How mental models influence decision-making: insights from leaders of sustainable Ontario SMEs

by

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Abstract

This research project explored the relationship between mental models and core strategic decisions about sustainability, by focusing on leaders of Ontario Small-to-Medium-sized-Enterprises (SMEs) who were already recognized by third parties as leading in the transition towards sustainability.

A design probe was used to collect a qualitative data and visual information from the participants' own perspective. Twelve SME leaders completed the design probe, sharing their thoughts, values, past experiences and future plans through a series of generative prompts.

The results led to five key insights about the participants' mental models and decision-making about sustainability, as well as implications for SME Strategy and the design of strategic tools for SME leaders. A model was proposed to help other SMEs envision ways to catalyze larger-scale impacts beyond their own internal operational decisions.

Overall, the five insights revealed the importance of thinking that is long-term, creative, global, and systems-oriented, as well as the challenge of sharing mental models with internal and external stakeholders.

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Introduction

The Context of this Research Project

This project was conducted within the context of a research group called the Strongly Sustainable Business Model Group (SSBMG), associated with OCAD University's Strategic Innovation Lab (sLab). This research group seeks to accelerate the adoption of economic, social and environmental sustainability within small and medium sized enterprises (SMEs).

The SSBMG takes as a starting point the theoretical definition of "strong sustainability" (Ayres, Van den Bergh, & Gowdy, 1998). This definition stresses that the financial system is nested within a social system, which is in turn nested within an ecological system, and that each relies on the larger systems for its existence. The corresponding "capital" – financial, social, and ecological – is defined as "non-substitutable", meaning that social and ecological capital cannot simply be replaced with financial capital or technology, because they cannot perform the same functions. Based on the philosophical stance that future generations should enjoy a quality of life that is equal to or greater than the present generation, all three forms of capital need to be not just conserved, but restored and enriched.

The overall SSBMG research agenda looks at the issue of organizational sustainability through the lens of business models, and aims to ultimately develop tools or methods that might holistically link sustainability to the core decision-making processes within these SMEs. The SSBMG research agenda is organized along the following topics:

1. Undertake human-centric research as to how leaders in the categories of organizations concerned actually make decisions and what role, if any, business models play in this context

2. Develop and validate the ontology for strongly sustainable business models

3. Explore advanced methods of impact measurement and valuation of social and environmental benefits that can support decision-making in organizations, particularly in the context of business models

4. Identify and map the processes related to business strategy decisions in these organizations

5. Use design methods to develop a tool kit, and test the kit with organizations to further improve it—and create case studies

6. Use learnings from the above activities to define new guidelines for business incubation and acceleration activities

This research project is mostly focused on topic 1, attempting to develop a deeper understanding of the people who would actually make these key decisions within SMEs. The work of the SSBMG needs to be informed by the needs, challenges, perspectives, habits, and mindsets of the SME leaders who's organizations we hope to assist in becoming more sustainable. In other words, there is a need to understand what SME leaders really need on the "demand" side of the equation, before we begin designing solutions on the "supply" side. The results of this research project may provide input for other SSBMG research topics, particularly numbers 5 and 6, which are more practical in nature.

Background: gap analysis of sustainability research

Gap 1: A lack of attention paid to mental aspects of sustainability at the individual level

Much research and writing about sustainability tends to focus on the external, concrete aspects—metrics, measurement, ratings, systems, supply chains, and so on. But there is much less written about the way that individuals think about sustainability, and how that effects their decisions and actions. Some recent scholarship using Integral Theory as a lens for examining current approaches to sustainability (Brown, 2007) has revealed a heavy focus on the perspective of exterior-collective, (i.e. systems-oriented), and a lack of attention paid to the perspective of interior-individual— the upper left quadrant shown in Figure 1, which includes experiences, thoughts, and emotions at the level of the individual.
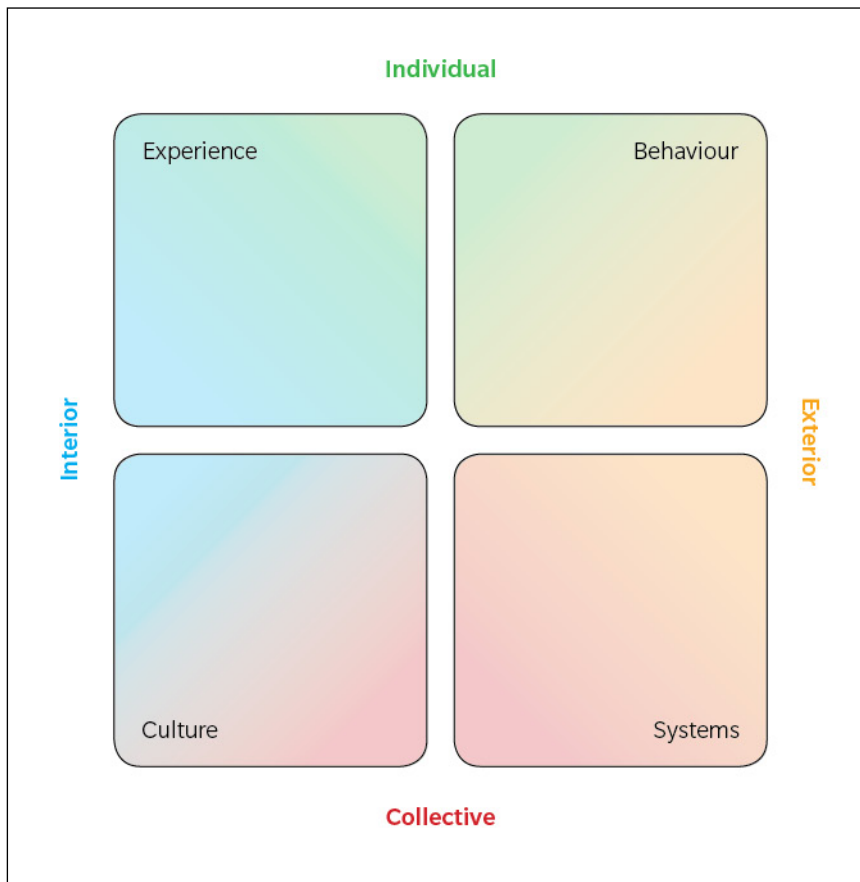
Figure 1: Integral Theory Framework (based on McEwen & Schmidt, 2007)

Writing about how integral theory could help to improve sustainability outcomes, Floyd & Zubevich also echoed the need to focus more on the Individual/Interior perspective in the upper left quadrant: "There is no deficit of objective facts about the problems that we face, or techniques for responding to them. …We would suggest, though, that there is a deficit in our individual and collective interior capacity to care enough to take responsibility for this objective situation." (2010, p. 64)

In general, there is a gap in sustainability research with regards to the perspective of the Internal-Interior (the upper left quadrant in the integral theory

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framework). This implies a need to pay more attention to the mindsets of individuals as an important component in making businesses more sustainable.

Gap 2: A lack of attention paid to SME sustainability

Small to Medium Enterprises (SMEs) are defined by Industry Canada as businesses with less than 500 employees. In Ontario, as of 2009, they accounted for 99.7% of businesses, 51% of employment, and 40% of economic activity (Snapshot of Ontario's Small and Medium Enterprises, 2010). National statistics for Canada are similar, with SMEs accounting for even more employment and economic activity.

The SSBMG has chosen to focus on this SME segment because of their potential for positively impacting the sustainability of our economic system. This focus is inspired in part by the "bottom of the pyramid" concept from literature on global business innovation, which highlights the fact that there are a huge number of people in the lower part of the global "economic pyramid". When thought of as a pyramid with the few wealthy people at the top and the much larger populations at decreasing levels of wealth, those at the bottom have relatively little personal wealth or capital. However, their huge number – and the fact that many of their basic needs are unmet — makes them an attractive market for innovative new offerings. For a good introduction to this concept, see Creating Sustainable Value by Hart & Milstein (2003).

In a similar way, we might assume that a single SME in has relatively little capital, influence, or impact on an individual basis, especially when compared to a big corporation or a multinational enterprises (MNE). However, their sheer number means that SMEs represent a huge opportunity to impact the

sustainability of the overall system, for better or for worse. In fact, the economic system as a whole cannot become truly sustainable if these smaller players are ignored.

With this in mind, it should also be noted that most sustainability research and consulting to date has focused on larger corporations and MNEs, so there is a need to explore sustainability in the context of SMEs. In her dissertation entitled *Sustainable innovation processes within small and medium-sized enterprises*, Hilke Bos-Brouwers stated:

> In the past 20 years increasing attention for corporate sustainability unearthed a growing body of knowledge on business approaches, revealing implementation mechanisms, common pitfalls and conditions for success. However, this knowledge is mainly based on large companies and multinational companies. They have been the focus of scientists, governments and NGOs alike, because of their (worldwide) visibility, sheer size and impact on environmental and social resources.
> (2010, p. 14)

She goes on to argue that there are many differences between SMEs and MNEs that need to be taken into account, including "organizational capabilities and resources, relations with and influence on stakeholders and the dominant role of the entrepreneur" (pp 15). These differing characteristics mean that practices that work well for MNEs cannot simply be "transplanted" to SMEs.

Other literature has also emphasized the difference between MNEs and SMEs in relation to sustainability strategies. Moore & Manring have outlined the importance of SMEs to global sustainability, pointing out that SMEs may actually have some advantages over MNEs (2009, p. 277). These include being more nimble and faster to adapt to changing technologies, as well as being able to more quickly change organizational processes and business models. Finally, because SMEs are more exposed to competitive forces, they do not become as complacent

or insulated from market shifts, giving them an advantage in adapting to change (pp 278). While some approaches to sustainability may work for both SMEs and MNEs, if we are truly interested in taping the potential of the SMEs that make up the "bottom of the pyramid" in the business landscape, we must first understand their unique needs, challenges, opportunities, strengths, and limitations in relation to sustainability.

Narrowing the Scope: Why focus on Ontario SMEs in particular?

First, there are practical reasons – the Ontario economy in particular could benefit from SME innovation that leads to more sustainable businesses. Since the traditional manufacturing sector in Ontario has been disrupted by global competition over the past few decades, new forms of value creation will be required if the Ontario economy is to remain healthy and sustainable in the long term. SMEs provide a fertile testing ground for these new forms of sustainable value creation, and it is hoped that this research might provide insights to improve their efforts.

Second, there are a growing number of pioneering SMEs within Ontario that are creating value through more sustainable offerings. Over the past decade, the Greater Toronto Area (GTA) has become a hub for businesses in the clean tech, green building, environmental consulting, green marketing, and impact investing sectors, to name a few. This concentration of "leading organizations" makes Ontario and the GTA an ideal geographic source for participants in this research project.

A focus on Ontario allowed for a reasonable scope given the time and resources available for this project, but subsequent research studies could later be

carried out in other jurisdictions within Canada, or internationally, since SMEs represent the bulk of businesses on a global scale. It would be valuable to compare the data and find patterns or insights that emerge across various jurisdictions.

Learning from leaders: borrowing approaches from innovation studies

In the literature on sustainable business and sustainable development, the idea of sustainability is often represented as a journey, in recognition of the fact that most economic and industrial activities have a long way to go before they can truly be considered "sustainable". To express this idea, many researchers and authors have proposed frameworks that divide this sustainability journey up into a series of steps or levels that a company might move through over time, from less sustainable to more sustainable (for example, Beloe, Elkington, Kavita, Thorpe, Zollinger, & Kell, 2004; Nidumolu, Prahalad, & Rangaswami, 2009; Willard, 2002). The more sustainable levels of activity can be thought of as innovations that have been discovered or adopted by some companies, and not by others. Two concepts from the study of innovation suggest that there is value in trying to learn from these "leading" companies who are further along their journey to sustainability.

The first concept from the study of product innovation is called "lead user innovation", and suggests that many innovations are actually developed by users, not the manufacturers of products (Von Hippel, Thomke, & Sonnack, 1999). These innovations are often created by "lead users", who are defined as "companies, organizations, or individuals that are well ahead of market trends and have needs that go far beyond those of the average user" (pp 48). Importing

this concept into the context of sustainable business design, we might expect that many innovative business models and processes are already being created and used by those companies and individuals who are ahead of others on their journey towards sustainability.

The second concept is "positive deviance", a term from Positive Organizational Scholarship, which suggests that in any organizational situation, there is a distribution of behaviour, from the negative to the positive, and that at the extreme positive end of the spectrum one can find individuals who display "intentional behaviours that depart from the norms of the group in honourable ways" and that represent what is most excellent in the human condition (Spreitzer & Sonenshein, 2003). This concept can be used to identify behaviours by individuals at the extremely positive end of the spectrum, extract lessons about what those individuals are doing, and share or spread those behaviours to the rest of the group or organization. In this same way, it is hoped that by studying the Ontario SMEs that are already recognized as more sustainable than their peers, lessons could be learned and applied by other SMEs who are not as far along on their journey to sustainability.

Primary Research Question

The research question for this project was developed in an iterative process, beginning with the research agenda of the SSBMG (as outlined above), and then exploring the gaps in sustainability research with regards to mental models, as well as SMEs. The goal was to formulate a research question that would be open-ended, exploratory, and generate insights to inspire the design of strategic tools, as well as further research by the SSBMG and others. Focusing on Ontario SMEs

and adopting the approach of learning from those leaders already recognized for their sustainable activities led to the following primary research question:

For leaders within Ontario SMEs, what is the relationship between their mental models and their core strategic decisions about sustainability?

Second-Level Research Questions

Because the audience for this research might include both SME leaders looking to improve their sustainability efforts, as well as strategist and design thinkers looking to create tools for SME leaders, the following two sub-questions were developed as a way to frame the insights and implications of the research:

1. *What are the implications for SME strategy making?*
2. *What are the implications for the design of strategic tools for SMEs?*

Definitions of Key Terms

There were several key terms that were used throughout this research project which have multiple definitions.

Table 1 provides the definitions that were used in the context of this project, as well as the sources of those definitions.

It should be noted that the term "sustainability" was purposefully *not* defined, because exploring the research question in an open-ended manner involved asking participants for their own definitions of sustainability.

TERM	DEFINITION	SOURCE
Mindset	A fixed mental attitude or disposition that predetermines a person's responses to and interpretations of situations.	dictionary.com
Mental Model	Deeply ingrained assumption, generalizations, or even pictures or images that influence how we understand the world and how we take action.	Senge, 2006
Values	Beliefs that shape the criteria by which [an individual] allocates resources.	Sanders, 2008
Small-to-Medium Enterprise (SME)	An organization with fewer than 500 employees.	Industry Canada

Table 1: Definitions of Key Terms

A note about Entrepreneurship

Even though most of the participants in this study happened to be entrepreneurs or founders, this research was not intended as a study of entrepreneurs or entrepreneurship. There is a separate and well-developed body of theory and applied research about entrepreneurship. Much of that literature is concerned with the actual creation of businesses and the ways in which entrepreneurs view the world, approach risk, and move from ideas to action (Hill & Levenhagen, 1995; McGrath & MacMillan, 2000; Gaglio & Katz, 2001). For some examples of research that deals with entrepreneurship and sustainability, see Larson (2000), Schaper (2002), or Schaltegger & Wagner (2010). This research project is more concerned with the strategy and decision-making within established businesses, and how those practices relate to mental models.

Methodology

Overview of Research Process

The research methodology included a previous literature review, followed by more targeted Secondary Research, Primary Research based on the Design Probe method, and an Analysis phase to discover insights and connect some of the Primary Research findings to the Secondary Research.

Secondary Research Method

Secondary research was conducted to find any existing literature or studies that focused on the mental models of SME leaders in relation to sustainability strategy, in order to help explore the main research question. The goal was to find some existing frameworks or insights that could help to frame the approach or the results of this research project.

 The methods used to find secondary research sources included keyword searches on Google Scholar, Mendeley, and other reference databases. Typical keyword searches included terms such as: Sustainability, Sustainability Strategy, Sustainable Development, Environmental, Social, SME, Small business, Entrepreneurs, and others. Sources were also identified from the references in certain well-cited papers on the above topics, in order to find more specific literature related to this project's research question.

Primary Research Method

Because the research question deals with subjective, qualitative aspects such as mental models, values, planning, and decision-making, a research method was required that could address these challenging topics and generate rich, qualitative data. The other goal of the research was to take a human-centred approach and learn directly from the experiences of the participants. Several design research methods were considered and explored, including semi-structured interviews and workshops. Ultimately, the design probe method was selected due to its appropriateness for this type of inquiry.

Design probes are "an approach of user-centred design for understanding human phenomena and exploring design opportunities" (Mattelmäki, 2006, p. 39). While there are many variations of the method, it typically involves giving participants a designed artifact that includes a series of "prompts", to which they can respond. More than simply questions to be answered, the prompts are intended to support generative thinking from the participants. In general, design probes have three characteristics that make them a good fit for this research project:

1. They are based on user participation by means of self-documentation
2. They look at the user's personal context and perceptions.
3. They have an exploratory character. (Mattelmäki, p. 40)

There are several reasons for a researcher to use a design probe, including the need for inspiration, information, participation by users in ideation, and opening up of dialogue between designers and users (Mattelmäki, p. 58). In the case of

this research project, the design probe method was used mostly to gather information about participants' past experiences and current perspectives, as well as encouraging them to participate in strategizing for future challenges.

Please see Appendix A for more about the creation of the design probe, and a reproduction of the actual research instrument.

Recruitment Rationale and Plan

This project focuses on one subset of Ontario SME leaders, those who are already recognized as leaders in sustainable business. This subset was chosen for several reasons. First, the goal is to learn from those already succeeding in this area, in order to see if there might be lessons that could be applied by other leaders who are not yet as successful. Second, it is reasonable to assume that some of the earliest adopters of any artifacts designed by the SSBMG would in fact be those who are already leading in the transition towards sustainability, so those tools and methods should be compatible with the needs and wants of those leaders. Third, studying the mental models of these leaders could provide a benchmark for future research focused on leaders of other organizations that are not yet focused on sustainability. Comparison of these two groups of leaders and their mental models could then offer insights for the design of tools for each group, or both.

In order to find leaders who were already incorporating sustainability into their businesses, several recruitment sources were identified. The primary source were the approximately 50 Ontario companies that had been certified as B Corps. This is a third-party certification that assesses businesses based on higher

standards of social and environmental performance, accountability, and transparency. For more on B Corps, please see Appendix B.

Another promising source for recruitment that contained companies already identified by others as leaders in sustainability were the nominees and winners of the City of Toronto's annual Green Toronto Awards. These companies had been chosen by panels of expert judges, and with an 8-year timeframe, this represented a pool of several hundred potential participants, many of which were SME leaders. For more on the Green Toronto Awards, please see Appendix C.

Several other recruitment sources were explored, all based on third-party identification of sustainability leaders (for example Government of Ontario publications and white papers).

The goal was to have 10-15 SME leaders agree to participate, from a range of industries. In the context of this project, the term "leaders" would apply to anyone within an SME making decisions and leading change towards sustainability, not just CEOs or founders.

Recruitment was carried out in three main ways: direct contact via phone or email; online via a "Friends of B Corps" LinkedIn group; and through participants who introduced the researcher to other potential participants from their own professional networks.

Methods of Analysis: Seeking Patterns and Insights

The data from the design probe was analyzed in an exploratory way, seeking patterns and key insights within individual prompts and across all of the prompts as a whole. Keywords were identified and clustered to help build up to

overarching themes. Mind maps and visual thinking were used to connect ideas across the prompts and develop insights.

The individual prompts from each participant were rearranged and clustered in different ways to reveal similarities or differences. Summaries of the qualitative data were also entered into several excel spreadsheets so that the data could be compared side by side and notes and interpretations could be captured digitally and associated with a particular Prompt, as the analysis was occurring.

Some of the qualitative data and patterns were also examined in terms of rankings, frequencies or other numerical coding that could in turn be analyzed more quantitatively to reveal averages, consistencies, or anomalies.

Secondary Research Summary

Literature about the mental models of sustainable SME leaders is lacking

This research project explored the relationship between the mental models of leaders of sustainable Ontario SMEs, and their core strategic decisions about sustainability. This required the overlap of three specific domains of knowledge: sustainable business strategy; SMEs; and mental models. The initial literature review that led to this topic suggested that there was relatively little research on these three domains in combination. The secondary research results confirmed this gap, but did provide some learning regarding three key areas of overlap: 1) the importance of mental models in a business context; 2) sustainability in an SMEs context; and 3) mindsets that relate to sustainability. These three combinations are summarized below.

Mental models in a business context

It is important to distinguish between the terms *Mindset* and *Mental Model*. As defined above in the Introduction section, the term *Mindset* is more general and refers to overarching ways of thinking and perceiving. McEwen & Schmidt provided a good definition of mindsets in the context of sustainability and business as "interior patterns of mind, or frames of reference, from which individuals see sustainability and its importance" (2007, p. 31). The term *Mental Model* – while it has different definitions in different disciplines – refers to more specific ways of thinking about a particular topic or situation. In his review of the

history of the mental model concept, Johnson-Laird outlined a key characteristic of mental models that emphasizes this specificity: a mental model "has the same structure as the situation it represents…the parts of the model and their structural relations correspond to those of what it represents" (2005, p. 181). In the context of business, there are some well-known works that recognize this characteristic of mental models, and stress their value in relation to action and behaviour change.

The importance of mental models

In his seminal management book *The Fifth Discipline*, Peter Senge emphasized the importance of working with mental models in order to change behaviour (Senge, 2006, p. 164-190). He defined mental models as "deeply ingrained assumption, generalizations, or even pictures or images that influence how we understand the world and how we take action" (pp 8), making an explicit link between mental models and behaviour. Without surfacing, testing, and adjusting mental models, Senge argued that it is very difficult to implement new ideas or engage in real learning at an organizational level.

Models of a mental model

Senge's writing on mental models was in part based on the work of Harvard professor Chris Argyris. He has written extensively about mental models in the context of Action Logics – the study of how people make decisions and take action. Argyris proposed a generic model of how values and mental models influence decision-making, the Theories-in-use Model (Argyris, Putnam, & Smith, 1985). As shown in Figure 2, the *Governing Variables* – what could be called mental models – determine the *Action Strategies* that an individual uses, which

in turn determine the *Consequences*. This model includes the concepts of single-loop learning versus double-loop learning. In single-loop learning, only the action strategies are modified in response to outcomes, whereas in double-loop learning, the outcomes actually lead to a questioning and modification of the underlying governing variables.
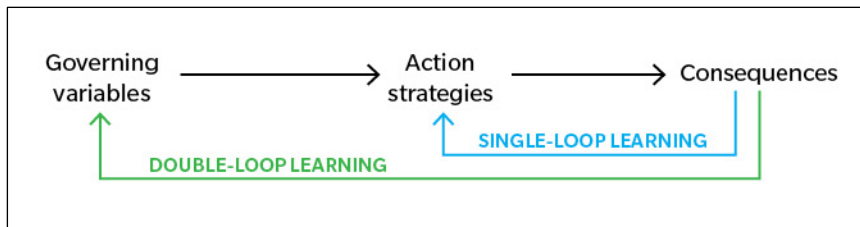
Figure 2: Theories-in-use Model (based on Argyris et al., 1985)

One very useful article discovered in the secondary research was "Mental Models: An Interdisciplinary Synthesis of Theory and Methods" by Jones, Ross, Lynam, Perez, & Leitch (2011). As the name of the article suggests, their work offered a summary of the mental model concept and attempted to provide a synthesis across several disciplines. Figure 3 is a visual summary of this article, which shows what the components of a mental model are, how they relate to one another, and reinforces the connection between mental models and behaviour.

A mental model answers the question:

How does 'X' work?

CONSTRUCTED FROM:
- Personal Life Experiences
- Perceptions
- Understanding of the World

AND SOMETIMES
- An Existing Mental Model (as Analogy)

A MENTAL MODEL IS:
a **limited** and **incomplete** mental representation of external reality:

It includes assumptions about **what aspects are relevant**, and assumptions about **causality and function**

USED FOR:
- Reasoning
- Prediction
- Decision Making
- (Influences) Behaviour

Figure 3: A Mental Model Framework

While it was helpful to gain a better understanding of the mental model concept, and there was certainly literature that emphasized the importance of working with mental models in order to make change, there was very little research found that explored the connections between mental models, small business leaders, and sustainability strategy.

Sustainability & SMEs

The Business Case for SMEs

In spite of a lack of focus on mental models, there was some literature regarding sustainability in an SME context. Most work in this area has explored the business case for SMEs to engage in more sustainable business practices, sometimes highlighting the characteristics of SMEs that are different from multi-national enterprises (MNEs) or large corporations (Revell et al, 2004; Moore et al, 2009; Louks et al, 2010). These were mainly framed at the organizational level or industry level of analysis.

Sustainable Innovation in SMEs

Hilke Bos-Brouwers has studied SMEs and sustainable innovation, focused on Dutch companies in manufacturing industries (2010). Her research sought to understand the internal and external factors that influence sustainable innovation in SMEs.

One of the factors related to mindsets was termed the "sustainability orientation" of SME leaders, which referred to the motivation and role of the owner-manager. Based on a framework by Keijzers (2002), Bos-Brouwers placed SME leaders' orientation into three categories: "compliance oriented"; "eco-efficiency"; and "value creation" (2010). One key finding was that those companies that had a leader with a value creation orientation tended to produce a greater number of sustainability innovations. This orientation was characterized in the following way:

> These companies have sustainability in the core of their business and see it as their ambition to integrate sustainability aspects and to introduce

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new products, services and processes. Motivation behind this orientation can be found in a drive to be an innovative frontrunner in their sector, their desire to lead by example and their long-term perspective. (Bos-Brouwers, 2010, p. 39)

The other mindset-related insight from this research was the identification of "cooperative mindsets" as a critical sub-factor that led to "conditions of cooperation", and was thus seen as contributing to sustainable innovation within the SME context (2010).

While Bos-Brouwers did *identify* some mindset-related factors, including the sustainability orientation of the SME leader, and a cooperative mindset, these factors were not explored in depth, and mental models were not the focus of her research.

The "How to" of SME Sustainability

Finally, in the domain of SMEs and sustainability, there was also some less academic writing that suggested *how* SMEs could make their businesses more sustainable. A notable example from the Canadian context was an Industry Canada report by Coro Strandberg and Amy Robinson entitled *Small- and Medium-sized Business Environmental Roadmap* (2009). Strandberg & Robinson provided the business case and benefits, as well as comprehensive, concrete advice on how to improve sustainability across a full range of business aspects, including planning, product development, marketing, purchasing, and human resources. Mindsets were only mentioned in passing within a section on leadership and culture, and for the most part the focus was on the more external and practical aspects of sustainability.

Sustainability & Mindsets

Sustainability Definitions as Representations of Mental Models

Part of the secondary research focused on how "sustainability" has been defined

in existing literature. It should be noted that there is no agreement on a single

definition. The term is contested and has multiple definitions, often reflecting the

personal viewpoints of those proposing the definition more than any scientific

consensus (Mebratu, 1998). For this reason, definitions of sustainability might be

thought of as reflections of individuals' mental models.

There are a small number of definitions that are frequently referenced in

the literature. One of the most-cited definitions (Stubbs & Conklin, 2008) comes

from a United Nations report *Our Common Future*, often referred to as "The

Brundtland Report", which described "sustainable development" as

"development that meets the needs of the present without compromising the

ability of future generations to meet their own needs" (Brundtland, 1987). This

report also conceptualized sustainability as consisting of economic, social and

environmental aspects, including resource limits, and dealt with the issue of

equity across a variety of contexts (Stubbs & Conklin, 2008).

In a critique of the Brundtland definition, Robinson (2004) explains that

while "sustainable development" and "sustainability" are considered by some to

be two different concepts, the Brundtland definition of sustainable development

has influenced the way many people think of sustainability in general.

Robinson highlights the tendency for these sustainable development

definitions to focus on efficiency, technology, continued economic growth, and an

anthropocentric view. On the other hand, sustainability definitions tend to

emphasize values, behaviour change, and a personal re-evaluation of human relationships – with each other and with the natural world. In spite of being skewed towards one side of this spectrum, the Brundtland definition of sustainability was significant because it explicitly linked the twin challenges of environmental deterioration and poverty, and insisted that they must be addressed in tandem (Robinson, 2004).

The Influence of Leaders' Mindsets on Sustainable Activity

The link between the mindsets of business leaders and the sustainable actions of their companies was explored by McEwen & Schmidt in a report entitled *Mindsets in Action* (2007). They suggested that complex and high-impact sustainability outcomes might require more advanced leadership mindsets.

Their report included a survey of sustainability leaders in large multinational companies in the manufacturing and transportation sectors, all of which had been recognized for their sustainability efforts. McEwen & Schmidt sought to understand what types of sustainability activities these companies were currently undertaking, interpreted through an existing tool called the "Gearing Up" framework (Beloe et al, 2004), shown in Figure 4.

Figure 4: The Gearing Up Framework (adapted from McEwen & Schmidt, 2007)

By interviewing leaders of 10 large corporations and analyzing their responses

using the Gearing Up framework, McEwen & Schmidt discovered the following:

that all 10 companies were actively trying to move up to higher and more complex

"gears"; that most companies were primarily active in Gear 3.0; that all had

aspirations or partial activity in Gear 4.0; and that only four had aspirations or

partial activity in gear 5.0 (2007, p. 16-18). McEwen & Schmidt offered support

(from several other sources) that this fifth and highest gear—concerned with the

redesign of financial systems and markets—was ultimately necessary for the true

sustainability of businesses (p. 18).

McEwen & Schmidt also explored how the actual mindsets of leaders

could help or hinder this progress to the Gear 5.0 level. They used the Leadership

Development Framework (LDF), to explain how mindsets could determine the

actions of leaders. The LDF describes nine progressive stages of mental

development and meaning making, "from egocentric opportunism to wise, timely

and world-centric action" (Cook-Greuter, 2004). See

Table 2 for an outline of seven common stages and their corresponding methods

of influence.

LDF STAGE	METHODS OF INFLUENCE
Magician	Reframe, turn inside-out, upside-down; clowning; holding up mirror to society; often behind the scenes.
Strategist	Lead in reframing, reinterpreting situation so that decisions support overall principle, strategy, integrity and foresight
Individualist	Adapt (ignore) rules where needed; or invent new ones; discuss issues and air differences
Achiever	Provide logical argument, data, experience; make task/goal-oriented contractual agreements
Expert	Give personal attention to detail and seek perfection; argue own position and dismiss others' concerns.
Diplomat	Enforce existing social norms; encourage, cajole; require conformity to protocol to get others to follow.
Opportunist	Take matters into own hands, coerce, win fight

Table 2: Leadership Development Framework Stages and Influence Methods (Cook-Greuter, 2004)

These stages are based on the idea of "vertical development", by which an

individual moves "up" through increasingly broad and more complex mindset

stages (see Figure 5). At each new stage, there is an "increase of individual

awareness, the expansion of what an individual can pay attention to, and,

therefore, what he or she can influence" (McEwen & Schmidt, 2007, p. 32).
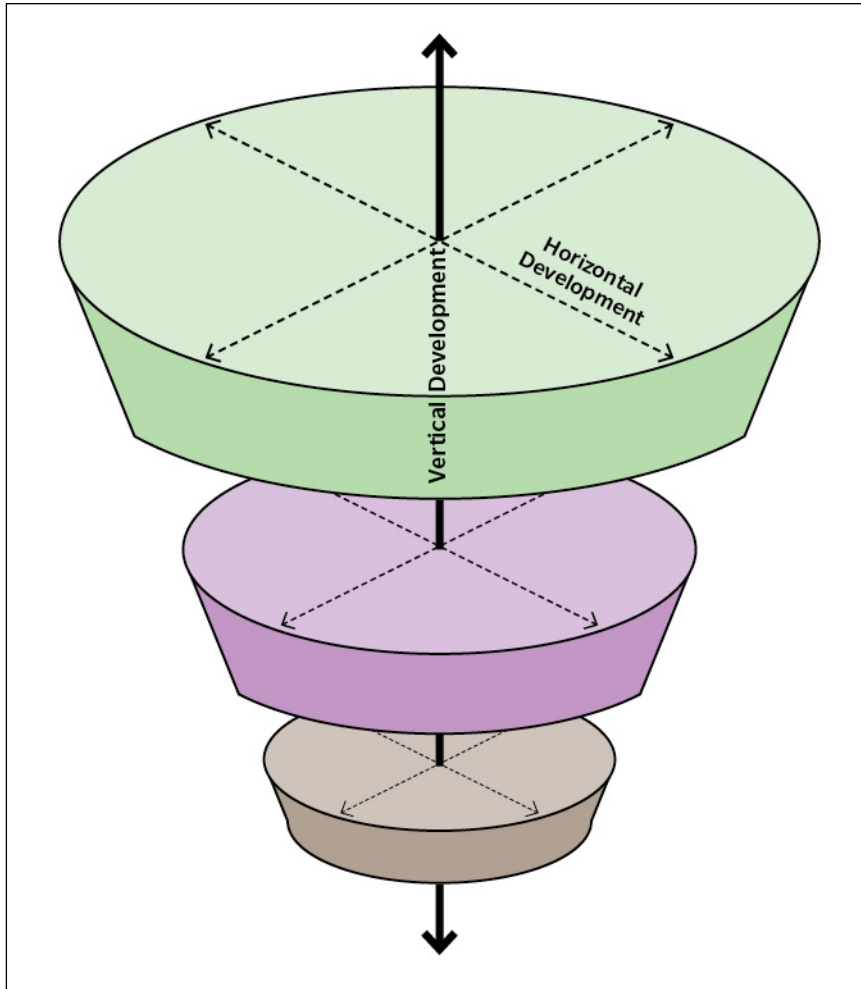
Figure 5: Vertical and Horizontal Development (adapted from McEwen & Schmidt, 2007)

McEwen & Schmidt argued that the activities required for Gear 4.0 (Integrate)

and Gear 5.0 (Redesign) involve a high level of complexity and system-level

change making. But in order to act at these higher gears, leaders first have to

perceive more complex and systems-level opportunities for action. The LDF framework could explain how the mindset of a leader influences this perception: "later-stage leaders see the world more broadly, in a more complex and integrated fashion, and from a more holistic viewpoint". (McEwen & Schmidt, 2007) In other words, the later-stage LDF leadership categories such as Individualist, Strategist, or Magician might be pre-requisites for action at the level of gears 4.0 or 5.0.

Mental Models for Sustainability: Six Dimensions to Consider

Organizational development professional John D. Adams developed one of the few frameworks that actually attempted to describe the ways of thinking that relate to more sustainable activity. While many people speak in vague terms about the importance of sustainable mindsets, Adams attempted to define these mindsets more specifically by observing patterns in ways of thinking and proposing "six dimensions of mental models" (Adams, Kelley, Applegate & McNichol, 2009). Each dimension is represented as a continuum between two different ways of thinking, with one on the left side, and the other on the right side, as shown in Figure 6.
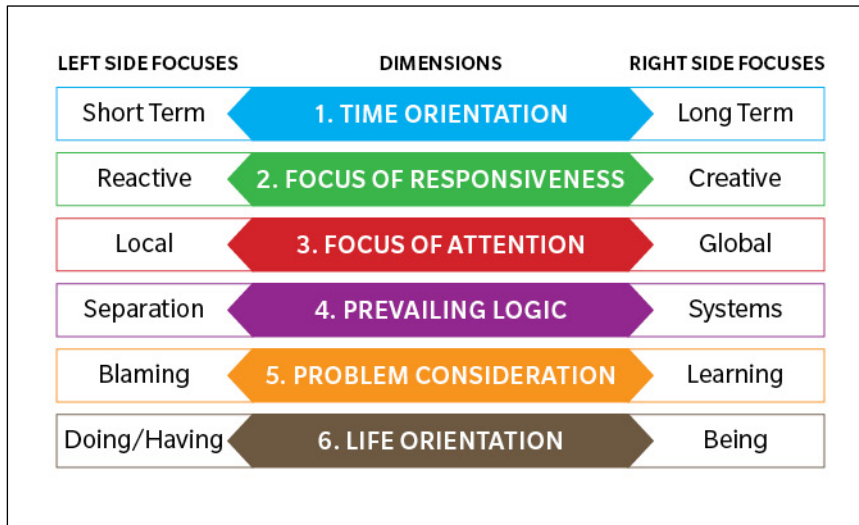
Figure 6: Six Dimensions of Mental Models for Sustainability (adapted from Adams et al., 2009)

Adams has collected qualitative data from managers and consultants in several countries (including Canada), asking them to describe the thinking in their organizations. Adams' analysis of this data through the framework indicated that the "left side" of the continua were dominant, at least within his sample group. At the organizational level, the same sample also reported that the flexibility of thinking across the continua – or what Adams termed the "degree of versatility" – was perceived to be quite low.

The dominance of one way of thinking was not characterized as "unsustainable" in and of itself. In fact, Adams stressed both the positive value and the limitations of focusing too much on *either side* of the six dimensions. However, it was suggested that individuals within organizations will need to use both more "right-side" thinking (ie thinking that is long term, creative, global, and systems-oriented) *and* increase their ability to move between the two sides of the continua in order to become sustainable enterprises.

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This framework is helpful in categorizing different ways of thinking, but it does not by itself provide an explanation of how these ways of thinking actually relate to sustainable decision-making or actions. It is a general framework, and could be useful as a scaffold to build on, or to organize more specific or concrete examples of mental models for sustainability. Also, it is not specific to SMEs, but may still be useful to both SME and MNE businesses in their attempts to become more sustainable enterprises.

Primary Research Results

Overview of design probe results

The goal of the design probe was to gather large amounts of qualitative, rich, personal data from participants. In general the research achieved this objective. Twelve participants from a diverse range of businesses completed the probe, as outlined below. Most probes were completed in full, though in two cases participants did not answer a particular prompt because it did not fit with their view of their business. Several participants also commented that they found the probe a useful tool for examining their thinking and strategy-making processes, which indicates that they saw an immediate value in the process of completing the probe, beyond the contribution to the research.

While 3 of the 16 prompts had an option to supplement the written answer with a drawing or diagram, only 3 participants did so. This resulted in less visual data than was originally expected.

Actual recruitment, response rate and completion rate

Thirty-four individuals were contacted as potential participants, either by phone or email. The actual response and completion rates are shown in Figure 7 and Figure 8, respectively.
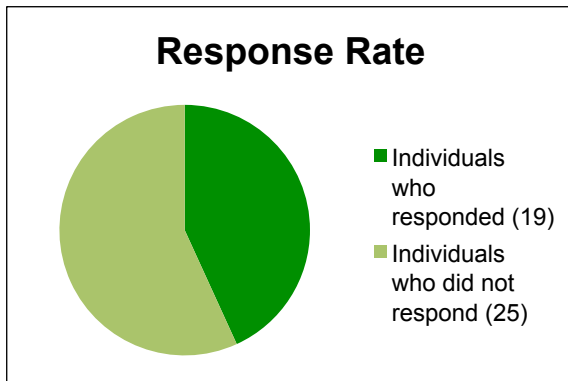
Figure 7: Design Probe Response Rate (56%)
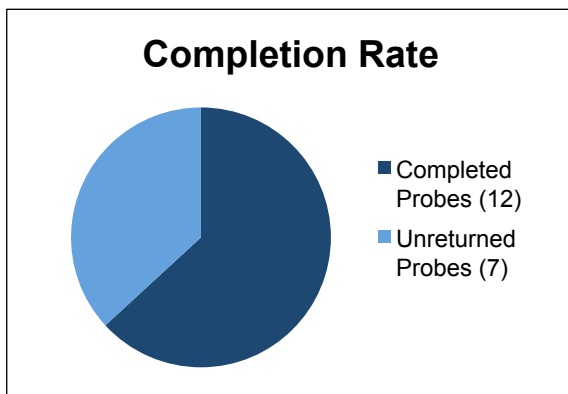
Figure 8: Design Probe Completion Rate (63%)

Participants were recruited on the condition of anonymity, so throughout this paper, they are referred to using a generic label and number, such as "Participant 5". The numbers were assigned during recruitment, and for that reason, the numbers span from 1 to 19, even though only twelve of the nineteen participants completed the design probe.

In general, most of the responses from the 12 participants were quite thorough and easy to understand, which minimized the need for follow-up questions. However, three participants were contacted via email to clarify or provide some more detail on a few of their responses.

Participant Characteristics

The twelve participants represent significantly diverse perspectives, in regards to their type of business, their gender, and the source used for their recruitment. This diversity is important because the goal of this research was to discover general insights that might apply to a broad range of SME leaders, rather than to prove or disprove a hypothesis about a particular group of leaders.

What did the participants have in common?

All of the participants were engaged in running a for-profit SME in which sustainability was core to the value proposition of the company. The results of the research also showed that all twelve leaders saw sustainability as embedded in the purpose of their company, which may set them apart from other SME leaders who are only concerned with operational sustainability.

It should also be noted that 11 out of the 12 participants were the founders (or co-founders) of the companies they were currently leading. The exception was a participant who was the current CEO of the organization, but not the founder.

Leaders from a diverse set of industries

As shown in Figure 9, the twelve participants who completed the design probe represented a range of businesses—including both manufacturers and service-oriented businesses—from many different industries.

Figure 9: 12 Participants from Diverse Industries

Gender diversity of participants

Attempts were made during recruiting to ensure as much as possible the gender diversity of participants, in order to avoid a bias in the results. The male-to-female ratio is shown in Figure 10. While this is not an equal ratio, it should be noted that it does represent a higher percentage of female leaders (33%) than the 16% of SMEs that were female majority-owned in Canada as of 2007 (Jung, 2010). Based on this comparison, there was more gender diversity in this sample group than in the general population of SME leaders.

Gender of Participants

- Male (8)
- Female (4)
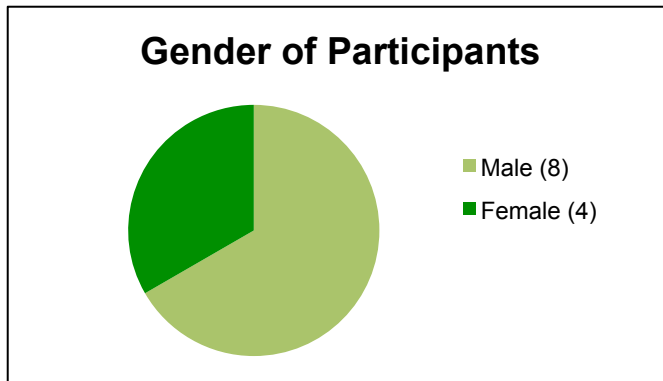
Figure 10: Gender of Participants

A diversity of recruitment sources

The twelve participants were recruited from a variety of sources, including: Ontario-based certified B Corps; winners and nominees of the Green Toronto Awards; and other businesses from the researcher's professional network which have been recognized as innovative and sustainable by third parties. Figure 11 shows the ratio between these three categories of recruitment sources. This diversity was useful in mitigating any biases that might have arisen if all the participants were drawn from one recruitment source.

Recruitment Sources

- B Corps (7)
- Other (3)
- Green Toronto Awards (2)
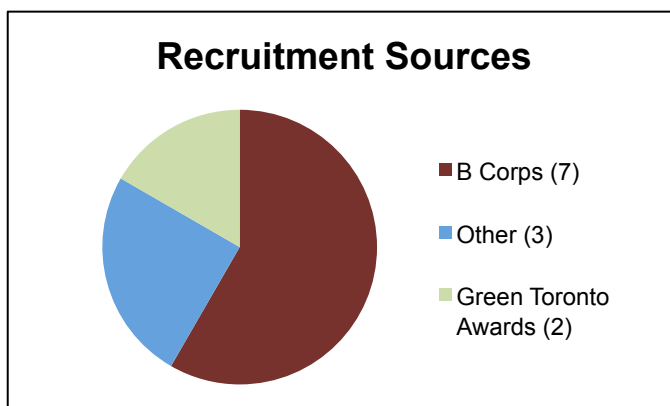
Figure 11: Design Probe Recruitment Sources

Insights & Implications

Overview of Key Insights

The analysis of the design probe data revealed five key insights about the relationship between SME leaders' mental models and their core strategic decision about sustainability. The five insights are summarized here, and then each is explored in more depth on the following pages, including the supporting data and the implications for both SME leaders and designers of strategic tools for these leaders.

Insight 1:
Many of these leaders see their greatest contribution as "Catalyzing Larger Impacts".

Insight 2:
SME sustainability needs to be seen as a whole, not just a sum of the parts.

Insight 3:
Even for these forward-looking leaders, there is a gap between long-term aspirations and short-term goals.

Insight 4:
Experiencing "how the rest of the world lives" may be a key factor in developing more actionable mental models of sustainability.

Insight 5:
The dissemination of mental models is a crucial challenge to the sustainability of these SME companies.

Insight 1: Many of these leaders see their greatest contribution as "Catalyzing Larger Impacts".

What did we learn?

In chemistry, a catalyst is a substance that increases the rate of a chemical reaction. In a similar way, these leaders are primarily focused on how they can accelerate change beyond the boundaries of their company. They certainly don't ignore the internal, operational aspects of sustainability, but their mental models place more emphasis on being a catalyst for change in more external contexts.

This theme of *Catalyzing Larger Impacts* was not limited to organizations that they interacted with directly. Participants saw themselves as having influence across a wide range of scales, which can be grouped into four levels: customers, industries, markets, and cultures. This mental stance is more proactive than reactive, and more focused on opportunities than on risk-mitigation.

What findings support this insight?

Several prompts asked participants to offer their own definitions of sustainability from various perspectives, and their definitions were useful for illuminating their mental models of sustainability. Prompt 2 asked participants to answer the question "What does 'sustainability' mean to you, in the context of your organization?" This was an open-ended question, but a clear pattern emerged in the responses: internal versus external aspects of sustainability. Many participants acknowledged that they *do* see internal actions as part of sustainability. However, participants also emphasized the importance of

influencing the sustainability of external stakeholders. In their answers to Prompt 2, nine out of twelve participants mentioned influencing or creating change beyond the boundaries of their own company. This led to the identification of the theme *Catalyzing Larger Impacts*. The following quote from Participant 8 provides a good example of this way of thinking: "We minimize our own footprint for credibility, however, the main benefit of our organization is the footprint reductions and sustainability improvements we catalyze in other organizations."

Prompt 3 reinforced the presence of this mental model. This prompt asked participants "How would you describe your current role within your organization, in terms of how it impacts or touches on sustainability?" Even with a focus on the organization itself, seven out of twelve participants chose to emphasize their influence beyond their company, whether it was to "guide our staff and clients", to "oversee the support and development of a market", or to "lead a company that educates the public".

Prompt 3 included an option for participants to draw a picture or diagram to reflect their role. The drawing shown in Figure 12 provides a good visual representation of an individual catalyzing impact at progressively larger scales.
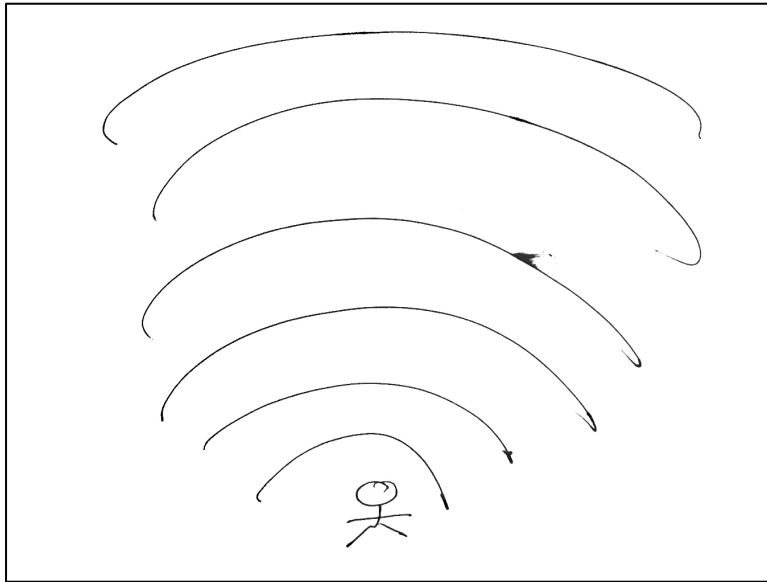
Figure 12: The Power of an Individual (Participant 12's response to Prompt 3)

The scale of impact perceived by these SME leaders was explored more explicitly in other prompts. In Prompt 11, participants were asked to represent their company's sustainable activities within a framework consisting of 5 different levels (adapted from Beloe et al., 2004). As shown in Figure 13, each level represents a progressively more complex and larger-scale activity related to sustainability, from simply following regulations at *Level 1: Complying*, to changing entire systems at *Level 5: Redesigning*.
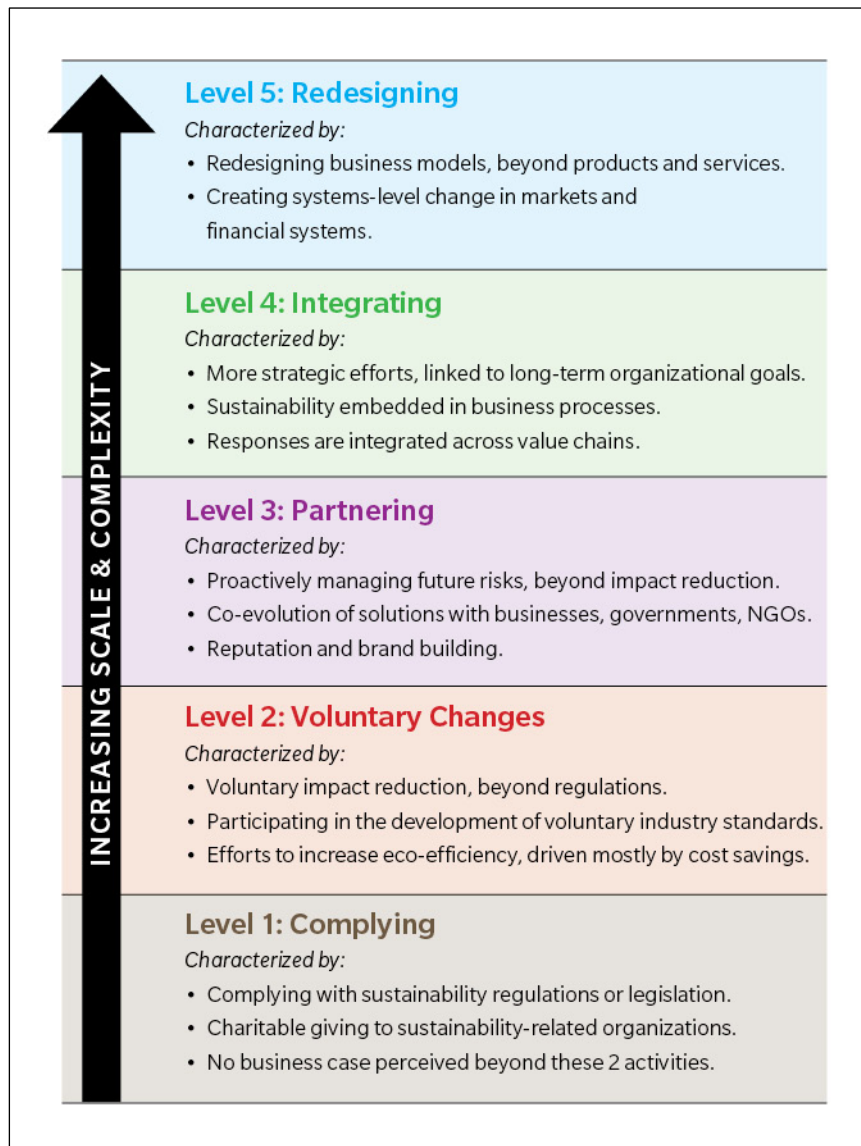
Figure 13: Five Levels of Sustainable Activities (adapted from Beloe et al., 2004)

When asked to locate their current efforts within this framework, 11 out of 12 participants indicated that they are currently taking some action at *Level 3: Partnering* (as shown in Figure 14). In other words, they believe that their current actions already have an influence on other businesses, NGOs, and

governments, with some even characterizing their current activity at the level of value chains, markets, and financial systems (levels 4 and 5).
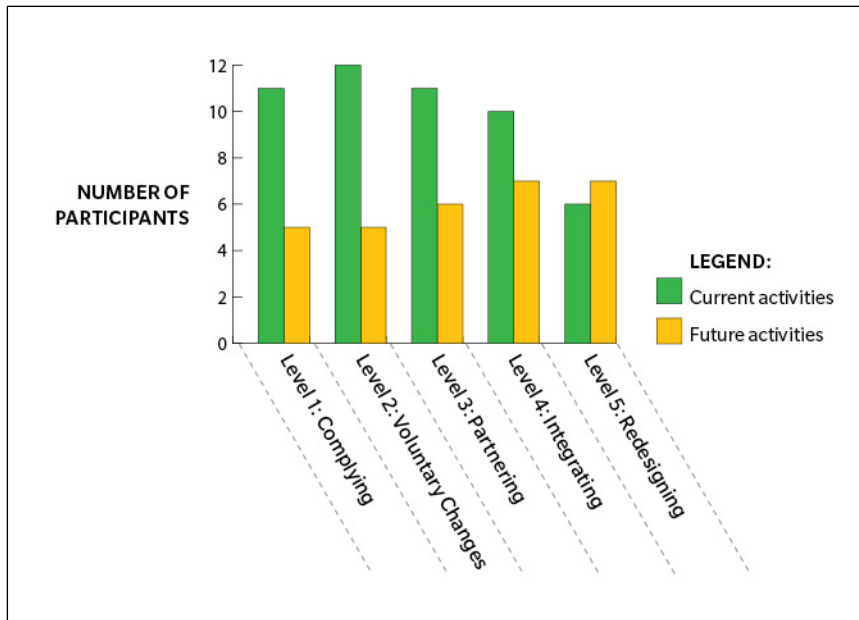
Figure 14: Comparison of Current and Future Levels of Sustainable Activity

Prompt 11 also asked participants to use the same framework to identify at which levels they were *planning* to initiate new activities within the next 5 years. As shown in Figure 14 above, 7 participants identified at least one activity at the two highest levels. This shows that despite the small size and limited resources of their businesses, these participants aspire to future activities that have influence over the sustainability of increasingly larger systems.

Finally, analysis of participants' long-term aspirations also revealed the theme of *Catalyzing Larger Impacts*, beyond the boundaries of their companies. Prompt 16 asked participants to choose a sustainability goal that would be critical to the success of their company in the next 10 years. While the specific goals were unique, some common categories emerged, as shown in Figure 15. This reinforces

the idea that these SME leaders see their companies as having an impact on sustainability out of proportion with their small size.
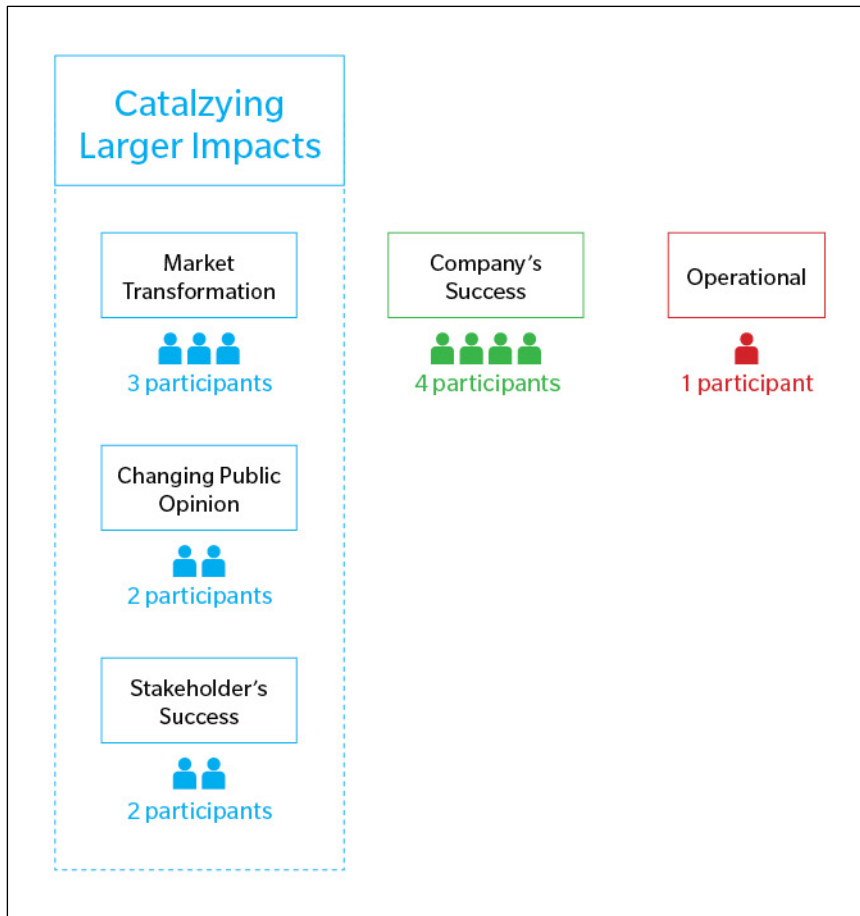
Figure 15: Types of 10-year Goals (responses to Prompt 16)

How to achieve more influence – partners and collaboration

Two of the prompts provided some insight into how these SME leaders might find ways to catalyze impact within larger systems. Perhaps as a necessity due to their small size and limited resources, these leaders seem to value partners and collaboration. This reflects an emerging trend in business towards more collaboration in general. It may simply be due to the fact that these leaders are in

the minority, and must therefore find ways to leverage their efforts through others in order to be successful in large-scale change-making. Prompt 16 (mentioned above) also asked participants to imagine what forces would help them to reach their 10-year goals. The most common category of "enabling forces" was *Partners,* as shown in Figure 16.
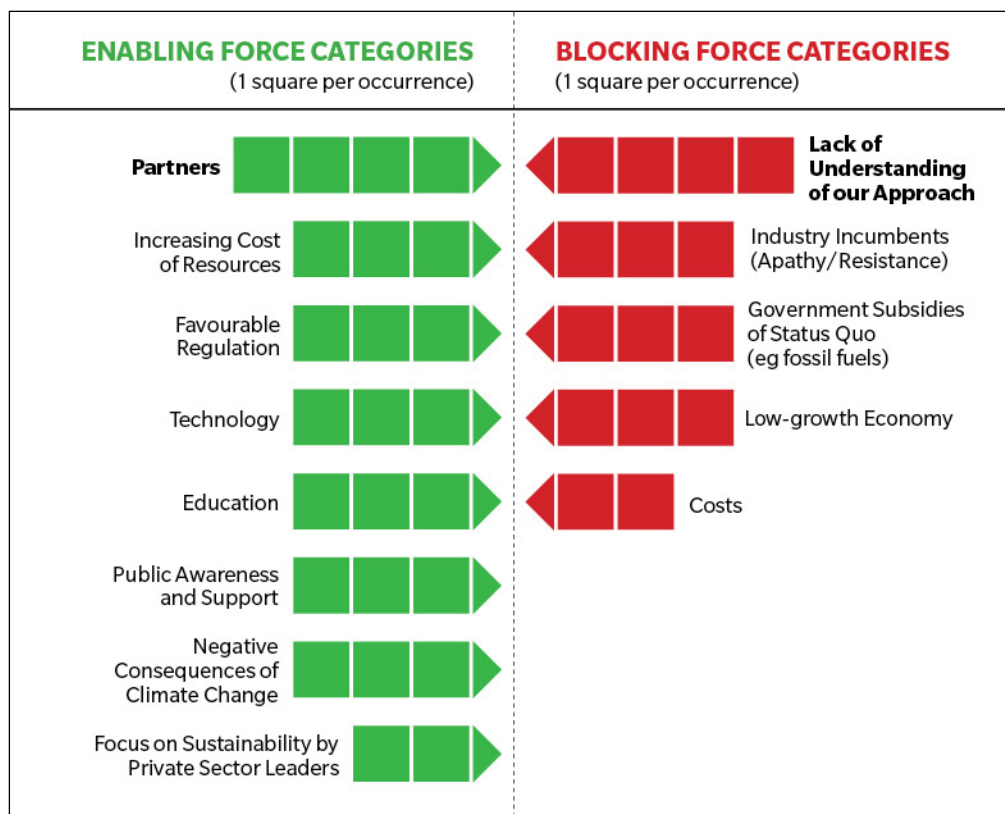
Figure 16: Common Enabling and Blocking Forces – 10-year Timeframe (Response to Prompt 16)

Additionally, in response to Prompt 8, several participants identified *Collaboration & Relationships* as a key theme that has contributed to their mental models of sustainability. In combination with the identification of Partners as a key enabling force, this suggests that collaborating with partners might be a way to scale up impact and achieve larger-scale sustainability goals.

What are the implications for SME strategy?

It is worth remembering that these are leaders of small Ontario companies, not CEOs of multinationals or government ministers, yet they see their role as influencing change at a relatively large scale. This mental model of *Acting as a Catalyst* could provide inspiration for other SME leaders who are attempting to create more sustainable companies.

The value of thinking big

The above findings suggest that perhaps a certain amount of hubris may actually be a key component of mental models that enable more sustainable SMEs. The ability to "think big" and imagine creating change at scales beyond their small company may be part of the reason these leaders have been successful. For some, this may be a natural part of their personality, perhaps more subconscious than deliberate. Could other SME leaders benefit from making this stance a more deliberate part of their thinking and strategy formation? How might this be encouraged?

One strategy concept that might be useful is a BHAG – a Big, Hairy, Audacious Goal. As described by James Collins and Jerry Porras (1996), BHAGs are ambitious, 10-30 year goals that aid long-term, visionary thinking. They are daunting and require a lot of effort – but they are also clearly understandable, compelling, and have a clear "finish line", so that it is obvious when the BHAG has been achieved. Sometimes referred to as setting "stretch goals" (Hamel & Prahalad, 1994; Kerr & Landauer, 2004), this approach would be useful for any company trying to achieve transformative, long-term change. While Collins and Porras provide examples mostly related to large corporations, perhaps this is a

practice that would be valuable for SMEs as well. It might actually be easier to conceptualize and work towards a BHAG in the context of a smaller company, without the challenges of large bureaucratic systems and competing silos. Certainly the SME leaders in this study can envision creating big audacious influence over larger systems, so the BHAG concept could be a good generic strategy tool to help turn sustainability aspirations into concrete, long-term goals.

A model for increasing influence over time

The way various participants described their version of *Acting as a Catalyst* suggests a model that may help other SME leaders formulate their own strategies for increasing their influence over time. As mentioned above, these participants described influence at several scales, starting with their own internal operations, then expanding to include their customers and clients, their particular industries, entire markets, and ultimately, cultures. Figure 17 represents these progressively larger scales in a model called *Ripples of Influence*.
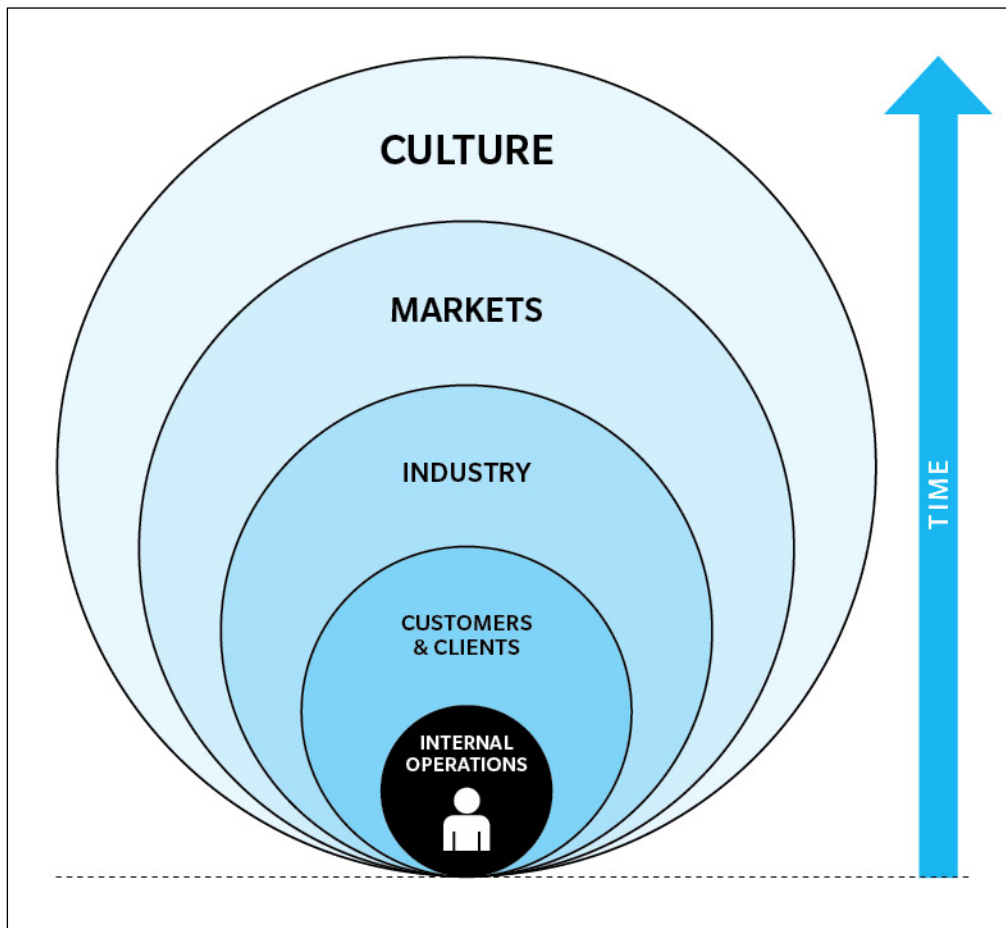
Figure 17: Ripples of Influence Model – a Tool for Envisioning Larger Scale Impacts

This model could be used as a tool for establishing strategies with specific time horizons. If a leader can identify where they currently see their company having a positive influence on sustainability outcomes, they could then set time-based targets for moving out to larger scales of influence. For instance, if a leader felt that they currently have influence over their clients, she could then ask "How might we begin to have influence over our industry as a whole?" This would include considering how long it would take to achieve that level of influence, what

the first step would be, and how quickly the organization could implement that first step.

By visually mapping these pathways outwards through the levels, the *Ripples of Influence* model could help leaders and others in the company to work collaboratively on setting goals and timelines, giving all members of the organization a common picture to work towards. It could even be used to represent several pathways at once, so that an SME could be working towards multiple levels of influence, either in parallel, or in a linear fashion. This model could also be used to map one or several BHAGs, showing what levels of influence will be necessary to move from the current reality to the envisioned future state.

The *Ripples of Influence* model would require testing to determine if it is actually a useful tool in practice. It is just one potential way of helping other SME leaders to harness the mental model of *Catalyzing Larger Impacts*.

What are the implications for the design of strategic tools for SMEs?

If SME leaders are more focused on opportunities than risk-mitigation in their approaches to sustainability, then strategic tools need to incorporate elements that support proactive, creative thinking. This might require very different tools and processes than those appropriate for large corporations, which may be more concerned with managing potential risks, or reacting to problems and challenges as they occur.

Tools for these types of SME leaders also need to encourage and leave room for the kind of big-picture-thinking described above. They need to help leaders of small businesses enact changes that influence much larger systems beyond the scale of their companies.

Insight 2: SME sustainability needs to be seen as a whole, not just a sum of the parts.

What did we learn?

Breaking sustainability into a series of categories may not be the most useful mental model for creating more sustainable businesses. Focusing too much on an analytical approach may ignore the equally important activities of synthesis, creativity, and proactive risk-taking typified by these SME leaders.

These leaders certainly understand the widespread categorization that delineates financial, social, and ecological aspects of sustainability. Some of the participants also include additional categories in their mental models of sustainability, such as "governance" or "cultural" aspects. However, not all of these participants base their strategies or decision-making on such rigid categorizations.

It is worth noting that financial concerns are prominent in these leaders' mental models of sustainability. Most of them consider it a foundational part of their company's sustainability strategy. However, they see their companies as having a larger purpose beyond financial success, so they are willing to sacrifice financial benefit – in some cases – if it conflicts with social or environmental benefits. This dynamics and trade-offs between the financial, social and ecological aspects can be fluid and context-dependent, and deserve as much attention as the categories themselves.

What findings support this insight?

To varying degrees, the results showed that these leaders *can* understand and use a framework that is made up of financial, social and ecological (FSE) aspects. There are many variations of this analytical-style FSE framework in the literature (for a good overview, see Shedroff, 2009), so it is not surprising that leaders working towards sustainability would be aware of this way of thinking.

The FSE framework was mentioned in some of the global-scale and enterprise-scale definitions of sustainability (in response to Prompts 1 and 2, respectively). The three aspects also surfaced in some descriptions of difficult business decisions (in response to Prompts 6 and 7). Finally, some participants identified terms similar to financial, social, and ecological as influences on decision-making about sustainability (Prompt 9). In all five of the above prompts, the questions were open-ended and did not explicitly mention the FSE framework. This suggests that for at least *some* of these leaders, the three categories are familiar to them, and are a part of their mental models of sustainability.

However, the results from this study do not indicate that the FSE framework is universally part of these leaders' mental models of sustainability. As mentioned above, a few of the leaders explicitly used the FSE concept in their definitions of sustainability. But many more did *not* make use of the concept in their definitions. In Prompt 1, only 2 out of 12 participants used the FSE concept explicitly in their definition of global sustainability. Similarly, in Prompt 2, only 4 out of 12 leaders used the FSE concept in their definition of enterprise-level sustainability.

Prompt 13 was designed to probe specifically whether these leaders used the FSE categories when setting strategy goals. With half of the participants saying they *do not* use these categories for goals, it seems that the FSE framework may not be universally employed in strategy making. Participants provided several reasons why they do not use these categories: three explained that their goal-setting simply wasn't that "formal"; two participants said that FSE aspects are inherently intertwined, and can't be separated into categories; and one participant stated that all the company's goals are financial, in service of the larger social and ecological purpose of the company.

It is worth noting that the 4 participants who included the language of FSE in their definitions of sustainability (Prompts 1, 2 and 3) were also the participants most likely to employ an FSE framework in relation to decision-making and goal-setting (Prompts 9 and 13, respectively).

Financial concerns:

Even if the focus on FSE categories is not universal, the results did indicate that financial concerns *are* a key part of these leaders' mental models of sustainability. This is not surprising, given that these are leaders of for-profit businesses that need to capture enough financial value to ensure their survival.

The importance of financial considerations is supported mainly by the responses to Prompt 5, which asked participants to rank how much influence each aspect of the FSE framework has on their decision-making, on a scale from one to ten. As shown in Figure 18, the average score for *financial* was slightly higher than the other two. It should also be noted that only two participants gave an equal score to all three categories.
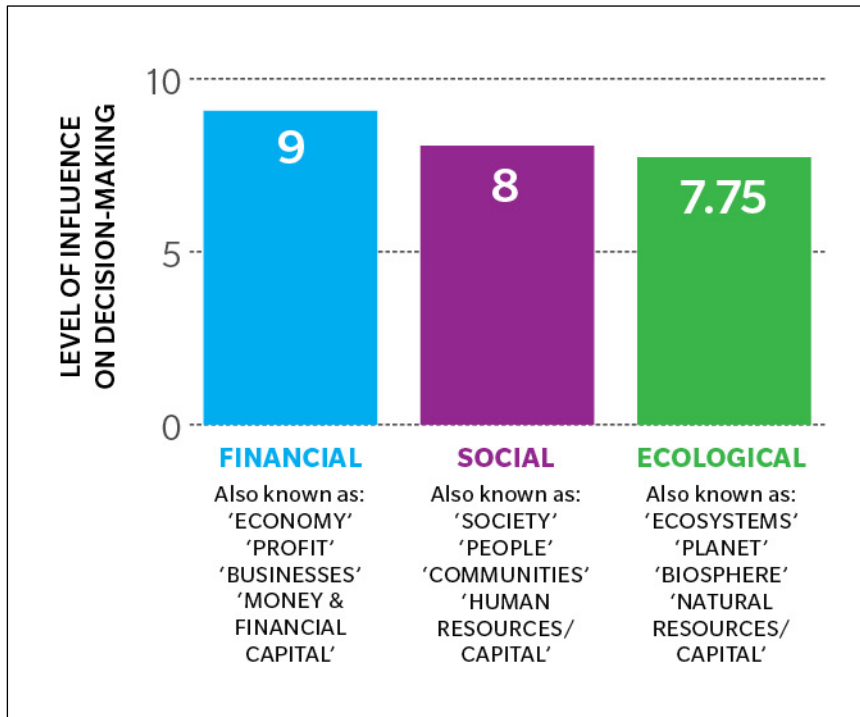
Figure 18: Influence of Financial, Social and Ecological Aspects on Decision-making (Responses to Prompt 5)

Several participants stated that they were assigning a higher number to *financial* merely to emphasize its "foundational" quality. In their minds, having a strong financial foundation enables their business to address social and ecological challenges.

The dominance of financial concerns was also evident in the responses to Prompt 9, which asked participants to indicate the values they had used to make key decisions about sustainability. Several participants mentioned financial terms, such as "profit", "cash flow" or "financial return to investors".

In general these leaders value win-win business models in which financial success is achieved *because of* social and ecological success. However, there are always some difficult decisions in which trade-offs have to be made, and

situations that involve a potential financial sacrifice are particularly helpful in revealing mental models. As mentioned above, Prompts 6 and 7 asked for descriptions of difficult decisions, which revealed a nuanced view of the financial aspect.

On the one hand, there were several examples of participants turning down revenue from external sources as a result of their social or ecological values, which suggest that the financial aspect is not always the most important. On the other hand, many of the difficult decisions involved a more sustainable operational choice, which also came with a higher cost, on an ongoing basis. This reinforces the importance of financial aspects in their decision-making.

While some participants said "Yes" to these more sustainable internal choices (Prompt 6) and some said "No" (Prompt 7), the analysis of the context of these decisions revealed an interesting case in which the decision was influenced by how closely the choice related to the company's core business. The leader of an architectural firm decided to say "Yes" to renting office space in a LEED-certified building, wanting to demonstrate to their clients the benefit of more sustainable office space. The leaders of two other companies (whose business was not architecture) decided against it, citing financial cost as the main reason why. This suggests that the specific sustainable business offering of each company may be a key influence on how the leader makes difficult decisions about sustainability.

The above ideas about the complexity and the nuanced view of financial sacrifice is summarized in Figure 19, visualizing a mental model that could be in use for some of these leaders.
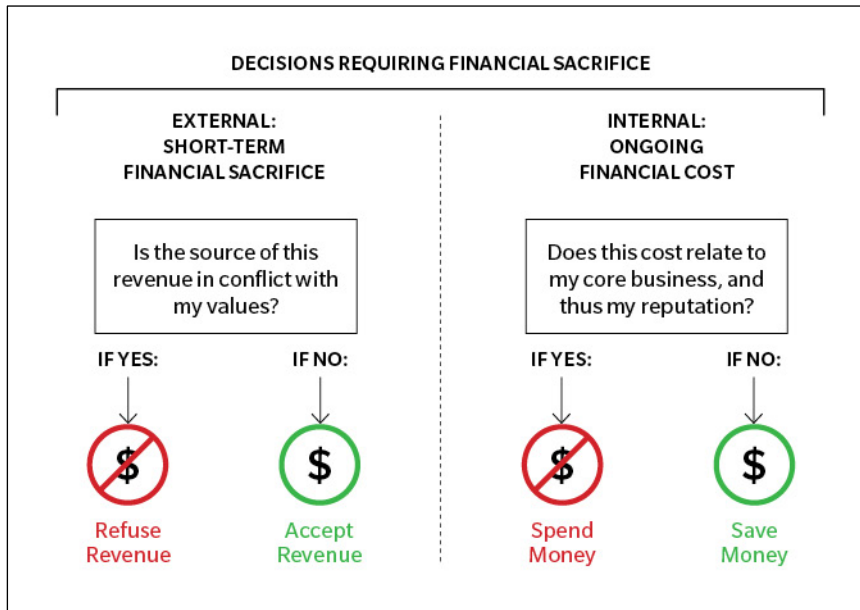
Figure 19: A Possible Mental Model for Decisions Requiring Financial Sacrifice

What are the implications for SME strategy?

It may be necessary to consider the categories of FSE, especially to ensure leaders are not missing key risks or opportunities. However, simply thinking in those categories may not be *sufficient* to actually create more sustainable businesses.

Balancing analysis with synthesis

The concept of FSE is analytical in nature – it takes a whole and divides it into 3 different parts. This may be helpful when focusing on operational sustainability, as it divides a daunting challenge into smaller, more manageable pieces. From the perspective of measurement, it may also be useful because each of the categories can be measured in different units. But to create truly sustainable businesses, analysis is not enough. Synthesis is also required to imagine new ways of improving the whole. Thinking in terms of categories might obscure the chance to see the whole, and to create something that improves the business overall.

A key question that arises from this insight is: *"Could this analytical, compartmentalized mental model of FSE in fact be a barrier to more holistic, sustainable thinking?"* Further research would be needed to explore this question, but the immediate implication is that SME leaders should remember to think holistically, focusing as much on synthesis as analysis.

A need for more systems thinking?

The other limitation of the FSE concept is that the categories alone fail to capture the complex dynamic *between* the different categories. To borrow an old phrase, the whole is more than the sum of the parts. The responses of these SME leaders demonstrate that their mental models are not universally based on the FSE construct, and even when they do use those categories, they do not exist as distinct or independent from one another.

This implies that SME leaders who care about making their businesses more sustainable need to practice systems thinking. This would help them create mental models – and ultimately strategies – that more accurately reflect the complex dynamics between all aspects of sustainability. To bring elements of systems thinking into their mental models, perhaps leaders should be asking questions like:

- How big is the overall system that my business exists within? Where is the "boundary" within which I can actually have influence?
- How might I create a business model that unifies financial, social and ecological aspects, rather than keeps them separate?
- How does my business interact with financial, social and ecological systems? What other categories of systems are relevant to my business?

- What are the "intersection points" where these systems interface with each other?
- What resources or information flowing *between* these systems are most important for the sustainability of my business?
- What are the most important feedback loops that should guide my financial decision-making?
- What do I value highly enough that I would make a financial sacrifice in order to protect?

What are the implications for the design of strategic tools?

Similar to the implication outlined above in regards to balancing analysis and synthesis in SME strategy-making, there is also a need for the designers of tools for SME sustainability to consider the role of synthesis, and holistic thinking. How can these activities be incorporated into the design of strategic tools and methods? The risk of basing a tool solely on analytical categories is that it may not resonate with the mental models of sustainability that SME leaders actually use to make decisions, lessening the chances that it would be adopted and used by the intended audience.

Insight 3: Even for these forward-looking leaders, there is a gap between long-term aspirations and short-term goals.

What did we learn?

These leaders *do* demonstrate long-term thinking, and they *do* aspire to make change at large scales and on long timeframes. Their definitions of sustainability

often include future generations, and even that unreachable time horizon that we call "forever".

But in general, even these leaders do not set formal goals beyond the short time horizons of 1-3 years. Many of them also worry that their company would not be able to continue its sustainability efforts without their presence, even in the short term. So there is a tension between the long-term vision of these leaders, and the short-term goals and actions of their companies.

A focus on short-term goals and actions may not be exclusive to these SME leaders, but the fact that they also have long-term aspirations points to a tension that should be explored further. It suggests that the perception of Time is an important component of these leaders' mental models.

What findings support this insight?

Prompt 1 revealed that many of these leaders value long-term thinking as a key part of sustainability. This prompt asked participants "What does 'sustainability' mean to you, on a global scale?" Analysis of their answers revealed that the theme *Long-term* was the most common across all definitions, mentioned by 7 out of 12 participants, with some even using the term "forever". FIG provides a mind map analysis of the themes from the participants' definitions of global sustainability.
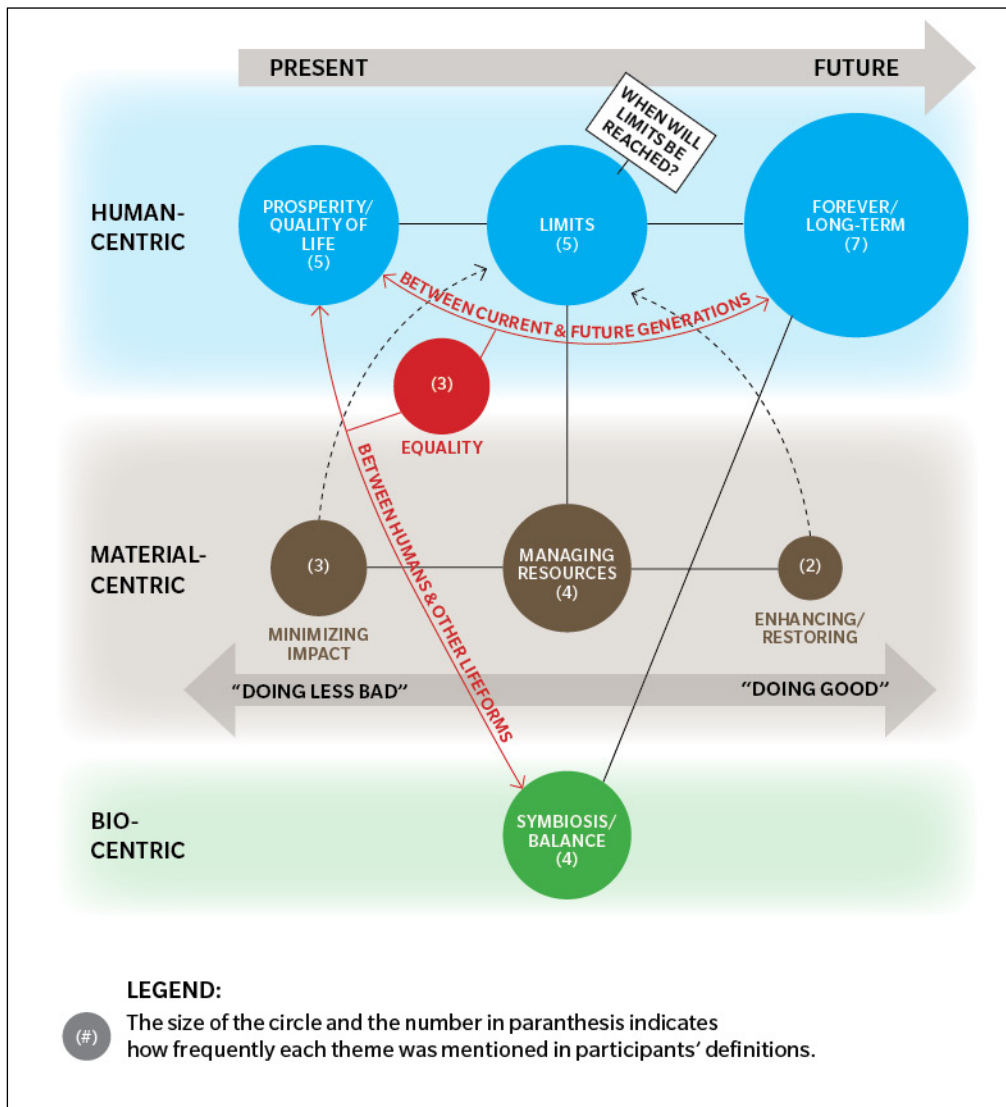
Figure 20: Definitions of global sustainability (Mind map of themes from Prompt 1 responses).

Some examples of responses that highlighted the theme of long-term thinking included:

> "Sustainability is the ability to endure. On a global scale we need to live so that future generations can have the same or better lives than we've had, without compromising the quality of our own." – Participant 9

> "Ensuring that future generations have enough resources in the long term." – Participant 14

"All of 'us' (7 billion members of human race) and all other living beings are able to survive indefinitely, without end." – Participant 16

This focus on the theme of *Long-term* was also evident in the responses to Prompt 2, which asked "What does 'sustainability' mean to you, in the context of your organization?" In their definitions, participants used phrases like: "flourish in good times and in bad"; "will last for generations"; and "longevity and future prosperity".

Various prompts asked participants to think in the future tense, and they had no trouble doing so. For example, Prompt 11 asked participants to categorize activities that they plan to undertake in the next five years, and all but one participant identified these future activities. In addition, Prompt 16 asked participants to represent a goal they hope to achieve within the next 10 years, and all 12 were all able to conceive of such a goal – and itemize the forces that might help or hinder their achievement of that goal.

While these SME leaders *can* think in longer timeframes – and certainly do care about long-term outcomes – they set very few goals for the long-term. This was most apparent in Prompt 14, which asked participants to identify specific timeframes for which they had set sustainability goals. As shown in Figure 21, the most common timeframes were "Less than 1 year" and "1 to 3 years". Only one participant indicated that their company has set sustainability goals beyond a 20-year timeframe. This clearly indicates a bias for short-term goals.
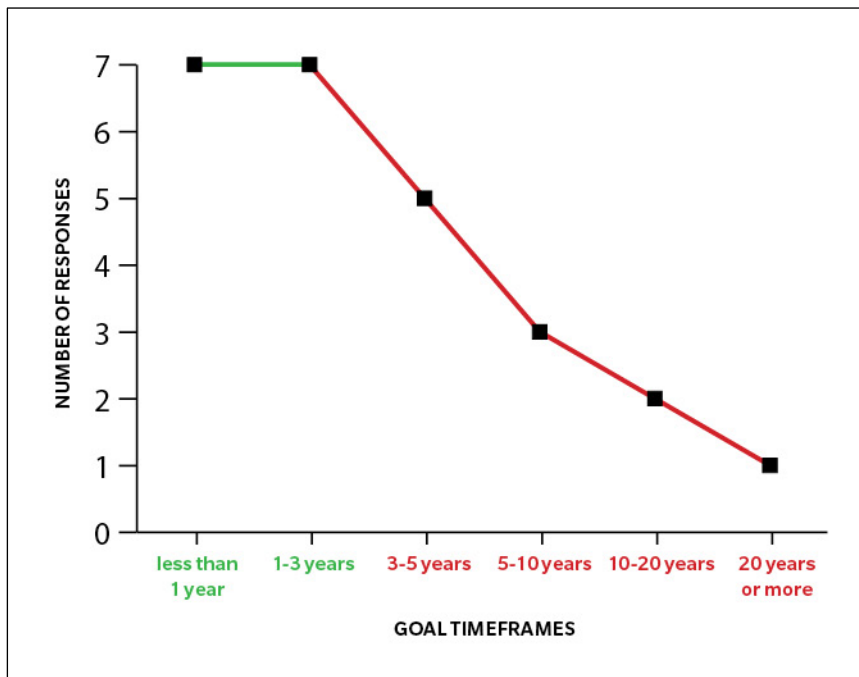
Figure 21: Most Popular Timeframes for Goal Setting (Responses to Prompt 14)

What are the implications for SME strategy?

The findings outlined above suggest that these leaders are able to think in the long-term, and are also fairly comfortable setting goals for the short-term of 1-3 years. The first implication of this insight is that SME leaders may find it challenging to create goals and strategies for the mid-term horizon of 5-10 years. Is there a gap in their mental models that mirrors the gap between short-term and long-term thinking?

It may be easier to think about a more sustainable future on a very long time-horizon because it is so far removed from current actions. On the other hand, the short-term is obviously easier to plan for – there is both the incentive to plan and the ability to feel somewhat confident about goals being set. The mid-term is more challenging: it is less predictable; it may feel less necessary; and it

may be harder to envision how mid-term goals and actions can connect with a desired future.

Since the design probe findings overall suggest that some of these SME leaders practice more formal planning, and some do not, the other implication is that there might be two different strategic approaches to addressing the challenge of the mid-term horizon. These two approaches are explored below.

BHAGs and Backcasting

SMEs do not necessarily need to set a series of formal goals and create complex plans in order to be more sustainable – in fact many lack the resources to do so. But some SME leaders may prefer to set key goals and engage in some level of planning. For this type of leader, BHAGs and "backcasting" might be two useful strategic tools.

As described above under Insight 1, BHAGs are long-term, ambitious goals on 10- to 30-year time horizons (Collins & Porras, 1996). BHAGs are designed to help organizations reach a desired future state that seems inconceivable in the present. One of the key benefits in this context is that BHAGs are clear, concrete, and have an obvious finish line. This could help SME leaders to develop sustainability goals that are transformational and long-term, but still relate to their business and engage others in the journey. However, in spite of these benefits, a BHAG alone may not be sufficient to address the gap between long-term aspirations and short-term goals or actions.

A strategy tool that has been developed to bridge this gap is backcasting. In simple terms, backcasting is a planning method in which the future desired conditions are envisioned, and steps are then defined to attain those conditions,

working back from long-term, to mid-term, to short-term (for a more detailed description, see Holmberg & Robèrt, 2000). The backcasting method has been used by not-for-profit organization The Natural Step to help many businesses and organizations develop sustainability strategies based on a desired future state. Others have written about how the combination of BHAGs (or "stretch goals") and backcasting can be effective in creating more sustainable solutions to complex problems (Manning, Lindenmayer & Fischer, 2006). Perhaps this method could be adapted for SME leaders who do engage in planning, to help them fill in the mid-term goals and strategies that could connect the present to a long-term BHAG.

Emergent Strategy and Guiding Principles

Some SME leaders do not engage in much formal planning and goal setting. They may be more entrepreneurial in their approach, or they may simply not have the resources to devote to planning. There is a spectrum of approaches to strategy, from those based heavily in analysis and planning, to those favouring vision and emergence (Mintzberg, Lampel & Ahlstrand, 1998). If an SME leader is on the "emergent" side of the spectrum, they must still face the challenge of connecting the present to their future aspirational vision of a more sustainable future. If they are not going to use goals and planning, perhaps there is an approach based more on guiding principles? How might SME leaders develop such guiding principles? How might they make these principles part of their mental models, influencing their ongoing decision-making, and helping them to create a desired future in a more emergent fashion? These may be areas for further research.

What are the implications for the design of strategic tools?

Another key implication that arises from this insight is that *Time* should be considered a critical unit or dimension in any strategic tool or method that aims to support more sustainable businesses, in order to bridge the gap between the present and an unpredictable future. This certainly suggests a role for strategic foresight methods, since these methods are designed to "create and sustain a variety of high-quality forward views and to apply the emerging insights in organizationally useful ways" (Hines & Bishop, 2006). Incorporating these methods into the design of strategic tools would certainly assist leaders in thinking on multiple time horizons, rather than focusing too much on the present. Strategic foresight methods could also help to translate a big, aspirational vision of the long-term into clear goals and guidelines for the medium-term of 5-10 years. The challenge may be to optimize existing foresight methods so that they could be put to practical use by SMEs, who may not have the same resources and attention to devote to these activities.

Beyond existing strategic foresight methods, this insight could also inspire the design of new tools or artifacts that represent the abstract nature of time in ways that are more concrete and actionable. If time is considered a crucial dimension, how can it be made explicit and visible? How can it be represented in a way that allows it to be added, subtracted, and manipulated? Exploring these questions as design criteria could lead to innovative new strategy tools.

Insight 4: Experiencing "how the rest of the world lives" may be a key factor in developing more actionable mental models of sustainability.

What did we learn?

When asked to identify key factors that influenced their thinking about sustainability, many of these SME leaders pointed to their past experiences involving travel, volunteering, and development work outside of North America. These first-person experiences of "how the rest of the world lives" may be a key contribution to the development of mental models of sustainability, and the resulting businesses created by these leaders.

This pattern was unexpected. The theme of international travel in relation to sustainability was not something that this research project was exploring, and therefore the leaders were not recruited based on any consideration of this theme.

What findings support this insight?

Since the participants are leaders in the area of sustainable SME businesses, an attempt was made to understand not only how their mental models influence sustainability strategy, but also what might have led to the development of those mental models. Prompt 8 asked participants "Based on your own past experiences, what do you consider to be the most crucial 'puzzle pieces' that have influenced your mindset towards sustainability?" Figure 22 shows the results of analyzing the responses and clustering them into patterns and themes.

The most unexpected theme was *Experiencing "how the rest of the world lives"*. This theme included puzzle pieces that described volunteering and

development work in countries like Africa, India, and Haiti, as well as first-hand experience of pollution, resource depletion, and corruption in other countries. It also included local volunteering or "giving back" to local communities. This theme was the most common among all participants, containing 10 puzzle pieces from 7 different participants. It was surprising because the theme of volunteering or travelling 1internationally was not an explicit part of the prompt itself, or the research project generally. Despite the diversity of the participants in terms of age, gender, profession and industry, this was the most common of all the puzzle pieces identified.

Another notable finding was the predominance of human-centric influences. Three of the themes from Prompt 8 can be further clustered into one overarching theme called *Other People Matter*. As shown in Figure 22, this grouping represents a much bigger influence than other important themes such as *Nature* or even *Economics*.

Other People Matter

Experiencing 'how the rest of the world lives' 7 participants	Family 5 participants	Collaboration & Relationships 4 participants	Economics 7 participants	Ideas that inspire 6 participants
Personal Experiences in International Development	My Children	Working relationships with ENGO's	Profit	Design for Environment
Seeing how most of the world lives (development work in Africa & Central America)	Birth of my kids	B Corps: encouraging to know there are other companies with the same	Economics	SROI (Social Return on Investment)
Seeing extreme poverty in 3rd-World counties	Birth of niece and nephew	Networking	Economics	Lifecylce Cost
Seeing corruption in 3rd-World countries	Mom and Dad (both frugal and mindful of being a steward)	Credible Partners	Financial Considerations	Aboriginal Philosophies
Seeing extreme resource depletion in places like Haiti	Being encouraged by parents to be great and have influence	Engaged in the Green Community	Capital Cost	Book: Last Child in the Woods, by Richard Louv
Exposure to pollution in Asia/India	Experiences with grandmother in nature as a little kid	Relationships (Win-win)	Markets	Book: Investing in a Sustainable World, by Matthew Kiernan
Travel to Africa/India		Stakeholder Consciousness	Existing Capital Stock	
Internship in Romania for Micro Finance/ Social Impact Assessment			Business Models	
Giving back to the community			Idea of business as a tool for development (poverty aleviation)	
Volunteering with local disadvantaged folks	More local, but still related			

Nature 5 participants

- Earth
- Water
- Life
- Climate Change
- Growing up surrounded by nature
- Organizing and surviving month-long canoe trips as a teenager

Figure 22: Factors that Influenced Sustainable Mindsets (Responses to Prompt 8)

What are the implications for SME strategy?

The most important implication of this finding is that *first-hand experiences* can have a powerful influence on mental models. It acts as a reminder that mental models are not formed (or changed) only through rational, intellectual activities. Visceral, first-hand experiences can shape perception, mental models, and ultimately future actions and decisions. This implication is especially relevant in the context of sustainable businesses, which are often more values-driven – it hints at how those values might be formed in the first place.

The importance of first-hand experience has implications both for strategy making by current leaders, and for the development of future leaders.

Improving strategy formation by including first-hand experiences

The other key implication is that strategy formation might be improved by encouraging current leaders to leave their familiar surroundings and experience first-hand the way other people actually live and work. This is not a new idea, but could have profound impact on SME leaders in particular, who may not have as much opportunity to travel as leaders of large corporations.

It should also be emphasized that the type of first-hand experiences described by the sustainable SME leaders in this study are of a particular type. A typical corporate leader's experience might be highly controlled, tightly scheduled, and give them only a superficial view of the situation. Instead, the first-hand experiences described by these SME leaders were often intrinsically motivated, involved volunteerism over several weeks or months, and exposed them to more authentic experiences.

In general what this insight reinforces is that there are real benefits for a leader to leave their familiar surroundings and experience new things, even if those experiences are challenging or disturbing. Similar to conducting design research or ethnography, the experience of observing and interacting with people in their own surroundings could provide valuable insights, helping leaders see old challenges in new ways. These experiences might also provide the motivation necessary for the leader of a small company to make change at a large scale.

What are the implications for developing future leaders?

The participants in this study are all living in North America and used to a relatively high standard of living, relatively clean water, air and soil, and relatively equitable social relations. Being exposed to life in countries where this is not the case would provide a stark contrast – and perhaps illustrate that our current way of life is not sustainable. Those earlier experiences informed their mental models, and may have contributed to the founding of more sustainable businesses.

Based on this rationale, these powerful, first-hand experiences could be a prerequisite for developing the future sustainability leaders of the next generation. The implication is that we should be looking for opportunities to expose young people to the way "the rest of the world" lives early on in their lives and careers. These experiences would also show them first-hand the impact of North American lifestyles, products and services on people and ecosystems around the world – demonstrating the interconnections between all of us. This might help develop their sense of empathy, their motivation, and the mental models necessary to tackle the challenge of making our way of life more sustainable on a

global scale. How might we maximize these opportunities in the context of education, on-the-job-training, or volunteerism?

There could also be implications for business accelerators and incubators, in terms of how these programs nurture emerging business leaders and entrepreneurs. Perhaps requiring some kind of hands-on experience could help instill more sustainable mental models early in the careers of the business people who participate in these programs and services.

Given the negative impact of air travel from a carbon-emissions perspective, it also raises the question of whether there could be a substitute for actually having these experiences in person. Could experiences mediated by technology still provide the same powerful, lasting impact?

Insight 5: The dissemination of mental models is a crucial challenge to the sustainability of these SME companies.

What did we learn?

These SME leaders have unique mental models that underpin their values and the way they run their businesses. But for those businesses to continue to exist and thrive in the long term, the leaders must ultimately share their mental model with others. Many of the participants are concerned about the negative consequences of not sharing their mental models, at various scales. The challenge of dissemination is therefore crucial for the future sustainability of these SMEs.

More than half of the leaders in this study were confident that even if they left their companies tomorrow, their businesses would continue to practice the

same sustainable thinking, because their mental models are already shared by their employees. The rest of the participants were concerned that the sustainability efforts of their companies would *not* continue in their absence, because those participants felt they were currently the primary driver of those efforts. On a larger timescale, some of the participants also expressed the concern that a "lack of understanding of our approach" might undermine the ability of the business to achieve crucial goals. This suggests a need for leaders to share their mental models with colleagues and employees, and to disseminate them beyond the boundaries of their companies.

The results also revealed a bias in decision-making that suggests in part why this challenge arises. *Personal* values were described as more influential than *shared values or knowledge*. While goal-setting was described by some as collaborative, overall the results reflect unilateral thinking and decision-making by these leaders, which might make it harder to share their mental models with others.

What findings support this insight?

These leaders have their own unique mental models which have enabled them to conceptualize and bring to life a business that is more sustainable than most. There is no single mental model common to all of them. But if a particular business is to continue to have a similar positive impact after the leader departs, then the values, assumptions, and mental models that exist in the mind of the leader must somehow be shared beyond that individual.

Prompt 15 sought to explore this challenge explicitly, asking participants "Imagine that you leave your organization tomorrow. What do you think would

happen to the sustainability efforts in your organization, over the next 5 years?"

Though the question was open-ended, analysis of the responses led to two types

of imagined scenarios: those that believed the sustainability efforts would

essentially continue in their absence (7 out of 12), and those that believed they

would not (5 out of 12).

More interesting than this dichotomy were the reasons participants gave

for each imagined scenario. Those leaders who believed the company's efforts

would continue without them most commonly cited some variation of *Shared*

Culture as the reason why. This included values shared between founding

partners, or between leaders and staff. As Participant 3 said when describing the

company's staff: "...sustainability is part of their DNA and is the reason they work

here – our business is in line with their values." Though some participants also

pointed to the fact that sustainability was part of their core business as the reason

the sustainability efforts would continue in their absence, for most it was due to a

collective way of thinking or "belief system", which the leaders and staff of the

company shared.

The five participants who *did not* believe that the sustainability efforts

would continue felt this was because their personal values were the main driver of

those efforts. They did not feel those values were sufficiently integrated into the

rest of the company to persist without their involvement as a leader—though a

few felt this situation could change over the next few years by implementing

"systems" or "infrastructure".

These SME leaders also expressed concerns about how to share their way

of thinking on a larger scale. In Prompt 16, they were asked to identify a goal that

they saw as crucial to the success of their company over the next 10 years.

Participants were also asked to imagine what "blocking forces" (Gordon, 2009) might prevent them from achieving this goal. Analysis of the blocking forces revealed that the most common theme was *Lack of Understanding of Our Approach* (see Figure 16 above). This theme was evident in blocking forces related to a range of goal categories, including those focused on:

- *The company's own success*;

- *The success of clients and external stakeholders*;

- and *Changing public opinion.*

This demonstrates that *Lack of Understanding of Our Approach* may be a common concern that could impact the future plans of many SMEs. It also highlights the difficulty in changing mental models at a larger scale, beyond the boundaries of the company itself. In order to understand a new and innovative "approach" to business, people may have to revise their mental models – changing their assumptions about what is relevant, their perceptions, and their beliefs about what is of value.

The results of this research may also offer a possible explanation for why these particular leaders may find it challenging to share their mental models with others. In spite of the presence of some collaboration, ultimately they seem to prioritize their own perspectives over the input of others, especially when making decisions.

There was some indication that these leaders value collaboration, most notably in their responses to Prompt 12, part of which asked who was involved in goal setting. Most participants described some kind of *Collaborative Goal-Setting*, often involving partners/founders or senior management. However,

these general descriptions of goal-setting were contradicted by a more pointed prompt that forced participants to choose the most important influence on their decision-making.

In Prompt 10, participants were asked to rank order four types of influence on their sustainability decision-making, from most to least influential. Figure 23 shows visually the weighted results of all participants' rankings. The upper-left quadrant in the most influential of all: *Personal Beliefs & Values.*

Figure 23: The Influence of Personal Beliefs & Values on Decision Making (weighted responses to Prompt 10)

This might reflect a preference for decisive and unilateral action, and a relative lack of interest in more consultative decision-making. Could this bias make it challenging for some leaders to spend time and energy sharing their mental models with colleagues, staff, and those outside the organization?

The dominance of the top two quadrants also suggests that the mental models of these SME leaders are heavily influence by values, which may be harder to transmit to others, as compared to mental models based primarily on knowledge or expertise.

What are the implications for SME strategy?

The most important implication of this insight is that SME leaders need to find ways of sharing their mental models if they want their businesses to be sustainable in the long-term. This includes the need to share mental models within the company, and also on a larger scale: with external stakeholders and the general public.

The need to create "Shared Culture" within an SME

The first step for an SME leader is to actually take stock of the degree to which their personal mental models are shared by others in the company. If a leader feels there is a lack of alignment, the next step would be to choose a strategy to create more alignment. There are several potential approaches.

It may be possible to create policies, systems, or infrastructure which translate the leader's own values into the formal decision-making of the company. This approach has its own challenges, since values and culture are generally difficult to change using rules and policies.

A leader might attempt to build a shared culture through their hiring process, in essence selecting only those employees who already share their values and mental models, at least to some degree.

Finally, a leader might attempt to share their mental model with staff on the job, in an ongoing effort. This would require the leader to explicitly surface their mental model: to take something that is invisible and internal, and allow staff to see, understand it, and share it with others.

The powerful first-hand experiences outlined above might also be a way to share Mental Models. This approach sounds the most difficult, but could inspire the design of strategic tools to help SMEs undertake this "surfacing" of mental models.

The battle for Hearts & Minds

The theme *Lack of Understanding of Our Approach* highlights the challenge of sharing mental models on a larger scale. If several of these SME leaders identified it as a crucial challenge to their long-term success, it could also represent a common barrier for other sustainable businesses in their attempts to survive and scale up.

Assuming an SME has an innovative approach or business model, it likely will not be widespread or well understood by customers, potential partners, or other external stakeholders. Given that most SMEs do not have the resources to share their approach widely via mass media, national advertising campaigns, public relations, or lobbying, they must find other innovative ways to spread their mental models.

While this research cannot provide the solution to this challenge, the challenge itself implies that SME leaders should consider the following questions:

- As a leader, do I have a clear understanding of my business' approach?
- Can I describe – in a single sentence – what makes our approach unique?
- Can I describe my business' value proposition in a single sentence?
- What is preventing others from understanding our approach? What can the company do to change this situation? What external partners could help us change this situation?
- How can we make our approach highly visible, and easy to replicate?
- What communication pieces and what communication channels could we realistically use to educate others about our unique approach?

What are the implications for Design of Strategic Tools?

Part of the value of conducting design research is to better understand those being designed for, so that the resulting design artifact has a better chance of being used successfully. The theme of *Values* being more influential than *Knowledge* in decision-making is a key learning for any future design of sustainability tools for similar SME leaders. If a tool prioritizes knowledge, facts, and expertise and does not include values and beliefs in a meaningful way, it will likely fail to resonate with this audience.

Comparison of Primary and Secondary Research Results

A few of the insights from the secondary research phase were related to mindsets or mental models. Several of these were reinforced by the results and insights from the primary research.

First, some of the mindset-related factors identified by Bos-Brouwers as key to sustainable innovation in SMEs were echoed by the responses to the design probe in this research study. Bos-Brouwers identified a focus on "value creation" as a key factor in SME leaders' sustainable mindsets (2010, p. 39), and the leaders from this study indicated that they see sustainability as part of the core purpose of their companies (in response to Prompt 4). This reinforces a view of sustainability that goes beyond basic compliance with regulations or eco-efficiency of internal operations, and instead looks for ways to embed sustainability in the core value offerings and purpose of the organization. Bos-Brouwers also made reference to the "long-term perspective" of the leaders in her research, and this perspective was also evident in the definitions of sustainability provided by the participants in this research project. In addition, her identification of "cooperative mindsets" as another key factor was similar to the insight from this research that participants see collaboration and partnerships as a way to achieve their sustainability goals and scale up their impact (as mentioned above under Insight 1: Catalyzing Larger Impacts).

These similarities to Bos-Brouwers' research are significant because although she was focusing on Dutch SME manufacturing companies, there were overlaps with the mental models of the Ontario SMEs leaders in this research project. This suggests that certain mental models and attitudes that lead to more sustainable businesses may be similar across geographic boundaries, at least if the contexts are somewhat comparable.

Another relevant secondary research insight that relates to the findings of this research project was McEwen & Schmidt's exploration of how leaders' mindsets and vertical stage of development affect their ability to undertake more

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sustainable activity. McEwen & Schmidt proposed that, "later-stage leaders see the world more broadly, in a more complex and integrated fashion, and from a more holistic viewpoint" (2007, p. 34) and suggested that this might be a prerequisite for sustainable activity at the higher levels of the Gearing Up framework. The results of the design probe provide two interesting reinforcements of these ideas. First, the SME leaders in this project were operating at and aspiring to the higher levels of the Gearing Up framework, similar to the MNE leaders in McEwen & Schmidt's sample group. Second, Insight 2 echoes the focus on broad, integrated and holistic ways of seeing the world referenced by McEwen & Schmidt above. This emphasizes the need for leaders to synthesize and see the big picture, in order to perceive opportunities for sustainable action on larger scales.

The alignment between these two research projects is significant because despite the difference in research participants (leaders of SMEs versus leaders of MNEs), it shows that there are some similarities in sustainable mindsets regardless of the size of the organization. This suggests there may be insights from research into SME mental models that could potentially be useful in an MNE context, and vice versa, especially with regards to a more holistic and integrated view of the world.

The third secondary research source relevant to the primary research findings—and which also emphasized the importance of global, holistic thinking—was the framework of six dimensions of mental models for sustainability (Adams et al, 2009). As previously described, this is a general model of thinking that identifies six key aspects of mental models, with corresponding categories of thinking on either ends of these spectrums. The five

insights outlined above have some alignment with the six dimensions, reinforcing the relevance of certain kinds of thinking to sustainability, but also providing more specific implications within these general dimensions.
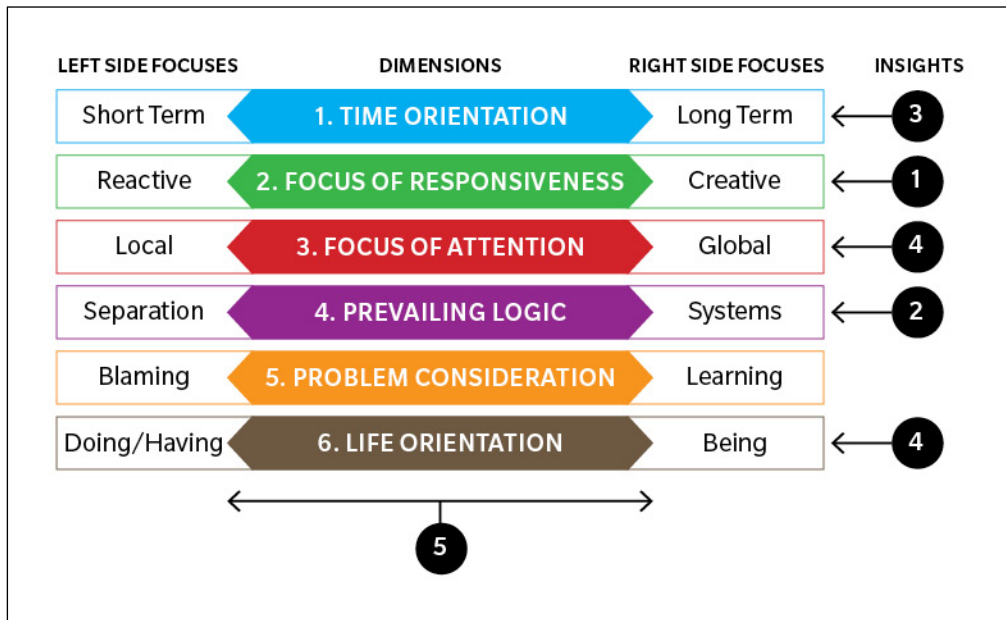
Figure 24: Comparison of Design Probe Insights to Adams' Six Dimensions of Sustainable Thinking

As shown in Figure 24, four of the insights align with particular dimensions. The tension between long-term aspirations and short-term goals (Insight 3) speaks to the *Time Orientation* dimension. The focus on catalyzing larger impacts beyond the scale of an SME (Insight 1) is an example of *Creative* rather than *Reactive* responsiveness. The importance of first-hand experiences in other parts of the world (Insight 4) relates to fostering a *Global* focus of attention, while the larger theme of valuing people from Insight 4 also speaks to a focus on *Being* rather than *Having*.

Adams also described the challenge of individuals moving from the left side of the spectrums to the right side, as well as increasing their flexibility within

each spectrum. Insight 5 echoes this challenge, but it also goes further than Adams' framing. It illuminates the need for individuals to not just change their own thinking, but also the need to share their mental models with others—within their organizations and with external stakeholders on a larger scale.

The insights from this research are more focused and actionable for SMEs—building on this existing framework from Adams, but also providing more specific and concrete implications for SME strategy-making and the design of sustainability tools for SMEs. Adams' dimension of Problem Consideration did not really emerge in this research project, and could be an area for further research or exploration within the context of sustainable decision-making in SMEs.

Conclusion

Summary of Research Findings

This research project sought to explore the following research question by focusing on leaders of Ontario SMEs who were already leading in the transition towards sustainability: What is the relationship between their mental models and their core strategic decisions about sustainability?

The goal was to generate insights about SME decision-making, and user insights for the design of strategic tools to help these SME leaders improve the sustainability of their businesses.

In order to collect a wide range of rich, qualitative data from the participants' own perspective, a design probe was created which prompted SME leaders to reflect on and capture their thoughts, values, and experiences in a generative way—using words, images, and conceptual diagrams.

The results of this research revealed 5 key insights about the participants' mental models of sustainability:

1. There is a focus on catalyzing larger impacts.
2. They think holistically, not just analytically.
3. They lack goals on a 5-10 year timeframe.
4. Their mental models are often influenced by first-hand experiences of "how the rest of the world lives".
5. Sharing mental models is a critical challenge.

These insights reinforced the importance of thinking that is creative, global, long-term, systems-oriented, and collaborative—thinking that was also highlighted in various secondary research sources, as noted above.

Overall synthesis of findings

Taken as a whole, these insights suggest one important overarching theme: *seeing connections*. What unites all of the insights is the concept of connections, and what makes these SME leaders successful in their journey towards more sustainable businesses is their ability to see and act on these connections.

Catalyzing larger impacts is really about seeing the connections between their own small company and the larger systems it is embedded within, and taking the initiative to use those connections to create positive change. Thinking holistically necessarily means paying attention to the connections and relationships between things, rather than just the differences. Having long-term aspirations and setting goals at various timescales requires a leader to grasp the connections between present actions and future outcomes, both positive and negative, and envision how to connect their actions moving forward in time. The insights about first-hand experiences influencing mental models also speaks to the connections between our way of life in North America, and the ways in which people live in other parts of the world. The empathy needed to truly appreciate those connections can also fuel action and change-making. Finally, the challenge of sharing mental models is really the challenge of recognizing the connection between one's ways of thinking and one's actions. Ultimately, sharing mental models also requires people to connect in a meaningful way, so that they can understand each other's way of thinking.

Tools that enable leaders to see connections in these various ways will support mental models that link sustainability to core decision making.

Potential Application of Findings

There are also a few ways in which these research findings could be put to immediate, practical use by SME leaders interested in sustainability.

The Ripples of Influence framework (shown in Figure 17 above) could be used by an SME leader (or team) to think more purposefully about the impact they could catalyze at various scales of influence. Several methods would need to be tested to determine how this framework could be put to use in a practical, everyday setting, but it could be as simple as using the visual framework as a way to initiate internal conversations and planning that explicitly focuses on influencing larger systems.

It also seems evident from Insights 1 and 2 that most SME leaders could benefit from learning about systems thinking, and attempting to apply it in their strategy making. There are several good books that provide an introduction to systems thinking, including Senge's *The Fifth Discipline* (2006) mentioned above, as well as *Thinking in Systems* by Donella Meadows (2008).

Most SME leaders would likely benefit from setting some concrete sustainability goals on a 5-10 year timeframe, perhaps using the criteria of a Big Hairy Audacious Goal (BHAG), since that timeframe seems to be lacking in their current approach to sustainability.

In general, SME leaders might want to look for opportunities to share their mental models of sustainability explicitly with their staff, helping to ensure that the sustainable values that guide the business are shared more widely and therefore become more effective in the long term. All members of SMEs could look for opportunities to bring more first-hand experiences into their strategy

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making, and get away from their familiar surroundings in order to find inspiration and motivation for complex change-making.

Applications of findings to the design of sustainability tools for SMEs

For those involved in the design of strategic tools for SME sustainability—including the SSBMG research group—the findings and insights from this research could be translated into potential design problem statements. At a general level, one might ask, "How might we enable SMEs to *see* and *act upon* the connections that would allow their business to become more sustainable?" This problem statement is sufficiently broad to encompass the design of both methods and tools.

Focusing more specifically on the insights from this research project, one might ask. "How might we create tools that help SME leaders to think more creatively, more globally, more long-term, and more systemically?" Finally, a problem statement focused on the 5th insight would ask, "How might we create a tool that makes it easier for SME leaders to share their mental models, both within their companies and externally?"

Moving beyond these general problem statements, several of the insights could be translated into design criteria for SME tools and methods, such as:

- Support proactive, creative thinking and opportunity finding, not just risk-mitigation;
- Reveal the connections between a particular company and the larger systems they could influence;
- Show the whole and the connections between different aspects of sustainability, rather than focusing too much on analytical categories;

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- Explicitly include time as a unit or dimension to be manipulated;
- Reinforce the connections between the short-term, mid-term, and long-term goals and activities;
- Include values and beliefs as part of core decision-making, and avoid relying exclusively on facts, quantities, or knowledge.

While these may not be the only criteria worth considering, the results of this research suggest that ignoring these insights could decrease the likelihood of SME leaders actually using a given tool, especially those who are already making progress towards sustainability in their businesses.

Exploring how other tools and methods have already achieved some of the above design criteria would be a useful benchmarking exercise and potential source of design inspiration for the efforts of the SSBMG and other similar research groups or strategists.

A Note on Limitations

This research was exploratory in nature and the goal was to generate insights into the sustainability-related decision-making of SME leaders. The insights from this research are not intended to be definitive, nor to prove or disprove a specific hypothesis. Because of the small sample size of the participants, the data and insights should not be seen as representative of all SME leaders, or even of a particular sub-set or demographic. Rather, this research is meant to provide rich, qualitative data and illuminate the decision-making processes of SME leaders. Like most design research, the intent is to examine the actual lived experience of a particular "user" as a source of insights that can be applied to the design of artifacts for that type of user—in this case SME leaders.

Some Reflections on Methods

Overall, the design probe method yielded a wealth of rich, qualitative data. At times it felt that there was perhaps too much data to analyze within the timeframes and resources available for this project. Editing down the prompts to the 10 most relevant would have been a better approach, though it might decrease the value of the data collected. The other solution would be to replicate this research with more time and resources for analysis, in order to take full advantage of the amount of data collected.

Some of the earlier iterations of the design probe included more tactile components, and a greater variety of tools provided to respond to the prompts (for example, stickers, sticky notes, and actual puzzle pieces). These were more in keeping with typical design probes, and would have required—and perhaps encouraged—more creative responses from participants. A decision was made early on to simplify many of the prompts, and ultimately make them all work on a sheet of paper where the only tool required was a pen or pencil. This was done under the assumption that it would be less intimidating for potential participants, and easier to ship back and forth, without worrying about pieces getting damaged, mixed up, or otherwise compromising the data. The net result of this simplification of the prompts was a design probe that perhaps was not as creative or generative as it could have been. It would be interesting to use the same method again but without these modifications. This might require using the design probe in workshop setting, or using a more sophisticated kit to ensure that the work of the participants was preserved through the return shipping.

As described in Appendix A, some of the design probes were completed via interviews. These were very useful, and it would be worth considering combining the design probe method with a semi-structured interview method in a more comprehensive way. Perhaps interviews could be used first to explore and define some potential themes, which could then be expanded upon and explored in more detail through a design probe.

Areas for Further Research

There are several ways in which this research project could be expanded or replicated in order to add to the findings, patterns and insights found with this sample. The study could be replicated with leading SMEs from other geographic areas, for example: in another provincial jurisdiction such as British Columbia; nationally across Canada; or in another national context like the United States. One benefit of replicating the research with more participants would be the ability to determine what results could be generalized across different contexts.

The study could also be adapted to explore the mental models of SME leaders that are not yet focused on sustainability, but have an interest in making their businesses more sustainable. By understanding the mental models of these "mainstream" SME leaders, it might be possible to compare them to the mindsets of the leaders in this study, and explore tools and methods to help share mental models between the two groups and ultimately bring the mainstream further along in their journey towards sustainability.

There were also insights that arose from this project which could be explored more deeply through further research. The most significant insight concerned the challenge of sharing mental models, and how crucial this sharing

could be for the sustainability of a business in the short- and long-term. More than any other insight, this challenge highlights the need for new and innovative methods of recognizing, surfacing, and disseminating mental models from one individual to a larger group. While a body of research does exist regarding "shared mental models", there may be a lack of applied research on sharing of mental models of sustainability within a SME context specifically.

More participatory research and testing would be required to discover the best ways of accomplishing this sharing, but certain techniques and approaches can be considered prime candidates for further exploration: visual thinking, dialogue, systems thinking and strategic foresight. This topic of sharing mental models in an SME context is an important parallel area of research, especially given the goal of learning from SME leaders in sustainability and applying their mental models to more "mainstream" SME leaders.

Within this topic of sharing mental models, several sub-questions arise related to SMEs. What does "shared culture" entail in an SME context as opposed to a large corporate context? Can formal systems or policies be used by SME leaders to enable shared culture, or are there other practices that are more effective?

It would also be a useful exercise to explore the assumption made by the leaders in this study that shared culture would allow the business to continue its sustainability efforts in their absence. Looking at the question from a more quantitative perspective might involve collecting data on SMEs that have experienced the departure of a founder, and noting what really happened to their sustainability efforts afterwards. This type of study would have to be conducted over several years, or have access to historical data.

The other area that could yield valuable further research would be the question of how to include *Time* more explicitly in SME strategy-making, including the exploration of how strategic foresight could be adapted for SME leaders and businesses. This might involve trying to understand specifically how SME leaders think about time, how different timeframes effect their business, and what other time-related tools could be adapted from other contexts to benefit the sustainability efforts of SME leaders.

The tension between short-term goals and long-term aspirations implies that there might be opportunities for SMEs to benefit from various strategic foresight methods, but this would require more applied and participatory research to determine whether it is really a viable option for SMEs in practice.

In spite of the potential benefits of practicing strategic foresight, there are real barriers for small companies in terms of having the time and resources to undertake foresight activities. Even many large corporations find it difficult to devote resources to long-range planning on a regular basis.

So the question arises of how strategic foresight methods could be adapted to an SME context, in a way that would allow for their practical use. Are there opportunities to design foresight services that are optimized for individual SMEs? Are their ways to adapt foresight methods to create services for collectives or networks of SMEs with similar interests? These foresight services could have substantial positive impact on the ability of SMEs to make more sustainable decisions, and to create more sustainable futures.

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Appendix A: The Design Probe

Adapting the design probe method

The design probe created for this research project was adapted for the particular

audience (busy SME leaders), and some decisions were made to simplify some of

the prompts to ensure they could be completed quickly and easily. There were

less tactile and physical elements than in some design probes, as there was

concern over the completion rates of these elements, and what effect shipping the

completed packages by mail might have. There was also less of a focus on

documenting users' thoughts and emotions in real-time through journals or

camera diaries, which is often a part of the design probe method. Finally, a

decision was made to refer to the research instrument as a "survey" in all

correspondence and interaction with the participants. It was felt that this would

make it feel more familiar to them, and make it more likely that a busy SME

leader would agree to participate in the research.

Development of the design probe

The following iterative process was used to develop the design probe for this

research study:

- Initial ideation and generation of potential prompts
- Review of first iteration with advisors, and further iterations of prompts
- Peer review of second iteration from other students

- Decision made with advisors to simplify the probe and limit the amount of drawings and tactile elements, for practical considerations related to shipping probes through the mail
- Third iteration used as a pilot with an actual SME leader
- Feedback from pilot incorporated, and final version created

Extra care and attention were given to the graphic design and production of the design probe to ensure a reasonably high degree of quality. This was intended to make participants feel that their time and opinions were respected and valued, and to encourage them – even subconsciously – to respond to the prompts with an equal level of care and attention. The written instructions and the typography were also crafted to ensure clarity, legibility and ease of use.

Layout and production specs of the design probe package

Each design probe package consisted of a folder, 16 individual prompts (each on their own sheet of paper), and a postage-paid return envelope.

The folder was printed in full colour on an 11" x 17" sheet of FSC-certified cardstock. It was folded in half, creating a 8.5" x 11" folder which participants could use to store the individual prompt sheets while they were in the process of completing the design probe. The folder included instructions on the front, and space for general feedback and comments on the back (as shown below).

Each individual prompt was designed as a single 8.5" x 11" sheet, printed in black and white on FSC-certified paper. Each prompt was treated as a separate sheet to help participants think of each one as a standalone "activity", and also to make it easy to sort and cluster the completed prompt sheets during the analysis

phase. In order to allow a prompt sheet to be associated with the correct participant during analysis, all of the prompt sheets for a particular participant were pre-labeled with a small number in the upper right corner (shown as "00" in the reproductions below).

As shown on the following pages, the prompts contained instructions, and various ways of collecting data: by encouraging participants to write textual descriptions; draw pictures; fill in forms and diagrams; and respond to various visual and conceptual frameworks. The prompts were numbered (ie "Prompt 1") to make them easier to refer to during the analysis phase, but participants were encouraged to complete the prompts in any order.

Recruitment process

Recruitment was carried out in three main ways: direct contact via phone or email; online via a "Friends of B Corps" LinkedIn group; and through participants who introduced the researcher to other potential participants from their own professional networks.

After an initial contact, each potential participant was sent an Information and Consent Form, which fully explained the research, including what would be involved as a participant, and the potential risks and benefits. The potential participants were ensured that their data would be considered confidential and that they could participate anonymously, in order that they might share their experiences and opinions with the confidence that there would be no risk to their businesses. All potential participants had to sign the Information and Consent Form before they were sent the design probe.

Deployment and return of design probe packages

Once a participant had consented to participate, they were delivered a design probe package in person or by mail, which included a pre-paid Xpresspost envelope for return purposes. Most participants had at least two weeks to complete the probe. Upon completion, participants simply had to place their design probe in the pre-paid envelope provided, and drop it in any Canada Post mailbox.

After some initial analysis of the completed Probes, some participants were contacted for a follow-up interview over the phone if any of their responses needed clarification or further exploration.

It should be noted that the original intention was to have all participants fill in the probe as a "pen and pencil" exercise. In practice, one of the probes was completed via an in-person interview, and two of the probes were completed via a telephone interview. This decision was made at the request of the participants, as they felt they would not otherwise be able to find the time to complete the probe. The data from these three interviews was captured by the researcher, using the same paper forms employed by the other participants. The data was comparable to the results from the mailed-in probes in terms of depth and completeness. In some cases the interview format allowed for clarifications and follow-up questions to be addressed immediately, which eliminated the need for separate follow-up questions at a later date.

Reproduction of the design probe package

Please see the following pages for a reproduction of the actual folder and individual prompt sheets sent to participants. The first image shows the front cover of the folder, and the last image in the series shows the back cover of the folder.

Sustainability Mindsets Project

About this research project:

Thank you for taking the time to participate in this research project. The purpose of this research is to better understand the 'mental models' of leaders within Small-to-Medium Enterprises (SMEs) in Ontario, and to explore how these mental models influence core strategic decisions regarding sustainability.

The goal of the project is to generate qualitative, exploratory insights into the nature of these mental models, by gathering opinions and reflections from leaders like you, who are already making efforts in the transition towards sustainability.

The insights from this research will help to accelerate the shift to sustainability on a broader scale, especially in the context of smaller organizations. On a personal level, the process may also trigger some insights which you could apply within your own organization, or towards your own leadership approach.

You will receive an Executive Summary once the project is complete, which will highlight the overall insights and lessons learned from this research.

How to complete this survey:

This survey is a way to gather qualitative data about your own experiences, perspectives, and thinking. In this folder you will find a series of 'prompts' – some ask you to tell stories, others to draw pictures, others to generate and capture ideas. There are no right or wrong answers; the prompts are just starting points for your own thinking. Here's what you need to know to get started:

- There are 16 prompts, organized into three categories: past, present and future. While they are numbered, you may complete them in any order you like. There is also space on the back of this folder for any other comments you'd like to add.

- The entire survey should take about 1-2 hours to complete. You can work on one prompt at a time (as your schedule allows), or do them all at once. You may want to set aside some uninterrupted time, as the prompts do require some reflection.

- Once you have completed the survey, please place everything into the postage-paid return envelope provided, and drop it in any Canada Post mailbox.

- ***Please mail the return package no later than Tuesday, September 11, 2012.***

- If you have questions about any of the prompts, please don't hesitate to email them to Ben McCammon at ***ben.mccammon@gmail.com***

Mindset:
A fixed mental attitude or disposition that predetermines a person's responses to and interpretations of situations.
(from dictionary.com)

Mental Model:
A [mental] representation of the surrounding world, the relationships between its various parts and a person's intuitive perception about his or her own acts and their consequences.
(from wikipedia.com)

Small-to-Medium Enterprise (SME):
An organization with fewer than 500 employees, as defined by Industry Canada.

PROMPT 1

THE PRESENT

What does 'sustainability' mean to you, *on a global scale*?
Provide a short definition:

(PLEASE PRINT)

Optional:
Draw a picture or diagram that represents what 'sustainability'
means to you, *on a global scale*.

PROMPT

2

What does 'sustainability' mean to you, in the context of *your organization*? Provide a short definition:

(PLEASE PRINT)

Optional:
Draw a picture or diagram that represents what 'sustainability' means to you, in the context of *your organization*.

PROMPT 3
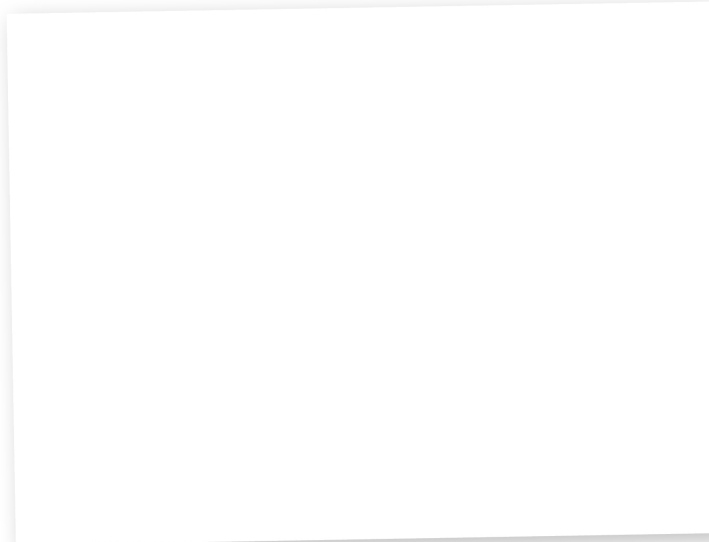
How would you describe *your current role* within your organization, in terms of how it impacts or touches on sustainability?

(PLEASE PRINT)

....

....

....

....

....

....

Optional:

Draw a picture or diagram that represents your current role within your organization, in terms of how it impacts or touches on sustainability.

PROMPT

4

This diagram represents 3 generic areas of business activity: Purpose, Strategy, and Operations*. In your view, *in which of these areas do sustainability efforts currently 'live'* within your organization? Mark an X in each area that applies.

PURPOSE
(WHY)

STRATEGY
(WHAT)

OPERATIONS
(HOW)
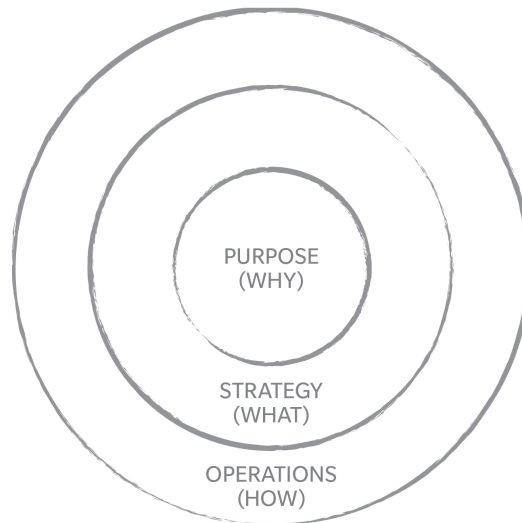
Do you think this current situation needs to change? Why or why not?

(PLEASE PRINT)

----

* DIAGRAM ADAPTED FROM 'THE GOLDEN CIRCLE' IN THE BOOK *START WITH WHY* BY SIMON SINEK

PROMPT 5

Many definitions of sustainability include three aspects: financial, social, and ecological (or similar terms, as shown below). Think about how you approach business decisions that impact the sustainability of your organization.
How important are each of these aspects in your decision making, in general?

Colour in the three bars below to show the level of relative importance you place on each aspect, with 0 being the lowest and 10 being the highest level of importance.

10

5

0

FINANCIAL	**SOCIAL**	**ECOLOGICAL**
Also known as:	Also known as:	Also known as:
'ECONOMY'	'SOCIETY'	'ECOSYSTEMS'
'PROFIT'	'PEOPLE'	'PLANET'
'BUSINESSES'	'COMMUNITIES'	'BIOSPHERE'
'MONEY &	'HUMAN	'NATURAL
FINANCIAL	RESOURCES/	RESOURCES/
CAPITAL'	CAPITAL'	CAPITAL'
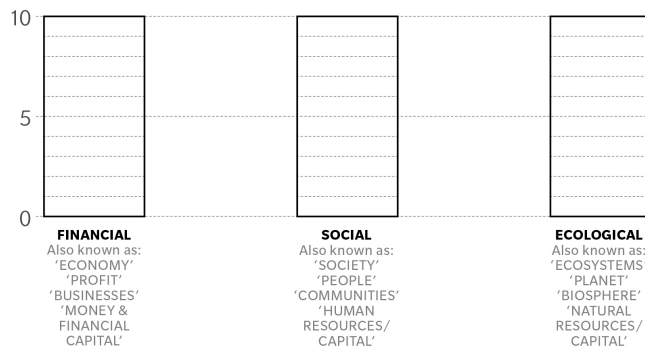
Optional:

For each of the three aspects, what might be a key question that you would ask yourself when trying to make a decision?

(PLEASE PRINT)

Financial: ....

Social: ....

Ecological: ....

106

PROMPT

6

THE PAST

Think about a time in the past when you had to make a difficult business decision that involved sustainability issues, and *you decided to say 'Yes'* to the sustainable option. Briefly describe the experience of making this decision:

(PLEASE PRINT. USE REVERSE SIDE IF YOU NEED MORE SPACE)

What were the key influences that led to this decision?

PROMPT

7

THE PAST

Think about a time in the past when you had to make a difficult business decision that involved sustainability issues, and *you decided to say 'No'* to the sustainable option. Briefly describe the experience of making this decision:

(PLEASE PRINT. USE REVERSE SIDE IF YOU NEED MORE SPACE)

What were the key influences that led to this decision?

THE PAST

Based on your own past experiences, what do you consider to be *the most crucial 'puzzle pieces'* that have influenced your mindset towards sustainability? These could be events, personal experiences, people, or just ideas.

Using the diagram below, write each word or phrase in its own puzzle-piece. You can fill in as many or as few puzzle pieces as you like. If you feel there are more than seven really crucial pieces, please draw in as many as you need.
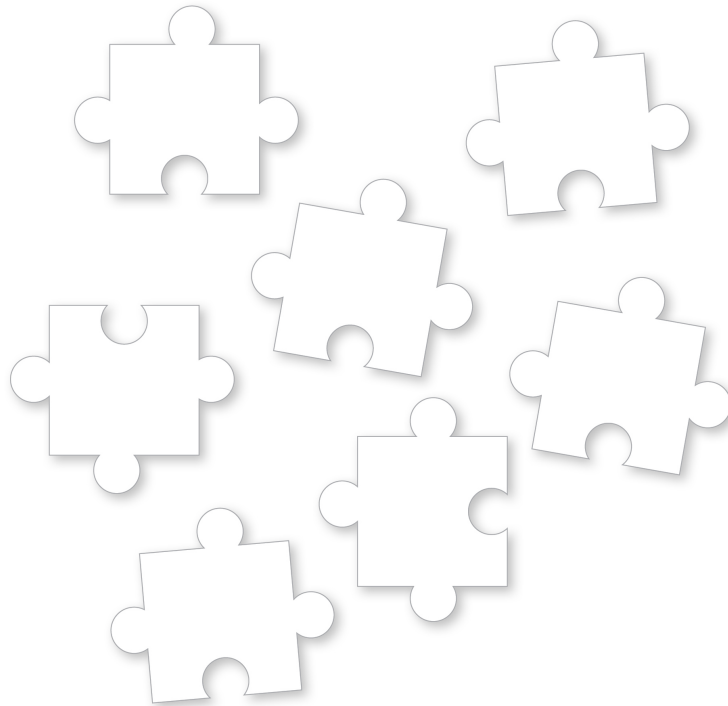
PROMPT
9
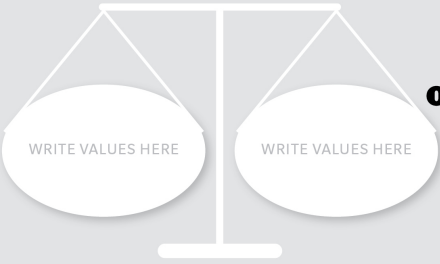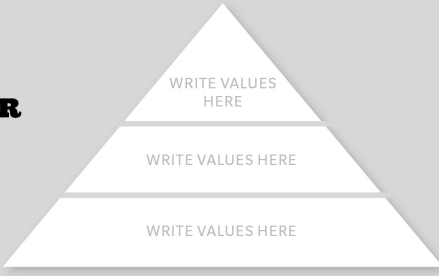
Below are two visual metaphors for how values influence decision making. On the left, the metaphor of 'trade-offs', in which certain values have to be balanced with others. On the right, the metaphor of 'hierarchy', in which certain values at the top are always more important than others at the bottom.

In the context of your organization, think about a key sustainability decision you have made in the past, and *the values that influenced your decision*.

Choose the visual metaphor that best represents your decision making, and write the values you used to make this particular decision in the spaces provided. You can fill in as many or as few as you like in each space.

'TRADE-OFF'	'HIERARCHY'

WRITE VALUES HERE

WRITE VALUES HERE

OR

WRITE VALUES HERE

WRITE VALUES HERE

WRITE VALUES HERE

Please explain why you chose one metaphor over the other.

(PLEASE PRINT)

PROMPT
10

THE PAST

This diagram represents 4 different influences on decision making. In general, *how much does each area influence your decisions* related to sustainability?

Please rank the four areas by assigning each a number from 1-4,
with 1 being the highest influence, and 4 being the lowest influence.

MY OWN BELIEFS
AND VALUES

SHARED VALUES WITHIN
MY ORGANIZATION

MY OWN EXPERTISE
AND KNOWLEDGE

KNOWLEDGE FROM OTHERS
WITHIN MY ORGANIZATION

PROMPT 11

The table below describes five different levels of activities that could lead to more sustainable outcomes, increasing in scale and complexity from Level 1 to Level 5[*].

First, take a moment to read about each level, and think about the current activities in your own organization that relate to sustainability. Based on this framework, *how many activities are you currenlty engaged in at each level?* Mark an ✔ in the 'Current Activities' column for each individual activity that you feel relates to that level.

Next, think about ideas or plans for future activities that relate to sustainability. *How many activities are you planning to undertake at each level, within the next five years?* Mark an ✖ in the 'Future Activities' column for each individual activity that you feel would relate to that level.

	CURRENT ACTIVITIES	FUTURE ACTIVITIES
Level 1: Complying Characterized by: • Complying with sustainability regulations or legislation. • Charitable giving to sustainability-related organizations. • No business case perceived beyond these 2 activities.		
Level 2: Voluntary Changes Characterized by: • Voluntary impact reduction, beyond regulations. • Participating in the development of voluntary industry standards. • Efforts to increase eco-efficiency, driven mostly by cost savings.		
Level 3: Partnering Characterized by: • Proactively managing future risks, beyond impact reduction. • Co-evolution of solutions with businesses, governments, NGOs. • Reputation and brand building.		
Level 4: Integrating Characterized by: • More strategic efforts, linked to long-term organizational goals. • Sustainability embedded in business processes. • Responses are integrated across value chains.		
Level 5: Redesigning Characterized by: • Redesigning business models, beyond products and services. • Creating systems-level change in markets and financial systems.		

INCREASING SCALE & COMPLEXITY

* DIAGRAM ADAPTED FROM THE UN GLOBAL COMPACT'S 'GEARING UP' FRAMEWORK:
  HTTP://WWW.UNGLOBALCOMPACT.ORG/DOCS/NEWS_EVENTS/8.1/GEARING-UP.PDF

PROMPT
12

THE FUTURE

Do you typically set goals for sustainability in your organization at the business planning stage, or later, at the implementation stage? Please describe *when* and *how* this goal-setting process typically occurs, including *who* is involved.

(PLEASE PRINT)

PROMPT 13

When you set goals for sustainability, do you categorize them as Financial, Social, Ecological (or combinations of these categories)? ❑ Yes ❑ No

If you answered no, please explain why you *don't* think of your goals in terms of these categories. (PLEASE PRINT)

If you answered yes, please provide some examples of sustainability goals in the table below, marking the goal category based on the following legend:

GOAL CATEGORIES:

F = Financial	*FS* = Financial and Social	*FSE* = Financial, Social and Ecological
S = Social	*FE* = Financial and Ecological	
E = Ecological	*SE* = Social and Ecological	

GOAL	CATEGORY

114

PROMPT
14

THE FUTURE

Think about your goals for transitioning towards sustainability.
What timeframes do these goals typically address?
Using the diagram below, mark an ✖ in any timeframe for which
you have established sustainability goals. Mark all that apply.

☐	☐	☐	☐	☐	☐
LESS THAN 1 YEAR	1-3 YEARS	3-5 YEARS	5-10 YEARS	10-20 YEARS	20 YEARS OR MORE
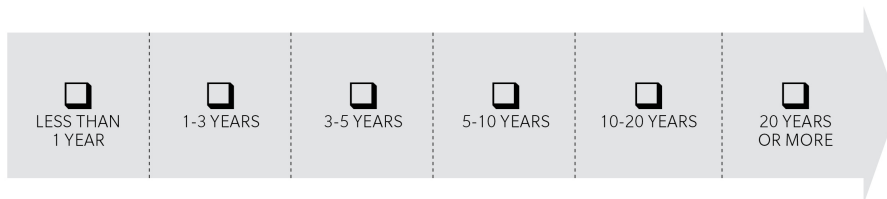
Optional:

How do the timeframes you've indicated above compare to other timeframes
that impact your business? Please describe an example if you can.

(PLEASE PRINT)

SUSTAINABILITY MINDSETS PROJECT
THE FUTURE

00

Imagine that you leave your organization tomorrow.
What do you think would happen to the sustainability efforts
in your organization, over the next 5 years?

(PLEASE PRINT)

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**PROMPT
16**

Thinking ahead 10 years, choose one of your sustainability goals that you feel will be *crucial to the success of your company* within this timeframe. Write a 1-sentence summary of this goal in the box in the middle of the diagram below.

Next, think about the *forces that might enable or block your efforts towards this goal* over the next 10 years. These forces could be people, other organizations, technologies, world events, trends, laws and regulations, or anything else that could have a positive or negative impact on this goal.

Write each enabling force on the left side of the diagram below.
Write each blocking or negative force on the right side of the diagram.

ENABLING FORCES:

BLOCKING FORCES:

GOAL:
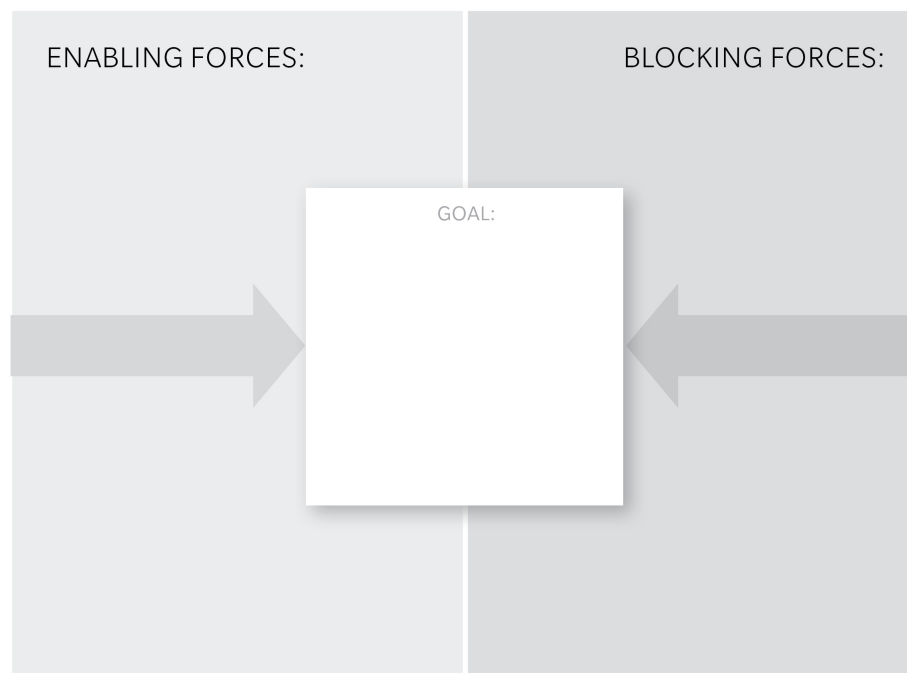
Thank you

If you have any other thoughts to share on this topic, or any comments you'd like to make about the survey or the research project itself, please feel free to use the space below to write or draw:

Appendix B: What is a B Corp?

B Corps (or B Corporations) are for-profit companies certified by the US nonprofit B Lab to meet rigorous standards of social and environmental performance, accountability, and transparency. The "B" stands for benefit, and the certification is intended to help redefine success in business and build a more inclusive, resilient, and sustainable economy.

Becoming a certified B Corp is a three step process that involves: completing the B Impact Assessment with a minimum score of 80 out of 200 possible points; meeting some specific legal requirements in terms of incorporation; and signing the B Corp "Declaration of Interdependence" to make it official.

One benefit of certification is that it helps to elevate a company's brand in a crowded market, similar to the Fair Trade certification for coffee. The other benefit is that B Corps receive a free GIIRS rating, which makes them more attractive to impact investors.

At the time of this writing, there were over 700 certified B Corps from 24 different countries, across 60 industries. In Canada there were approximately 60 B Corps, the majority of them located in Ontario. While US-based B Lab manages the certification process internationally, in Canada B Corps are currently promoted through the Certified B Corp Hub at the MaRS Centre for Impact Investing.

For more details about B Corps, see http://www.bcorporation.net

Appendix C: About the Green Toronto Awards

The Green Toronto Awards were the City of Toronto's environmental awards of excellence from 2005-2012. Developed in partnership with Green Living Enterprises, the Green Toronto Awards recognized the individuals, organizations and companies helping to lead the way to a cleaner, greener Toronto.

The nomination process was open to the public and nominees could be individuals, community groups, organizations or companies. A panel of expert, independent judges evaluated nominations and chose finalists and winners from various categories, such as Community Projects, Green Business, Local Food, Energy Conservation, Environmental Awareness, Green Design, Leadership, Water Efficiency, and Youth Leadership.

Each winner was recognized at a public awards ceremony and awarded $5,000 to further their work on the environment, or donate to an environmental charity of their choice.

The award program was modified and rebranded in 2013, and is now called the Live Green Toronto Awards.