability champion teams (Strandberg, 2009). While champions can get the ball rolling, the organization's leadership will need to take up the cause to ensure progress continues (Blackburn, 2007). For this reason, Willard (2009) recommends keeping a particular eye out for influential people within the organization who can build and maintain momentum.

In a study of 146 environmental champions, Andersson and Bateman (2000) found that coalition building and inspirational appeal were two successful influence tactics. Successful champions found that enlisting help or endorsement from others gave them added credibility. Unsuccessful champions repeatedly mentioned their failure to inspire others as a major impediment to their success. Unsuccessful champions also mentioned a lack of preparedness and stressed the importance of doing enough background research on the issue. Interestingly, these authors found that another tactic, consultation, was used less often by champions and did not appear to predict championing success. These authors suggest that more research is needed to understand the role of consultation in successful championing as well as other tactics such as pressure, exchange and sanctions.

Internal champions appear to be more likely to be successful than outsiders (Bansal, 2003). Senior managers and board members can be particularly effective champions due to their positions and influence (Harris & Crane, 2002). While individual champions are important, it often takes a 'team' of champions to advance the sustainability agenda (Molnar & Mulvihill, 2003).

Research in the areas of both innovation and ethics also emphasize the importance of champions in successfully embedding organizational cultures. Beck (1987)

concludes that that key to embedding Bank of America's innovation culture was the commitment of and leadership by the CEO and top 100 executives. Benson and Ross (1998) found that the appointment of a known and respected champion to manage the firm's ethics program is essential for embedding a culture of ethical conduct.

The research reviewed here provides support for the effectiveness of championing and also provides insight into successful championing tactics.

Assessment: Supported

INVITE

The practices in this category reflect attempts to solicit and be receptive to ideas and input from employees and others outside of the organization. These practices range from inviting input, to showing genuine interest in employees' opinions and ideas to being attentive to their suggestions and recommendations. The practices in this category are asking; listening; and seeking external help.

ASK: Proactively seek opinions and ideas about how to grapple with sustainability issues

- Encourage dialogue and questions
- Hold staff meetings to generate ideas on sustainability
- Request feedback from internal and external stakeholders
- Bring in external consultants to hold employee feedback sessions
- Allow anonymous feedback (suggestion boxes or online mechanisms)
- Ask open-ended questions to generate talk about change
- Ask employees how they would like to improve sustainability in an ideal world
- Ask employees if they are proud of their organization

As an organization develops and changes, employee and other stakeholder feedback becomes a vital feedstock for the innovation process. There are many ways to proactively garner feedback: host staff meetings; conduct surveys; or create suggestion boxes. Employees and other stakeholders can be prompted to voice their opinions on the organization's strategy; suggest new and creative ideas and solutions; and join open discussions about sustainability issues. The Network for Business Sustainability (2010) recommends creating a safe place for bold ideas to

emerge. Organizations can ask employees how they want the organization to be perceived by others (Doppelt, 2008).

One company's motto "don't waste your time worrying about something, say it", prompts employees to volunteer their feelings about the organization (Angel del Brio et al., 2008). An interviewee in Bowen's (2004) study said that everyone's opinion counted and that feedback from employees was expected by senior management. One organization integrates sustainability into their culture by holding quarterly meetings at which they address core values and encourage employees to voice their opinion about the organization's business and vision (Molnar & Mulvihill, 2003).

The anecdotes raised in the research reviewed here point to the potential importance of the senior leadership soliciting opinions so that employees 'feel heard.' Further research could explore whether (and how) soliciting employee input contributes to embedding sustainability.

Assessment: Weakly supported

LISTEN: Be receptive or open to opinions and new ideas about sustainability

- Provide opportunities for employees to speak to senior management
- Listen more and talk less

When attempting to bring about change, organizations often make use of the proactive behaviours already described in this chapter. But while it is important to raise awareness, champion and even solicit opinions by asking, it is equally important to listen. Some of the best corporate responsibility programs are based on input from employees in operational departments; these employees are ideally situated to make recommendations on making systems and processes more sustainable if senior management is willing to listen (Ethical Corporation, 2009). In fact, employees may find the ear of senior management just as rewarding as monetary incentives (NBS, 2010). Willard (2009) suggests that listening to employee helps them to feel valued and helps to create shared meanings.

There is some preliminary support for the value of listening. In Bansal's (2003) study on corporate responses to environmental issues, senior management's willingness to listen was a factor in furthering the sustainability agenda. Clarke and Roome (1999) found that corporate effectiveness in developing responses to environmental concerns and sustainable development was influenced by an organization's willingness to listen to stakeholders.

In the quality literature, Blackburn and Rosen (1993) explain that leading organizations in quality improvement put in place systems that enable top managers to easily receive communication from lower levels of the organization. Through the institution of regular meetings and open-door policies, these organizations find that they are able to respond to employee concerns and address problems quickly. Practices that involve listening to employees also result in improved employee satisfaction and performance, which in turn lead to the achievement of quality improvement.

More empirical study is required to understand how listening shapes a culture of sustainability.

Assessment: Weakly supported

SEEK EXTERNAL HELP: Solicit input from those outside your organization to find ways to improve internal practices, processes or systems

- Bring in industry experts to provide training or assistance with sustainability issues
- Get guest speakers to talk about environmental and social issues
- Consult with suppliers or customers for ideas

Seeking external help exposes the organization to new ideas (Molnar & Mulvihill, 2003). Industry associations can help companies deal with the complexity of sustainability issues by providing practical guidance (Adriana, 2009). Outside consultants or non-profit groups can offer training, systems or provide insights into what other organizations are doing (Goodman, 2000; Harris & Crane, 2002). When looking for new ideas, consider consulting customers or suppliers. An organization in Lee's (2009) study wasn't able to solve a particular problem on its own, so it asked one of its customers for assistance and gained valuable information in the process.

The impact of seeking external help on an evolving culture of sustainability is not clear from the studies reviewed. However, Dunphy and colleagues (2003) recommend that organizations that turn to external experts find ways to learn from their knowledge and capabilities and then transfer them internally.

In the safety literature, McCarthy and Blumenthal (2006) suggest that outside consultants can bring important resources as they are skilled at suggesting which practices can be implemented in order to bring about a safety improvement culture.

Despite these suggestions that seeking outside help may be beneficial to embedding sustainability, we found no empirical work that explicitly examines this relationship.

Assessment: Proposed but not tested

EXPERIMENT

Practices in this category explore ways to support the development of new ways to do things.

✓ EXPERIMENT: Encourage employees to try new things or develop their own solutions

- Encourage research and experimentation that is aligned with the company's sustainability values
- Provide autonomy to workers and managers to develop new solutions to sustainability challenges
- Allow self-started projects to germinate
- Allow employees some flexibility with regard to implementation to implement

Innovation requires an organization that encourages employees to challenge the rules (Laszlo, 2003). Some of the most creative ideas result when employees are given flexibility to try out new ideas. This will also increase engagement and result in a shared learning process. At one organization, employees were left to their own judgement when managing their activities. However, a strong culture was needed to avoid hobbyism and anarchy (van Marrewijk & Becker, 2004). Managers can spur innovation by allowing employees the autonomy to solve environmental problems in their own way (Angel del Brio et al., 2008) and by leaving flexibility for implementation of sustainability objectives (Siebenhüner & Arnold, 2007). Managers in one study spoke about the freedom they had to implement programs without signoff from their parent company—as long as the programs were consistent with corporate objectives and values (Howard-Grenville et al., 2008).

In another case, the organization was most successful when mixing short and longer term goals and then allowing employees flexibility in how they achieved these goals. Employees were also given resources that allowed them to test and evaluate ideas. This approach provided management control over the process while also building a culture of free and creative thought. Had management been more prescriptive, it is unlikely that as much progress would have been made (Smith & Brown, 2003). Sharma and Vredenburg (1998) found that proactive companies created an environment that fostered experimentation and new ideas related to sustainability by allowing managers to use their discretion and by encouraging employees to respond to new opportunities. This resulted in both a change in culture and organizational capabilities.

In the innovation literature, Stopford and Baden-Fuller (1994) illustrate how a learning culture was fostered by setting an innovation challenge for the organization. Employees were encouraged to conduct many experiments to meet the challenge and more importantly, the failures caused the organization to shift strategy in order to overcome the dilemmas standing in the way of meeting the challenge.

The journey toward sustainability will require new and different ways of doing things. The studies reviewed here suggest that welcoming, supporting and encouraging experimenting can help create a culture of sustainability and innovation. Organizational leaders need to encourage new ideas by being supportive of trial-and-error and experimentation and allowing employees a certain degree of freedom in deciding how to achieve sustainability goals and targets.

Assessment: Supported

RE-ENVISION

Periodically, organizations should step back from everyday operational issues and think holistically and prospectively. Re-envisioning involves determining what sustainability means to the organization and how this impacts the next steps toward embedded sustainability. It also involves developing a new conception of how the firm could or should operate or imagining an ideal future state for the organization and allowing this vision to drive current actions. The practices covered here are defining sustainability and back-casting.

DEFINE SUSTAINABILITY: Develop an agreed-upon definition of sustainability for the company

- Involve multiple stakeholders in defining sustainability
- Ensure that the definition of sustainability is consistent with the organization's values
- Regularly re-assess whether everyone has the same understanding of what sustainability means for the organization

Many people have expressed frustration at the ill-defined concepts that surround sustainability. It is important to decide exactly what sustainability means to a given organization and ensure that all employees and other stakeholders have a common understanding.

Encourage discussions between managers and senior leaders to agree on a conception of sustainability (Colbert & Kurucz, 2007). Solicit input from internal and external stakeholders to establish an agreed-upon definition of sustainability that is relevant to the business (NBS, 2010). Choose a definition of sustainability carefully, because it can shape and influence employee behaviours (Hagen, 2008). One organization suggests continually asking whether sustainability is defined well enough and whether that definition is interpreted similarly by all (NBS, 2010).

While the value of collectively defining sustainability was proposed both by practitioners and researchers, we found no research that explicitly explored its impact on embedding sustainability.

Assessment: Proposed but not tested

BACK-CAST: Envision a different future and identify the actions required in order to reach it

- Imagine a desired future in which the organization is 'sustainable'
- Work backwards from the future vision to determine the necessary steps to get there
- Set distinct milestones to help construct the path to the future

Many of the books written for practitioners suggest that back-casting is useful practice to ensure an alignment between what the organization is doing now and where it ultimately wants to be. It is about building a logical set of stepping stones from the future back to the present.

Ask the big questions about where the organization should be in 10 to 20 years and start taking the necessary steps to get there. Look beyond current products and think about the value offered to customers (NBS, 2010). Use a reverse-engineering approach to develop a vision—start with the ideal and then work backwards (Doppelt, 2003). Dunphy and colleagues (2003) suggest imagining several alternate future states and then using them to engage stakeholders in developing the paths to achieving them (Dunphy et al., 2003). Laszlo (2003) calls this a ‘sustainable value intent,’ which allows executives to design a future state that is informed by the past but is not an extension of it.

In the innovation literature, Mitleton-Kelly (2006) explains how back-casting allowed employees in one organization to ensure they built innovation into all aspects of their work as they moved forward. Each year, employees considered the organization, its practices and its culture, and were asked to indicate changes that needed to be made to close the gap between where the organization was and where employees wanted it to be.

While none of the research reviewed here explicitly explored how back-casting might help develop or support a culture of sustainability, several sources suggested its value. More research is needed to understand the potential value of this practice.

Assessment: Proposed but not tested

SHARE

The practices in this category focus on sharing information internally and/or externally with the aim of furthering the sustainability agenda and working with other organizations to further a broader sustainability agenda. At some point, organizations on the journey to sustainability realize they are often facing issues that extend across departmental and even organizational boundaries. In trying to address organizational issues, it may help to leverage internal and external networks and incorporate a variety of perspectives. Internal collaboration will allow employees to build on each other’s ideas and allow best practices to disseminate throughout the organization. Similarly, sharing ideas and practices with other organizations can raise the sustainability performance of everyone involved. The practices discussed in this category are sharing knowledge internally; sharing knowledge externally; and collaborating with others.

SHARE KNOWLEDGE INTERNALLY: Make use of the organization’s diversity

- Encourage sharing of knowledge across different functional areas
- Create cross-functional teams to work on sustainability issues
- Ensure interdisciplinary representation when building working groups
- Make use of the diversity of talents and ideas across your organization

Innovations related to sustainability often impact multiple areas of the organization. To understand how changes in one area may affect or even benefit other parts of the organization it’s a good idea to consult across functional areas. By ensuring diverse functional representation in working teams, the organization will benefit from a range of perspectives. These diverse perspectives will allow for more sustainable solutions that accommodate a multitude of different expectations and requirements (Reverdy, 2006).

One solution is to assemble interdisciplinary and cross-functional teams to collaborate on sustainability (NBS, 2010). Or, consider bringing together key people from across the organization in positions of responsibility where sustainability can make a difference (Ethical Corporation, 2009). Willard (2009) proposes mobilizing commitment by cross-functional and cross-hierarchical team collaboration, and recommends establishing formal, cross-functional senior-level sustainability teams that have the power to effect sustainability transformation and the seniority to take accountability for it. Doppelt (2008) also suggests that organizations link people who are working on similar sustainability initiatives, for support and learning, to encourage innovation through collaboration. To keep culture in mind, Strandberg (2009) recommends that the HR executive should be one of the members of the cross-functional team established to develop the CSR agenda.

Rothenberg found that without deliberate efforts to coordinate, environmental staff are often isolated and not integrated with the core of the organization, and have to work hard to develop closer relationships with other employees (Rothenberg, 2003). Reverdy (2006) observed that the lack of shared knowledge between environment and production staff resulted in misunderstandings and halted collaborative action and problem resolution.

In a study of high-technology firms Jassawalla and Sashittal (2002) found that regular formal meetings scheduled for the explicit purpose of sharing information

and discussing and debating ideas contributed to an innovation-supportive and inclusive culture.

More research needs to be done to understand how internal knowledge-sharing can be best facilitated to support sustainability implementation.

Assessment: Weakly supported

SHARE KNOWLEDGE EXTERNALLY: Exchange information about efforts to embed sustainability with other organizations to improve everyone's sustainability performance

- Participate in knowledge sharing opportunities initiated by industry associations
- Join organizations that bring together other organizations that are grappling with sustainability

Sharing experiences with other organizations and groups to learn more about how they are working to solve sustainability issues has mutually beneficial outcomes. Often other organizations are working on addressing similar sustainability issues and asking the same sustainability questions. Acknowledging that sharing information with competitors is not necessarily harmful is an important step. By sharing best practices and key learnings, organizations can work together to generate sustainability solutions (Ethical Corporation, 2009).

Clarke and Roome (1999) propose that companies engage in knowledge sharing in order to inform, confirm and validate their own internal approaches to sustainability. Beyond this, we were unable to find work that looked back into the organization to think about the impact of sharing ideas with the outside world.

Assessment: Weakly supported

COLLABORATE: Work with other organizations to try to achieve shared sustainability goals

- Collaborate with other organizations
- Create organizational partnerships
- Cooperate with regulators, NGOs and external stakeholder groups

Solving sustainability is, in many ways, a shared responsibility and not a competitive race. The highly complex, multifaceted, and multi-stakeholder issues and challenges facing organizations will require collective attention and participation to be

overcome. Making headway on sustainability issues sometimes requires more than share information sharing. To achieve real progress on sustainability issues, it may be necessary to work with some unlikely partners like competitors, governments or non-governmental organizations.

Buysse and Verbeke (2003) describe how organizations with advanced sustainability agendas often work with external stakeholders such as regulators and environmental NGOs to develop environmental standards, or form strategic alliances with environmental groups, or even competitors, to address complex environmental problems. Industries can band together to develop best practices (Adriana, 2009) or to develop new processes (Halme, 1995). When an organization opts to take on larger sustainability challenges by working with other organizations, it can send a signal to those on the inside that management is serious about sustainability.

In the innovation literature, Mitleton-Kelly (2006) notes that interacting with and listening to feedback from stakeholders enabled one organization to build the concerns of their communities into its innovation processes.

While many researchers have explored interorganizational collaborations in the sustainability arena, we were unable to identify any that looked at the impact of these collaborations on the cultures of the participating organizations.

Assessment: Proposed but not tested

CHAPTER 6

Instilling Capacity for Change

In the fourth quadrant of the framework, we continue to look at practices aimed at innovation; however, we now focus on practices that take a formal approach toward building a culture that supports sustainable innovation.

The two categories of practices in this section can help embed continuous and proactive knowledge building by institutionalizing learning in the organization (learning) and to provide a foundation for future sustainability initiatives by developing formal support mechanisms for change (developing).

PRACTICES**Learn**

- scan
- benchmark
- pilot
- learn from failure
- reflect

Develop

- develop new business processes and systems
- develop new products and services

LEARN

The practices in this category focus on creating processes and mechanisms to gather knowledge or skills related to sustainability. The practices examined here include scanning; benchmarking; conducting pilot projects; learning from failure and reflecting.

SCAN: Make use of systems or processes to perceive and recognize external information

- Attend industry and environmental conferences
- Join a sustainability organization where members share information and best practices
- Observe competitors' sustainability activity
- Scan multiple sources habitually
- Develop many diverse internal and external knowledge and opportunity networks
- Research stakeholder needs and values
- Scan for changes in legislation and upcoming regulatory requirements
- Use focus groups and surveys to garner customer opinions on sustainability issues
- Subscribe to newsletters or periodicals on sustainability issues

In a rapidly changing environment, organizations must be constantly and proactively looking for opportunities and threats. Scanning entails continuously looking out for sustainability opportunities. Scanning also involves researching all available sources for the latest information and expert opinions on sustainability, and having a finger on the pulse of the sustainability landscape.

Organizations should encourage employees to keep themselves up to date on sustainability by accessing online information, reading books, and talking with experts to identify ways that the organization can change (Doppelt, 2008). One CEO likened scanning to having opportunistic antennae (Dixon & Clifford, 2007).

Anderson and Bateman (2000) found that successful champions scanned their environment, collecting information from industry and environmental conferences and, to a lesser extent, environmental consultants and competitors. Colbert and Kurucz (2007) note that habitually searching for new information needs to become

culturally embedded in the organization so that it moves from being an individual capability to an organizational one. One organization in Maon and colleagues' (2009) study routinely asks its stakeholders their opinions about its values and planned activities, which allows it to adjust and adapt if required. Leading organizations balance their internal and external focus, and build and maintain extensive links beyond their sector or industry to keep up to date with the latest practices and new developments (Molnar & Mulvihill, 2003).

Although our knowledge on this practice is developing, further empirical work is required to understand how scanning can be best employed to support a culture of sustainability.

Assessment: Weakly supported

BENCHMARK: Compare your business processes and performance to industry-bests and/ or best practices from other industries

- Select organizational sustainability metrics that are used by others to facilitate benchmarking
- Decide which information should be made public so that the organization's performance can be transparently compared to that of other organizations
- Consider benchmarking internally between divisions, business units or locations

Benchmarking facilitates learning by situating an organization's performance relative to others. Organizations may find that they lead or lag the efforts and achievements of other organizations and can get a sense of 'best practices' by comparing their performance to others (Blackburn, 2007).

Safety performance is one area where many companies openly benchmark their performance and where statistics can be readily compared. By contrast, Blackburn (2007) notes many other sustainability metrics are difficult to compare across companies and especially across industries. When first embarking on benchmarking, see if there are existing metrics that can be adapted to the organization's purposes (NBS, 2010). Brink and van der Woerd (2004) suggest that benchmarks allow management to better measure and manage corporate responsibility. Goodman (2000) found that internal benchmarking helped divisions set realistic targets by seeing how well their peers were doing.

We were unable to locate studies that addressed the potential impact of benchmarking on organizational culture. For instance, would knowledge that the organization was either lagging or leading on a particular measure be motivating or demotivating, and under what circumstances?

Assessment: Proposed but not tested

PILOT: Make a formal decision to undertake new initiatives or practices as a test or trial

- Adopt initiatives that originated at the grassroots level as formal pilot projects
- Welcome proposals and suggestions, and follow through by allocating resources to piloting the best ideas
- Set internal targets for finding and executing pilot projects

Ideas that develop at the grassroots level need to find their way into the formal structures of the organization if they are ever to become embedded as new practices. Piloting is one way of making this transition.

Organizations need to create a supportive environment that allows for new ideas to be given the chance to germinate, be prototyped and be implemented (Laszlo, 2003). Willard (2009) points to the importance of pilot programs in stimulating ideas and feedback. He suggests that organizations select areas where the conditions are favourable for successfully incubating new sustainability solutions. Hart (2005) advocates that organizations create structures and allocate separate funds to allow internal entrepreneurs to build and incubate new ideas. He found that setting targets for pilot projects is a way to encourage new ideas within the organization.

In the safety literature, McCarthy and Blumenthal (2006) provide evidence that initiating change in a single department and then replicating successful processes and practices in other areas of the organization can be effective in building an organizational culture of safety.

Formal research in the area of sustainability has not explored the impact of pilot programs on embedding new ideas into the organization. Given the indications of the success of piloting in the safety literature, this may well be a practice worthy of more investigation.

Assessment: Proposed but not tested

LEARN FROM FAILURE: Establish processes to gather new knowledge and skills from the analysis of past mistakes

- Dedicate resources to investigating failures
- Develop a process for making recommendations for improvement
- Take advantage of failures and see them as opportunities for significant transformational and sustainable change

Sometimes an organization will make mistakes. Whether it is a failure to execute a routine task or a miscalculation in the process of innovation, organizations need to view moments of failure as opportunities to improve and create momentum for change.

In Hagen's (2008) study, acknowledging, dealing with, and publicly communicating a sustainability failure led to an upsurge in the focus on environmental issues. Once the crisis was over, the organization entered a phase of soul searching and learning, trying to figure out what went wrong and how they could improve.

In the safety literature, learning from failures was approached by means of a non-punitive process of reporting unintentional and non-criminal errors. This involved clearly defining criminal errors (those involving substance abuse or intentional harm) and putting in place procedures for determining what happened; why it happened; and what could be done to prevent it from happening again. In this way, the organization discovered vulnerabilities in its systems and was able to develop and monitor system improvements (McCarthy & Blumenthal, 2006).

More research is required to understand how organizations can ensure that they learn from their failures to implement or advance sustainability and how they can best use failures as a catalyst for change.

Assessment: Proposed but not tested

REFLECT: Carefully consider what the organization is doing; ask questions about what the organization is doing and why

- Set regularly opportunities to reflect on priorities
- Stand back and assess the macro perspective
- Observe organizational trends and ensure these are consistent with sustainability values
- Take a holistic view and be aware of the organization's surroundings

- Implement formal feedback systems
- Institutionalize time for reflection

Several practitioners mentioned the importance of reflecting on what the organization is doing, as part of the learning process, along with the need to create regular opportunities to reflect (NBS, 2010).

Doppelt (2008) notes that one step backward, to reflect, can be very revealing and result in two steps forward. Through regular assessments and feedback mechanisms an organization can begin to formalize and institutionalize its process of reflection (Dunphy et al., 2003).

We found no empirical work that explored whether reflecting is a practice that can support a culture of sustainability.

Assessment: Proposed but not tested

DEVELOP

This category looks at practices that create or implement new mechanisms to support future sustainability initiatives. These practices include putting in place new and innovative systems and procedures (internal) and also products and services (external) as a foundation for future sustainability initiatives.

DEVELOP NEW BUSINESS PROCESSES AND SYSTEMS: Implement new internal procedures and/or systems that will support sustainability

- Implement new environmental management systems (EMS) or a sustainability management system (SMS)
- Develop new decision support systems based on sustainability factors

Researchers have proposed that designing a Sustainability Management System (SMS) may be an effective way to implement sustainability (Esquer-Peralta et al., 2008; Holton et al., 2010). Esquer-Peralta et al. (2008) recommend bringing existing systems together under one new Sustainability Management System (SMS).

Based on this preliminary research, further research is required to understand the impact of developing new processes and management systems and more specifically, what impact these systems may have on the organization's culture.

Assessment: Weakly supported

DEVELOP NEW PRODUCTS AND SERVICES: Create new product or services that realize the organization's commitment to sustainability

- Develop new products and services with minimal negative impacts on the natural environment
- Develop new products and services that meet unmet sustainability needs

In the quadrant on clarifying expectations, we looked at how organizations can integrate and respond to sustainability criteria in existing product designs and life cycles. We now look at how organizations can develop entirely new products and services to signal their commitment to the environment and their ability to stay relevant in the future.

Ethical Corporation (2009) proposes that the best way that production departments can embed sustainability is through creating products that address societal or environmental needs. Smith and Brown (2003) found that when an organization developed new sustainable products in line with its espoused values, this built employee pride and confidence in the organization's mission and its leaders. At Interface, a new generation of products that took a complete life-cycle approach sent a strong signal to employees that the organization had set new priorities (DuBose, 2000).

Much more research is needed to understand the impact that developing new sustainable products and services has on how employees view their organization.

Assessment: Weakly supported

CHAPTER 7

A Call to Action

IMPLICATIONS FOR PRACTITIONERS

We would like to re-emphasize that the framework we developed serves as a guide to embedding sustainability into organizational culture. Once your organization has charted its path toward sustainability and identified its strategic priorities, this framework can be used to help build and sustain an organizational culture to support your journey. There are two main ways that you can make use of the framework developed in this report:

First, you can conduct a gap assessment of your current sustainability culture. Scan the practices in the four quadrants and ask yourself: to what extent do we make use of this particular practice? It may be useful to reflect on which practices you currently employ the most and those you use less frequently or do not use at all. Think about why this may be the case. Do you rely more heavily on practices in one quadrant than the others? Are there quadrants where you do not make use of many practices at all?

A second way to use the framework is as a planning tool for the implementation of a particular program or initiative that aims to build your current culture. Again, with a particular goal or initiative in mind, you can scan the practices in the four quadrants and select a diversified sub-set of practices that are best suited to helping you implement this particular program or initiative. In doing so, ensure that you select practices from each of the four quadrants and try to select some practices that have already received empirical support.

IMPLICATIONS FOR RESEARCHERS

Despite an increasing amount of scholarship in the area of business sustainability, our review reveals that there is very little work in the area of embedding sustainability into organizational culture. Additionally, much of the work reviewed here consists of case studies with an emphasis on ‘success’ stories and most have been at the level of the overarching construct of ‘sustainability’ or ‘environmental management’ [notable exceptions include Howard-Grenville et al. (2008) and Andersson and Bateman (2000)]. We frequently struggled when trying to identify the independent and dependent variables in many studies, and we found a need for much more construct clarity in this field. For this reason, we have given much attention to defining the constructs that we use to describe the various practices we identified in this report.

In the future, we see a need for more comparison studies of more and less ‘successful’ firms. We also believe it will be instructive to look at comparisons across various ‘stages’ of implementation. It is our hope that this review will encourage more researchers to conduct empirical investigations to determine the effectiveness of these proposed practices, especially those that are raised frequently by practitioners but have not yet received much empirical attention. Eventually, we hope to also see studies that compare the impact of the practices located in the four different quadrants of our framework.

NEXT STEPS

One of the most important findings of this systematic knowledge review on embedding sustainability is that practice is currently leading theory in a meaningful way. Practitioners are currently at the ‘front lines’ of this evolving area and have much to contribute to our understanding of how to embed sustainability. It is clear from this review that there is a great need for research in this area. In particular, there is a need for researchers to engage with and learn from those practitioners that are ‘living’ this every day in their own organizations. We invite you to join our ongoing conversation and work in this area by visiting the Network for Business Sustainability’s Culture topic page at www.nbs.net/knowledge/culture.

Baseline/Gap Analysis or New Program Implementation

Use the Portfolio Assessment Tool to conduct a baseline assessment and gap analysis for the organization as a whole. Or, use the framework to plan what practices you will use to support the implementation of a particular program.

STEP 1

When conducting a baseline/gap analysis, place a check mark next to the practices that you already employ. If you are planning a new program, place a check mark beside those that you plan to employ.

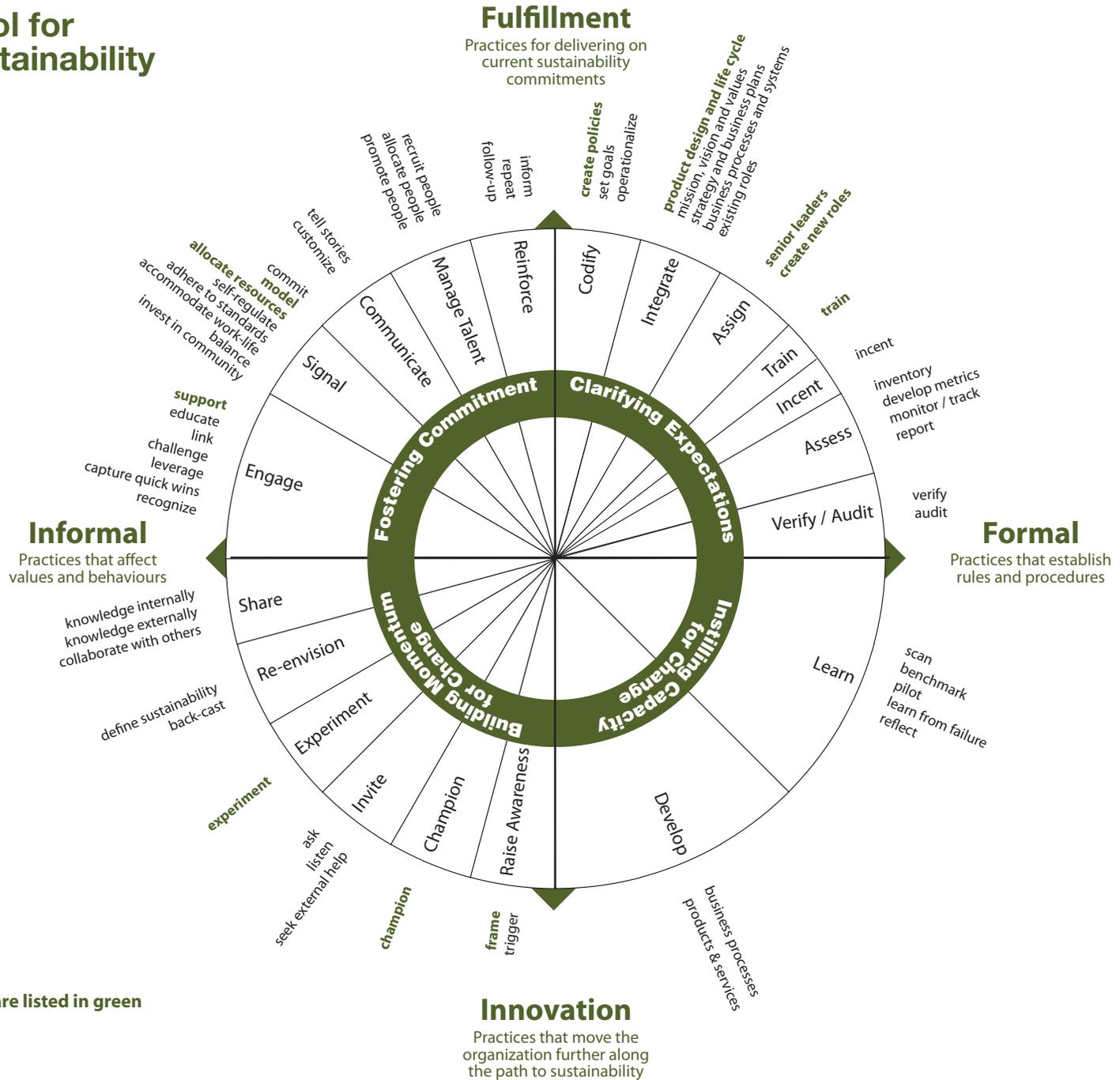
STEP 2

Take a look at the distribution. Do you make use of a sub-set of practices from each quadrant? Are you making use of the supported practices? Do you expend too much energy in one quadrant at the expense of others?

STEP 3

Circle additional practices that you might want to consider, emphasizing those that have been demonstrated to be effective. See the full systematic review for more details making use of the framework.

Assessment Tool for Embedding Sustainability



Supported practices are listed in green

References

Please note that these are the references cited in the body of this report. The complete list of supporting references for the study can be found in Appendix B.

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APPENDIX A:

Methodology

This appendix contains the detailed methodology for the systematic review on embedding sustainability. The complete list of supporting references for the study can be found in Appendix B.

SYSTEMATIC REVIEW

Like previous NBS systematic knowledge reviews, our aim was to advance our understanding of theory and practice in the area of embedding sustainability. Our methods and our methodological decisions were guided by our desire to develop a comprehensive and critical understanding of the current state of relevant knowledge in this field. As noted by Briner and Denyer (2010), the design and methods of a systematic review are driven by a set of principles or a guiding logic rather than one 'best' protocol. Instead, the methods need to be flexible and responsive in order to attend to the question the review seeks to address.

While systematic reviews are fairly new to the field of management research, norms around their conduct have emerged, which are outlined by Briner and Denyer (2010). These include:

- observing a systematic process that is specifically designed to address a particular research question;
- being explicit and transparent regarding the methods used;
- being sufficiently detailed in the reporting of the methods such that other researchers can repeat the review; and
- structuring and organizing the findings to summarize the available evidence related to the question at hand.

Overall, Briner and Denyer's (2010) recommendations reflect the practices

established for systematic reviews in other disciplines while retaining the flexibility required to conduct systematic reviews in management, where research questions are often less clearly specified, and methodological approaches may be highly variable. In the sections that follow, we discuss our particular methodological approach in addition to explicitly addressing the choices we faced in executing this review.

SUMMARY OF OUR RESEARCH PROCESS

We've undertaken a large-scale systematic review of both academic and practitioner sources related to embedding sustainability into organizational culture. Given that culture is such a broad topic, we initially cast a very wide net, identifying 13,756 academic and practitioner articles and reports based on an extensive set of keywords related to the topic. Our focus was on work that specifically addressed embedding sustainability; however, we also saw the potential to learn from other well studied analogous cultural interventions (such as health & safety, high-reliability organizations, legal compliance, and the implementation of total quality management).

Preliminary screening narrowed this pool to 701 of the most promising sources. These sources were reviewed in detail to identify the 96 most relevant materials on embedding sustainability. This included 82 academic articles and 14 practitioner articles and books that explore the theme of sustainability and culture. We also retained 83 sources that examined analogous cultural interventions. Using this data set of 179 sources, we conducted extensive, detailed analysis and synthesis of the materials to extract the various practices that may support embedding sustainability. Based on this analysis, we developed the framework on embedding sustainability presented in this report.

In conducting our review, we found instances where practitioner knowledge is currently leading theory. We also found numerous instances where academics proposed practices that were not directly tested in their own work. Rather than limit our examination to empirically tested practices, we identified all the relevant practices regardless of the level of empirical support and documented whether each instance had been proposed, empirically tested and supported or empirically tested and unsupported. This information was included in our reporting in order to summarize what we know, what we think we know and what we don't know based on the best available evidence.

In the sections below, we document each phase of our research process in more detail.

SELECTION OF RESEARCH QUESTION AND KEYWORDS

As recommended by Briner and Denyer (2010), the research questions for this review were developed through a discussion with the lead researcher and an advisory council composed of NBS Leadership Council members, an academic advisor with experience in the area of systematic reviews, and the managing director of the NBS. Given the broad nature of both the concepts of sustainability and organizational culture, we first needed to ask the questions: what is meant by sustainability; what is meant by embedding; and what is meant by culture? After thoroughly discussing these constructs, we sought a set of guiding questions that would bound the study in a way that was conducive to making decisions about what sources to include and exclude from the study. We arrived at the following two research questions:

- What do we know about how organizations can embed sustainability into their organizational culture?
- What can potentially be learned from analogous cultural interventions in the areas of innovation, safety, compliance, total quality management, and high reliability organizations?

Based on these questions, the research team developed a strategy for the identification of studies, which included generating a list of keywords for the search, outlining the potential data sources and determining a set of criteria for the inclusion and exclusion of studies. This protocol was reviewed by the advisory council for the project. Our original keywords were as follows:

- Sustainability and Culture
- Sustainability and Strategy
- Sustainability and Leadership
- Sustainability and HR/HRM
- Sustainability and Code/Conduct
- Sustainability and Incentives
- Sustainability and Training
- Sustainability and Recruitment
- Sustainability and Change
- Sustainability and Implementation
- Sustainability and Culture and Measurement
- Sustainability and Reporting and Culture
- Sustainability and IT /Information Technology
- Sustainability and Innovation

INITIAL SEARCH OF THE LITERATURE

Our approach to this study was to search the literature very broadly and extensively. We also sought both academic and practitioner works in this area. Our search was limited to documents produced in English. Given that the vast majority of work in this area has been produced in the last 10-15 years, we imposed no restrictions on time period. As this is a rapidly evolving area of study, we sought to include all the available studies and data relevant to this topic, including work under review and work in progress.

The methods outlined for systematic reviews are aimed at assessing empirical studies. In contrast, the scope of work outlined by the NBS included both academic and practitioner sources. Consequently, our search process consisted of trying to both gather and assess two different kinds of sources: empirical studies and practitioner studies. By necessity, the criteria for search and for inclusion needed to be different for two classes of materials.

Our data sources for the empirical work consisted of:

- Studies identified from multiple keyword searches in two leading academic databases (EBSCO and JSTOR) and Google Scholar. We provide more details on the selection and search of these particular databases below.

- Studies identified by contacting researchers conducting work in this area. First, requests were posted on a listserv relevant to researchers working in the area of sustainability. The Organizations and the Natural Environment (ONE) listserv, which is a division of the Academy of Management was selected for this purpose. Second, we contacted researchers undertaking work in this area directly and requested their working papers and referrals to work that they deemed relevant to the study.
- Potentially relevant studies cited by studies that we had already collected but that had not been identified by our previous searches.

Our data sources for the practitioner work consisted of:

- Studies recommend by contacting academics and practitioners conducting work in this area. We contacted several leading sustainability consultants to request referrals to work in this area.
- Books published on the theme of business sustainability. Our discussions with leading practitioners revealed much of the work on leading practices in this area is captured in books targeted at practitioners. Books were identified from searches of Google Books and amazon.com.
- Practitioner reports identified from a Google search.

Our initial search protocol for the empirical work specified using the Business Source Complete (EBSCO) database because it includes major academic publications as well as practitioner journals. In addition, it allows multiple users to access a central storage folder in which search results and articles can be sorted into sub-folders, which aids in creating an audit trail and in comparing the results of searches between researchers.

In the first search, we simply typed in sustainability AND culture, without imposing any restrictions on the search to find articles discussing broad relationships between these variables. As we progressed, we hoped to be able to systematically narrow our search to more specific and associated variables to ensure we had not omitted any studies from our review. EBSCO returned 426 articles. A review of the search results indicated that many articles that we anticipated that we would find, based on our own knowledge of the literature, were absent. This prompted us to:

- a) Rerun the search in JSTOR and Google Scholar; and
- b) Include in our searches alternate names for sustainability (environmental management and CSR) that might identify relevant articles.

Performing a search for sustainability and culture in JSTOR returned over 7,800 articles. Thus, we imposed several restrictions on the search, including limiting the results to English academic articles from fields of Business and Sociology. The revised search returned 1,181 articles, including many of the articles we expected to see. A cursory glance over the sustainability and culture list extracted from EBSCO revealed that few articles were duplicated in the JSTOR list. This led to our assessment that both EBSCO and JSTOR databases should be used for each search.

We also tried running the search query in Google Scholar, but received an untenable 760,000 results in return. Even after imposing stringent limits on the search (restricted to English articles in [business, administration, finance, economics] and [social sciences, arts and humanities]), we were only able to reduce the results to 17,400, most of which appeared to be book references, or citations. We decided to abandon the Google Scholar search and rely upon the academic databases for the empirical search.

To locate practitioner sources, we conducted both a general Google search and a Google Book search on the term 'sustainability and culture' to generate a list of reports and books that addressed business sustainability and culture. We screened only the first 500 results from Google and Google Books. We conducted the same search in Amazon.com. We also relied on suggestions from leading consultants and from academics.

PRELIMINARY SCREENING

Three researchers completed the keyword searches in both EBSCO and JSTOR, with a combination of two researchers conducting the search for each set of keywords. The results of each search were saved so that they could be reviewed by another researcher. The first five searches were also reviewed by the lead author of the report. The development of the search protocol was highly iterative and involved multiple discussions between the members of the research team.

Initially, we surveyed the articles for any mention of a culture of sustainability.

Although one term might have been mentioned in the abstract or author-supplied keywords, a link between culture and sustainability was rarely indicated in the abstract, thus requiring a quick scan of each of the 13,756 articles. We determined that because we were looking for the antecedents of a sustainability culture, or an indication of a relationship between the variables, we needed to eliminate all articles that did not include an empirical component, whether qualitative or quantitative. Therefore, we determined that our searches should filter out non-empirical articles and articles with fewer than 7 pages. This decision reflects some of the trade-offs in terms of the inclusion and exclusion of studies. In this case, we made the decision that articles with fewer than 7 pages were highly unlikely to discuss empirical findings in any depth sufficient to be useful for the review.

The following criteria for inclusion/exclusion were used to determine whether empirical studies should be included in the systematic review:

- Is the study greater than six pages?
- Does the article have empirical findings?
- Does the study examine antecedents of a sustainability culture?
- Does the study identify practices aimed at embedding sustainability?
- Does the study address antecedents of an analogous cultural intervention?

For all excluded studies, we documented the reason for exclusion (e.g., no relationship between sustainability and culture or no empirical findings). When in doubt, we always erred on the side of inclusion. At this stage, we favoured false positive errors over missing potential studies. Given that we conducted a second

round of screening, we were comfortable in applying this bias at this stage.

As we progressed through the list of search term combinations, we found many results had already been added to the main coding set in previous searches. Thus, over time, we progressively added fewer unique articles to the set for coding. This indicated that we were converging on the core studies and reaching a saturation point with regard to our search for empirical studies.

The following criteria for inclusion/exclusion were used to determine whether practitioner studies should be included in the systematic review:

- Does the study examine antecedents of a sustainability culture?
- Does the study identify practices aimed at embedding sustainability?

After eliminating duplications, the preliminary screening identified 526 academic sources related to sustainability, 115 sources related to analogous cultural interventions, 56 books and 4 practitioner reports. All of the sources were loaded into a reference management software system (Zotero), which was web-based and available to all of the researchers. The metadata (author, year, journal, etc.) were added for each source and we obtained text-searchable PDF copies of every source, except for the books. In the case of the books, one author read all of the books in their entirety and for those books that met the inclusion criteria, research summary notes from 5 to 12 pages were produced that summarized any practices aimed at embedding sustainability. (We made use of these research notes for the analysis process and returned to the original sources to write the report as a final quality check.)

FINAL SCREENING

We further refined our final list of sources by reading each document in its entirety to determine whether a given source addressed the issue of how organizations embed sustainability into their culture. Again, for all excluded studies at this stage, we documented the reason for exclusion (e.g., no relationship between sustainability and culture or reference to culture is not at the organizational level, etc.). Table A1 presents a summary of our final search statistics.

TABLE A1: FINAL INCLUSION STATISTICS BY SOURCE CATEGORY AND SEARCH TERM

SEARCH	SOURCE	INITIAL SEARCH	PRELIMINARY SCREENING	RETAINED
Sustainability – Academic Sources		10986	526	82**
Sustainability and Culture [limited to business and sociology]	EBSCO/JSTOR	1607	103	28
Environmental Management and Culture	EBSCO/JSTOR	545	45	23
CSR and Culture	EBSCO/JSTOR	985	43	9
Sustainability and Strategy	EBSCO/JSTOR	2609	0	0
Sustainability and Leadership	EBSCO/JSTOR	176	5	1
Sustainability and HR/HRM/ human resourc*	EBSCO/JSTOR	719	11	2
Sustainability and Code/Conduct	EBSCO/JSTOR	307	19	3
Sustainability and Incent*	EBSCO/JSTOR	212	10	3
Sustainability and Train*	EBSCO/JSTOR	72	14	6
Sustainability and Recruit*	EBSCO/JSTOR	156	8	1
Sustainability and Change	EBSCO/JSTOR	2020	39	23
Sustainability and Implement*	EBSCO/JSTOR	226	46	22
Sustainability and Culture and Measure*	EBSCO/JSTOR	10	29	17
Sustainability and Report* and Culture	EBSCO/JSTOR	943	12	5
Sustainability and IT /Information technology	EBSCO/JSTOR	44	2	1
Sustainability and Innovat*	EBSCO/JSTOR	250	35	16
Sources recommended by others	Key contacts	30	30	21
Studies cited in other works	Studies identified in prior searches	5	5	3
Sustainability – Practitioner Reports and Books		60	60	14
Books: Sustainability and Culture	Google books, amazon, key contacts	56	56	10
Practitioner Reports: Sustainability and Culture	Key contacts and google search	4	4	4

SEARCH	SOURCE	INITIAL SEARCH	PRELIMINARY SCREENING	RETAINED
Analogous Interventions		2710	115	83**
Embed* and Culture		687	25	15
Innovat* and Culture		635	28	23
Compl* and Culture		284	21	18
Safety and Culture		384	21	21
EMS/environmental management system* and Culture		600	5	2
High reliability organization and Culture		64	7	6
TQM /total quality management and Culture		56	8	8
Total		13756	701	179

** Unique document count (since some documents arose from multiple search terms). In the final column, the documents are recorded in the first search in which they appeared.

The final screening retained a total of 179 sources including 82 academic sources related to sustainability, 83 sources related to analogous cultural interventions, 10 books and 4 practitioner reports. A complete reference list for the final document set is provided in Appendix B.

DATA EXTRACTION

Our data sources were then loaded into a qualitative analysis program called Atlas.ti. Atlas.ti (2010) was selected for this purpose due to its ability to handle large bodies of data (and in particular, PDFs) along with the tools it provides to help arrange, reassemble, and manage these materials in systematic ways. The use of a qualitative analysis program was instrumental in handling a data set this large by supporting the analysis process and by permitting us to organize and query our findings.

Our next task was to extract the relevant information from each of the sources. We did this through a process of ‘coding.’ Open coding involves “breaking down, examining, comparing, conceptualizing, and categorizing data” (Strauss & Corbin, 1990: 61). Coding involves selecting part of the text (a ‘quotation’) and attaching a label or tag (a ‘code’) to that text. It also involves a process of constantly comparing

incidents to each other in the data (Holton, 2007). It is a highly systematic and iterative process that formed the foundation of our analysis. We coded each and every source by asking ourselves the following questions:

What are they doing?: We coded every instance where we found an organizational practice that aimed to embed sustainability in organizational culture. In naming our codes, we made use of gerunds (words ending in ‘ing’) to capture what the organizations were ‘doing.’

Who is doing it?: Initially, our aim was also to capture ‘who’ within the organization was undertaking the practice (for example, the human resources department, the CEO, the Board of Directors, management, or employees). We found it was often difficult to identify based on the information provided in the articles, and that practices often straddled multiple groups. While we continued to attempt to code the data in this way, in the end, we did not make use of these codes in our analysis.

Why are they doing it?: For each practice, we asked ourselves, why are they doing this... what is their goal? Initially we coded openly, making use of codes such as: ‘they said they would,’ comply; and improve. By comparing the properties of these codes, we began to group them into two categories of goals: fulfillment and innovation.

How are they doing it?: For each practice, we asked ourselves, how are they going about it? Initially, we used codes such as talk, model, system, rule, procedure and codify. We began to group these into two categories of approaches: informal and formal.

When are they doing it?: Again, our aim was to assess where each organization was along the sustainability trajectory (from just starting out through to truly embedding sustainability). Unfortunately, the data sources frequently did not lend themselves to this kind of assessment. While we continued to attempt to code the data in this way, in the end, we did not make use of these codes in our analysis. Our inability to sort the practices in this way led to one of our recommendations for future research—that researchers attend to where an organization is along the sustainability trajectory.

As we proceeded with coding, we began to develop a tentative framework as a way to organize the practices. We observed that any given practice might be coded as: informal/fulfillment; formal/fulfillment; informal/innovation; or formal/innovation and that we were finding practices with each of these characteristics. This led to the development of a framework that contrasts the goal of the practice with the approach to making it happen. (More information on the development of this framework is provided below).

As a final quality assurance check on our data set, at the end of our preliminary coding round, we sorted all of our sources by ascending number of practice codes. We reviewed all studies with zero or only one code to confirm their inclusion or exclusion from the study. We excluded sources without any practice codes or other relevant codes and documented our rationale for excluding them. These exclusions are reflected in the summary table presented above.

CRITICAL APPRAISAL OF THE DATA

A key part of the systematic review process involves making a critical appraisal of the review findings. Our initial desire was to be able to make an assessment of the strength of support of each research study. Our desire was to be able to compare the studies in terms of sample sizes and effect sizes. We did attempt to classify our studies in this manner. However, the vast majority of the studies included in this review did not report effect sizes, reflecting the tendency for research in this area to make use of qualitative case studies of ‘sustainability leaders.’ In our view, this finding alone presents a reflection on the state of the literature in this domain.

An additional issue that we faced was that many research studies made reference to the efficacy of particular practices that went beyond the empirical findings of the paper. This is not unique to this research domain, but it did present challenges for our method, given that our unit of analysis became the practices themselves, rather than a given study. Our response was to switch from assessing the strength of each study and instead, to code each individual practice in term of its degree of empirical support. We used three codes for this purpose: proposed but not yet tested (P); empirically supported (E); and empirically tested and unsupported (N).

Practices were classified as proposed but not yet tested (P) if the practice was proposed in a practitioner report, a book aimed at practitioners or in the case where empirical papers proposed a practice that went beyond the empirical findings of that particular paper. Practices were classified as empirically supported (E) when the particular practice was the subject of empirical testing in the article and the practice received empirical support. Practices were classified as empirically tested and unsupported (N), when the particular practice was the subject of empirical testing in the article and the practice did not receive empirical support. In the end, there were only three instances of practices that were reported as unsupported out of a total pool of 1695 instances of practices. In each case, it was not the entire practice that was unsupported, but rather an aspect of the practice. These instances are addressed in the text in the discussion on the particular practice and are marked in Table A2.

DATA SYNTHESIS

Our coding process was systematic, inductive, and emergent (Holton, 2007). Our codes evolved through constant iteration comparing practice to practice to find patterns, and to establish similarities and differences between practices. The codes were assigned by going line by line through the data to identify and label actions, characteristics, and qualities as they arose. Based on an evolving framework that aimed to group practices according to their approach and their goal, we began tentatively grouping practices into categories. Codes that seemed to be similar were grouped into tentative categories. Practices in a category were compared and sorted, and the properties of each category were articulated and refined.

The process of grouping, defining and refining codes was achieved through an active and ongoing discussion between the co-authors. We spent hundreds of hours reviewing and discussing each and every instance of a practice (1695 quotations in total) and made decisions about where to place it, how it was similar to or different

from other practices grouped in the same category and whether it was necessary to join or split out practices or categories to better reflect the data.

As each practice and category developed, we wrote extensive memos about their properties, including defining the practices, providing examples and noting any findings from the various practitioner and empirical sources. These memos formed the basis of Chapters 3-6 of this report.

RESULTS

When it came time to writeup the results (and in particular, Chapters 3-6) we returned to the memo we had written for each individual practice and reviewed each and every quote again. Based on this, we finalized a definition for each practice. Next, we identified sample micro-practices (exemplars for each practice) and finally, captured the material as part of an overall narrative and assessment of the state of each practice.

In presenting our results, we struggled with the issue of how to ‘count’ the practices. In a given source, a particular practice may have been coded in more than one location. To address this issue, we revisited our codes and made use of a function in Atlas.ti called ‘continued by’ to create a linked chain of quotes that registered as only one overall ‘instance,’ so that one study did not overly skew the statistics. This was a balancing act. In doing this, we are able to present an overall picture of how many studies have examined the various practices and whether they were simply proposed or have been empirically tested. However, presenting the data in this way camouflages the extent to which each source concentrates on that particular practice. In the end, we felt that presenting the data in this manner presents a better overall picture of the field.

Tables A2a and A2b reveal which studies propose a given practice (Table A2a) or test it (Table A2b). In these tables, a given practice is counted only once per document regardless of how many times it was mentioned. The numbers reflect the sum of these instances for a given quadrant or category. The following table (Table A3) presents this information aggregated to the level of categories. As can be seen, practices aimed at fulfillment have been studied and written about more often than practices aimed at innovating, and very little is known about formal practices for innovating.

TABLE A2: SUMMARY OF THE NUMBER OF STUDIES THAT ADDRESSED EACH CATEGORY OF PRACTICE

	Proposed	Empirical	Analogous Intervn.	TOTAL
Fostering Commitment	105	48	16	169
Engage	26	8	6	39
Signal	43	29	3	74
Communicate	5	5	3	13
Manage Talent	20	4	1	25
Reinforce	11	2	3	16
Clarifying Expectations	102	59	17	178
Codify	19	6	4	29
Integrate	43	19	6	67
Assign	5	10	-	15
Train	6	8	2	16
Incent	8	3	2	13
Assess	17	8	2	27
Verify/Audit	4	5	1	10
Building Momentum for Change	66	27	9	102
Raise Awareness	15	5	1	21
Champion	8	4	2	14
Invite	14	9	2	25
Experiment	6	3	1	10
Re-envision	7	1	1	9
Share	16	5	2	23
Instilling Capacity for Change	24	9	2	35
Learn	18	8	2	28
Develop	6	2	0	7
TOTAL	297	143	44	484

LIMITATIONS: WHAT'S INCLUDED IN THIS REVIEW AND WHAT ISN'T

New work is being produced all the time. Therefore, there will most certainly be relevant studies not included here simply because they were published after our search ended. We have attempted to capture forthcoming work by requesting that researchers in this area send us any work in progress or work under review, some of which are included here.

Given our focus on embedding sustainability within the organization, we have not addressed issues related to stakeholders or supplier sustainability specifically in this review. Please note that the NBS has separate systematic reviews devoted to both community engagement and managing sustainable supply chains.

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APPENDIX B:

Final Document Set

FINAL DOCUMENT SET (179 SOURCES)

The best 179 sources, from an initial search result set of 13,756 articles were included in this review. Below is the final set, divided into three groups: Sustainability – academic; sustainability – practitioner; and analogous interventions.

SUSTAINABILITY – ACADEMIC (82)

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