

FOREWORD

Appreciative Inquiry is about the search for the best in people, their organizations, and the strengths-enriched world around them. In its broadest focus, “AI” involves systematic discovery of everything that gives “life” to a living system when it is most alive, effective and flourishing, and most capable in economic, ecological, and human terms. AI involves, in a very central way, the art and practice of asking questions that strengthen a system’s capacity to apprehend, anticipate, and heighten positive potential. It centrally involves the mobilization of whole system appreciation through the crafting of the “unconditional positive question” often-involving hundreds or sometimes thousands of people.

Increasingly, AI has become the positive change methodology of choice in the domain of sustainability. Since AI’s originating theoretical articulation almost 25 years ago (Cooperrider, 1986; Cooperrider & Srivastva, 1987) there has been a rapidly growing convergence between appreciative inquiry, the field of design thinking, and today’s worldwide call to transform an unsustainable economy to a sustainable, bright green economy and ecology of organizations (Cooperrider, 2008). This special volume of *Advances in Appreciative Inquiry* places full attention on this convergence. While the combination of AI with design thinking and sustainable value is relatively recent, its promise and potential is already huge.

On June 24, 2004, the convergence began to flower in earnest when Kofi Annan, then Secretary General of the United Nations, called upon myself and faculty colleagues at the Weatherhead School of Management at Case Western Reserve University to bring AI to the UN’s Global Compact initiative. As many know it, the Global Compact is the largest corporate sustainability effort in the world. In many ways, it was an astonishing call. Having been briefed on the power of the large group AI Summit method, the Secretary General decided that AI could be the best approach for advancing the UN Global Compact’s mission. In short, our team was invited to facilitate what became the largest meeting in history between the UN and hundreds of CEOs, from companies such as Hewlett Packard, Green Mountain Coffee Roasters, Nokia, Microsoft, Lafarge, Novartis, Novo Nordisk, Tata, and many others. The summit was an exploration into the next phases of global corporate citizenship and the creation of a

sustainable economy, where Kofi Annan reached out his hand to business leaders and said: “Let us choose to unite the strengths of markets with the power of universal ideals, let us choose to reconcile the forces of private entrepreneurship with the needs of the disadvantaged and the well-being of future generations” (AI Commons).

The AI summit itself engaged over 500 CEOs well as civil society leaders and several heads of state. In a report issued by Kofi Annan following the summit, one CEO, Rodrigo Loures of Nutrimental Foods, declared (<http://appreciativeinquiry.case.edu>): “I have been to many global meetings and in my experience, the AI summit is the best large group method in the world today.” And in a personal letter following the summit, Kofi Annan said: “I would like to commend you more particularly for your methodology of Appreciative Inquiry and to thank you for introducing it to the United Nations. Without this, it would have been difficult, perhaps even impossible, to constructively engage so many leaders of business, civil society, and government.” All of this raised for me an observation and important question: “Why was sustainability agenda – coupled with AI – such a good match?”

What’s becoming increasingly apparent in our complex multistakeholder world is that global agenda for change faces a paradox. The global issues of our day are tremendously complex, scientifically uncertain, interrelated, and monumental. Imagine the setting I have just described, at the summit with over 500 leaders from business and industry, civil society, governmental agencies coming together to deal with the questions of global climate change; the challenges of billions living in abject, grinding poverty; the end of peak oil; the epidemic of HIV-Aids; and the specter of terror spreading across every geographic boundary. Imagine further the typical approach to inquiry at this kind of meeting: a massive database documenting the depth of the problematique, the root causes of the failures, and forecasts for even greater disaster. As we all know it is not too long then, in meetings such as a UN world summit, before the finger pointing begins and substantial disagreements reach a point of diminishing returns and frustrating immobilization. The scenario is so common and familiar that very few expect much from these global meetings. So this is the global change paradox: the more sophisticated we as human beings become with our diagnostic sciences – where the world is treated as-a-problem-to-be-solved – the less able we are to create the collaborative bond and inspired aspirations needed to organize, to innovate, and mobilize positive actions forward. While the diagnosis of the weighty problem might be totally accurate, it does not matter – indeed, the more sophisticated the problem analytic lens the

less productive the human dimensions, the relational dimensions, of the response. Why? Because somehow the deficit-oriented lens for examining “out there” becomes also the analytic lens applied in the “here and now” dynamic of the human relationships. It is not long before the predictable happens: the growing sense of threat leads to separation, fault finding, and the application of the problematizing modes of analysis to the nascent, new relationships. No wonder large group meetings are dominated by panel speakers and monological patterns. No wonder the agendas are filled with talking heads, well scripted and monitored. And no wonder the “success” of such meetings depends not on the meeting itself but the prenegotiated agreements. Why would we even consider designing such a meeting for spontaneous, open dialogue? The sophisticated search for what’s wrong, no matter how well intended, creates a contagion effect – we all become a “problem-to-be-solved.”

Our meeting with many of the world’s top businesses at the UN began with an entirely different set of assumptions. It began with the assumption that relationships come alive when there is an appreciative eye, when people seek not so much to “diagnose” but to appreciatively search for the best in each other and the assets, opportunities and positive possibilities inherent in the living system of emerging relationships. It began also with the Drucker-like management assumption that the ageless essence of leadership is all about strengths, that is, that the task of leadership is to create an alignment of strengths so strong that it makes the system’s weaknesses irrelevant. And it began with the assumption that creating the new (innovation) is fundamentally different than solving the old (intervention): both are about change, but innovation requires a design thinking energy that is more contagious (positively) than can ever be realized through the mindset of bureaucratic reform. Think of the difference, for example, between the collaborative creativity of a design studio at Apple Inc. and a typical UN meeting. In an AI process, like that of a design studio, the arduous task of intervention gives way to the speed of imagination and innovation; instead of negation, criticism, and spiraling diagnosis, there is discovery, dream, and design. AI seeks to build a link and union between a whole people and the massive entirety of what people talk about as past and present capacities: achievements, assets, unexplored potentials, innovations, strengths, elevated thoughts, opportunities, high point moments, lived values, important traditions, strategic competencies, stories of what works, expressions of wisdom, insights into the deeper corporate spirit or soul – and visions of valued and possible futures. Taking all of these together as a gestalt, AI deliberately, in everything it does, seeks to work from accounts of this

“positive core” – and it assumes that every living system has many untapped accounts of the kind of positivity that opens minds, nurtures relationships, and builds resources for confident collective action.

The impact generated at the UN Global Compact Leaders Summit surprised everyone. After collaboratively designing a new growth strategy, the Global Compact grew exponentially from about one thousand of the world’s largest corporations to over seven thousand today. While it is beyond this foreword to trace every one of the twelve major initiatives that resulted, there was one that is central to the present volume. During the summit a new partnership was proposed and forged to use AI on a continuous basis to search the world and to shine a light on the theme “Business as an Agent of World Benefit” – it would be a search for companies emerging as models of business as a force for peace in high conflict zones; business as a force for the eradication of extreme poverty; and business as a force for eco-imagination and innovation. More formally, to carry it all forward, a partnership was enacted between Case Western Reserve University, the home of AI, the Academy of Management with its 19,000 professors, and the UN Global Compact. And through this exciting collaboration there would be an AI summit every several years, called the Global Forum for Business as an Agent of World Benefit. The Global Forum was then established based on the assumption that every single global and social issue of our day is a business opportunity, in disguise, just waiting for the creative innovation of good business, the entrepreneurial mindset, as well as the pragmatism of good business. In the field of sustainability and corporate citizenship, the Global Forum’s niche is unique and it is designed around one distinguishing premise, which I’ve shared at the start of each Global Forum:

Sustainable value creation is the business opportunity of the 21st century. It’s an innovation engine unlike anything we have ever seen in management – and it’s a lens, which will dominate the management agenda for the next generation of thirty to fifty years. Even more important, the outcomes will define the next episode in creative capitalism and, ultimately, will determine the well being of our imperiled planet. Hence the forum’s foremost question is this: “How do leading companies, associations, and markets turn pressing global and social issues, for example the Millennium Development Promises or climate change and energy concerns, into bona-fide business opportunities, in ways that vitally and consistently benefit both business and the world?”

This volume was envisioned and grew, therefore, from the 2009 Global Forum for Business as an agent of world benefit held at Case Western Reserve University’s Fowler Center for Sustainable Value. Once announced, including the call for papers, the forum took off. An astonishing 400

academic papers and management application workshops were proposed featuring literally thousands of innovations. Over 1000 people participated, bringing scholars and executives together across the domains of theory and practice. The forum title “Management as Designing in an Era of Massive Innovation” was carefully chosen to explore the primacy and potency of design thinking as the vortex for creating a new breed of industry-leading stars, showing how the creative designer’s attitude can transform 21st century corporate citizenship into a source of business opportunity and world-benefiting innovation. It also, as the words “massive innovation” suggested, was about scaling up, about amplifying. Indeed, the changes rippling across the fields of design, sustainability, and appreciative inquiry are nothing short of revolutionary. However, it was also clear to us that we are no longer lacking in isolated product exemplars or surprising business-driven sustainability solutions. Everyone, it seems, is going green or proposing to become more socially responsible. Today’s greater challenge lies in system-wide design. That is, it is about the task of discovering ways of overcoming the systemic challenges of collaborative innovation and applied human creativity in not only large multinational corporations, but across multistakeholder supply chains, whole bio-regions, entire industries and professions, and across economies and geographies where billions continue to be locked in debilitating poverty.

As the reader will see in this volume, true innovation happens when strong multidisciplinary groups come together, build a collaborative and appreciative interchange, and explore the intersection of their different points of view. Many talk about multidisciplinary collaboration, but few are actually successful at sustaining attempts to see what will happen. We believe that having appreciative inquiry’s strengths-based focus in the mix, along with the design thinker’s attitude, is key to success in multidisciplinary collaboration and critical to uncovering unexplored areas of innovation – especially when the aim is the creation of sustainable value. In our experience it is the fusion of strengths and AI’s search for “what gives life” that provides the glue that holds macro-efforts together and makes them successful. It was Kofi Annan’s belief in this idea – in the applied power of appreciative inquiry in human systems – that led ultimately led to this book.

In addition to the featured authors who contributed the advanced, thought-provoking chapters to this volume, as well as the reviewers who helped with constructive commentaries, I need to single out the splendid thought-leadership of Tojo Thachenkery of George Mason University, who saw this project through from creative conception to completion.

Supporting Tojo was the Advances in Appreciative Inquiry series coeditor, Michel Avital, from the University of Amsterdam. We owe a special debt of gratitude to the Fowler Center for Sustainable Value and the much admired Dean, Mohan Reddy, at the Weatherhead School at Case Western Reserve University. The team from the Fowler Center – Ante Glavas, Emily Drew, Erin Christmas, and Garima Sharma – worked night and day managing the Global Forum; to be sure it was a labor of love and the conference was so well received that it served to help us recruit the brilliant new executive director of the Fowler Center, Roger Saillant. Intellectually, the focus on sustainable value was inspired by our faculty colleague Chris Laszlo and his recent book on the subject. We are also indebted to the many doctoral students from the Department of Organizational Behavior, at Case Western Reserve University and to Professor Ronald Fry for his seminar featuring the world inquiry on business as an agent of world benefit. We were gifted too with administrative support from one of Tojo's great students, Penny Potter, and the ever-caring, competent, and dedicated Retta Holdorf. Penny played the role of Project Manager, which enabled the timely completion of the review process and various steps afterwards. Generous financial support came from leading companies such as Fairmount Minerals, Accenture, and the Brazilian Confederation of Industries. Several senior executives – CEO Chuck Fowler at Fairmount Minerals, David Abood Partner, Accenture, and President Rodrigo Loures, head of the Brazilian Confederation of Industries in Parana – are the kinds of leaders our world needs to multiply.

Finally, we owe a very special debt of gratitude to the Board and staff of the Fetzer Institute, specifically to Tom Beech and Dave Slyter, not only for the Institute's lead funding and collaborative support for the Global Forum for Business as an Agent of World Benefit, but for their belief in the positive assumptions of Appreciative Inquiry and their vision of management as a noble profession – as a humanly significant calling and as a spiritual enterprise for bringing meaning, courage, and love into the world.

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ADVANCES IN APPRECIATIVE INQUIRY VOLUME 3

**POSITIVE DESIGN AND
APPRECIATIVE
CONSTRUCTION:
FROM SUSTAINABLE
DEVELOPMENT TO
SUSTAINABLE VALUE**

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To the memory of Suresh Srivastva who inspired us to think differently

Emerald Group Publishing Limited
Howard House, Wagon Lane, Bingley BD16 1WA, UK

First edition 2010

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British Library Cataloguing in Publication Data

A catalogue record for this book is available from the British Library

ISBN: 978-0-85724-369-0

ISSN: 1475-9152 (Series)



Emerald Group Publishing Limited, Howard House, Environmental Management System has been certified by ISOQAR to ISO 14001:2004 standards



Awarded in recognition of Emerald's production department's adherence to quality systems and processes when preparing scholarly journals for print



INVESTOR IN PEOPLE

INTRODUCTION TO POSITIVE DESIGN AND APPRECIATIVE CONSTRUCTION: FROM SUSTAINABLE DEVELOPMENT TO SUSTAINABLE VALUE

Tojo Thatchenkery, Michel Avital and
David L. Cooperrider

Positive Design and Appreciative Construction: From Sustainable Development to Sustainable Value draws on the power of Appreciative Inquiry to reframe our conceptions and approaches to designing and reinforcing systems and environments that promote sustainable value across the board. Rarely in recent history have there been times when one can say that a new consciousness about a global issue has suddenly surfaced. The quest for sustainability is one in that category. It is at the top of social and political agenda for most countries. The scientific evidence of the need for a radical shift in preserving the planet for future generations has been accumulated for a long time, despite the occasional challenges of its validity by diehards who believe otherwise. Yet only recently has the awareness of sustainability shot up to the level of a common ground and a collective political will across diverse ideologies and at a global level. However, a multitude of somewhat

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 1–14

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003005

conflicting approaches are offered to prescribe and maintain sustainability. Some are reactive in the form of regulations and international treaties, and others are based on free market models, such as trading in CO₂ emission quotas or varied pricing schemes based on energy source. In this volume, we propose a shift: a call for moving from sustainable development to sustainable value. The former is primarily a mechanistic approach that is embedded in the development paradigm, and promotes progress, growth and consumption in an ecologically friendly way. In contrast, sustainable value is holistic and embraces a universal value stance that caters for all stakeholders.

Sustainable value encompasses the shareholder value as well as stakeholder value. Until recently, shareholder value and stakeholder value were perceived as generally incompatible. The desire to make a profit was often seen as being at loggerheads with the will to create sustainable value. In other words, there was much agreement that organizations are virtually incapable of creating value for all of their stakeholders simultaneously (Hart & Milstein, 2003). This dichotomy has changed, as we hope to demonstrate in this volume.

A growing number of socially responsive investment funds have shown that it is possible to do good for both society and the shareholder at the same time. Socially responsible investing (SRI) not only strives to enhance the bottom lines of the companies they have invested in, but also to build a more sustainable world. Socially responsible investments encompassed an estimated \$2.71 trillion out of \$25.1 trillion in the U.S. investment marketplace in 2007. SRI has entered the mainstream discourse and terms such as mission investing, responsible investing, double or triple bottom line investing, ethical investing, sustainable investing, or green investing have become common. Not surprisingly, SRI has gained much popularity and is supported by individuals as well as corporations, universities, foundations, public and private pension funds, and nonprofit organizations. In the long term, it performs as well or better than non-SRI investments. Subsequently, institutional investors represent the largest and fastest growing segment of the SRI world (<http://www.socialinvest.org/resources/sriguide/srifacts.cfm>).

Related to SRI are the *Dow Jones Sustainability Indexes*. Launched in 1999, the Dow Jones Sustainability Indexes are the first global indexes tracking the financial performance of the leading sustainability-driven companies worldwide. More than 70 DJSI licenses are held by money managers in 16 countries. Owners of DJSI see corporate sustainability as a business approach that creates long-term shareholder value by harnessing the market's potential for sustainability products and services while at the

same time successfully reducing sustainability costs and risks (<http://www.sustainability-index.com/default.html>).

It is generally recognized that a major issue in the creation of sustainable value is the need to satisfy the organizational stakeholders in the process of the delivery. As portrayed by Charter (1998, p. 57), “Customers may be satisfied but if employees and suppliers are poorly treated, new ideas and improved productivity will not be generated, and the company may fail, therefore reducing benefits for stakeholders.” Therefore, improving the benefits of all stakeholders is critical. Sustainable value “creating shareholder wealth that simultaneously drives us toward a more sustainable world” (Hart & Milstein, 2003, p. 65) has thus become a visible business strategy driven by a convergence of factors such as sustainability-driven customer expectations, new technology developments in the market place including those of the competitors, and governmental incentives (Park, 2009). A sustainable company increases stakeholder value through the application of sustainable practices throughout the entire line of the business operation, management, and governance.

The history of *sustainable development* as a concept deserves further elaboration in the context of this volume. The term “sustainable development” was first used in the *International Union for the Conservation of Nature and Natural Resources* (IUCN) 1980 World Conservation Strategy Report. Then the World Commission on Environment and Development report “Our Common Future” (Brundtland, 1987) brought more prominence to the concept. It defines sustainable development as “a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development, and institutional change are all in harmony and enhance both current and future potential to meet human needs and aspirations ... Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs” (World Commission on Environment and Development, 1987, p. 43). Five years later, in the Rio Declaration (1992), the *United Nations Conference on Environment and Development* (UNCED) articulated 27 sustainable development principles, followed by the *World Summit on Sustainable Development*, which recognized that alleviating poverty should be the top goal in sustainable development.

Attempts to explain sustainable development are based on theories from neoclassical economics, ecological economics, and complexity theory (Sabau, 2010). The neoclassical approach builds on the free market model and hypothesizes markets as autonomous self-regulating systems capable of optimizing the needs of various constituents on a cost-benefit analysis

(CBA) basis. Ecological economics takes a broader perspective and places economic activity in the context of the biological and physical systems that support all forms of life. For the neoclassical economists, sustainable development is a never-ending part of economic growth whereas for the ecological economists growth cannot be infinite. In contrast to the market-based treatment of sustainability, explanations that build on complexity theories take the system approach and focus on self-organization and resilience. Understanding the capacity of any large-scale system to self-organize is crucial because self-organization is a key characteristic of any sustainable complex system. Building on multidisciplinary insights, complexity theories reveal the dynamics of long-term sustainability and replace the myopic command and control strategies. Understanding self-organization is the key for nurturing sustainability.

Yet another way to think about sustainable development is through the language of weak sustainable development (WSD) versus strong sustainable development (SSD). Overall, WSD is embedded in the neoclassical economic paradigm, and SSD draws its power from the ecological economics, circulation economics, as well as other more radical versions of environmental management and corporate social responsibility. Whereas for proponents of SSD the interests of humans are not above the interests of nature, for proponents of WSD human utility is a primary and non-negotiable utility.

In short, sustainable development “is a process of achieving human development ... in an inclusive, connected, equitable, prudent, and secure manner” (Gladwin, Kennelly, & Krause, 1995). A sustainable enterprise, therefore, is one that contributes to sustainable development by delivering simultaneously economic, social, and environmental benefits – the so-called triple bottom line (Elkington, 1997). In the business context, sustainability refers to meeting the current organizational needs, including shareholders’ value, employees’ benefits, clients’ requirements, community well-being, and the like, without compromising its ability to generate value and meet the needs of future stakeholders as well. Business organizations can attain this goal and become sustainable by developing and nurturing their economic, social, and environmental capital base. The most apparent departure of the sustainability concept from traditional management theory relates to the motto that economic sustainability alone is an insufficient condition for the overall sustainability of an organization, and that an integrated approach to economic, environmental, and social issues is required.

The energy and momentum needed for creating sustainable value is massive. The process is akin to a paradigm change and needs the concerted

efforts of policy makers, business leaders, educational institutions, and nonprofit organizations. What needs to happen for sustainable value to become accepted as universal as profit value? We believe a generative approach to sustainability may pave the way. We believe that enhancement of sustainable value can be achieved by building on positive design principles inherent in Appreciative Inquiry methodology.

THE SPIRIT OF THIS VOLUME

In this volume of *Advances in Appreciative Inquiry*, leading scholars from the fields of management, organization development, information technology, and education come together to chart new directions in Appreciative Inquiry theory and research as well as new intervention practices and opportunities for design in organizations. While diverse in topic and discipline, each of the following original chapters treats the reader to a view of Appreciative Inquiry's revolutionary way of approaching familiar questions of management, organization design, and sustainability.

PART I: ORGANIZATIONAL AND STRATEGIC PERSPECTIVES

Sustainability has become a widespread aspiration in all walks of life and has naturally also become an issue of concern for organizations, irrespective of size and industry. We are in a time in which consumers, employees, and investors share a passion for companies that do well by doing good. This strategic shift suggests that companies have an important role to play beyond excellence in their domain of expertise. They have an opportunity to become a driving force in the global effort to create a positive and healthy relationship between individuals, their communities, and their natural environment. We experience a political and social climate in which commercial entities are expected to become active participants in the search for solutions to the social, economic, and ecological challenges of our time. Under these conditions, sustainability becomes a strategic asset that should be nurtured and managed. It introduced a new logic and new considerations that touch upon social, technical, economic, and environmental aspects of life at every level. While there is a consensus around the overall need for sustainability, a plurality of somewhat conflicting approaches is offered to address it. Chapters in this section focus on organizational and strategic issues of sustainability.

The first chapter in the volume, *Creating Sustainable Value: A Strength-Based Whole System Approach* by Chris Laszlo and David Cooperrider, lays the overall foundation for positive design and Appreciative Intelligence. They begin with a survey of perceptions about the meaning of sustainability and corporate social responsibility (CSR). True to the spirit of Appreciative Intelligence, Laszlo and Cooperrider reframe the confusion they have observed among the participants regarding the concepts, as an opportunity for thoughtful leaders to differentiate themselves by embracing innovation driven by sustainable value and business acumen. To illustrate such possibilities, they provide seven steps for integrating sustainability into business strategy and operations, using a strength-based whole system approach. The seven-step process allows senior managers to reframe sustainability as a source of value creation using a life cycle collaborative approach to innovation, and to compress the time and resources required to achieve the desired results.

The theme of corporate social responsibility is further explored as a driver for sustainable value by Mary Jo Hatch and Philip Mirvis in the next chapter, *Designing a Positive Image: Corporate Branding and CSR*. The chapter examines the connections between corporate branding and CSR and how design thinking can be applied to join the two. Examples of several global companies linking the two to rebrand their relationship to society or to repurpose their CSR efforts are then described. Hatch and Mirvis note that all the firms that they have studied have taken serious brand-driven moves to create sustainable value for their businesses and society. The chapter concludes with a few prospective scenarios regarding the way in which corporate branding and CSR can be applied to sustainable value creation, positive organization design, and product innovation.

The opportunities that have become available in the “brave new world” driven by sustainable values can be better utilized by bridging design thinking and design management. A solid attempt in that direction is made by University of Gothenburg scholars Ulla Johansson and Jill Woodilla in the next chapter, *Bridging Design and Management for Sustainability: Epistemological Problems and Possibilities*. Johansson and Woodilla analyze the epistemologies of design management, design thinking, and Appreciative Inquiry, identify common elements among them, and discuss problems and opportunities in combining discourses from multiple paradigms. In the end, they have chosen to focus more on the opportunities by providing examples from three projects led by designers, and comment on the different ways the discourses understand the concept of sustainability, and ways in which practitioners create sustainable value.

The chapter that follows, *A Whole New Value: Driving Innovation, Sustainability and Prosperity through Appreciative Inquiry*, by Nadya Zhexembayeva, provides several examples of business leaders embracing sustainable value with or without the type of creative reframing that Johansson and Woodilla had narrated earlier. Zhexembayeva correctly points out that at the espoused value level, business leaders have no trouble subscribing to sustainable value. Transforming it into an operational value requires hard work, persistence, irrepressible resilience, and comfort with ambiguity – all qualities of Appreciative Intelligence. The chapter analyses the practices of companies that have figured out how to embrace sustainable value that benefits all stakeholders while at the same time making profits that are sought by shareholders. She lists specific practices that are essential for the creation of this win–win situation between the shareholders and stakeholders. They include understanding the value shift emerging in the global economy, discovering new ways to achieve profit goals with new sustainable value-based strategies, and engaging the positive generative capabilities of the whole organization.

PART II: POSITIVE DESIGN PERSPECTIVES

Design thinking offers a process-oriented approach that complements the static view inherent in the managerial and strategic approaches to sustainability. Management is not only an act of decision-making between a given set of alternatives; it is also the active, ongoing shaping and designing of organizations and their stakeholders' experiences. Taking a design stance encourages a constructive, divergent behavior that protects managers from premature closure in decisions and actions. An emphasis on designing thus has the potential to invigorate management scholarship and extend it beyond the traditional boundaries of default economic solutions, to default economic problems. It allows us to ask legitimately not only how things work in an organization, but also what managers should do to make things work in a more humanly desirable way, and to question why we should be doing familiar things at all. Design is about reframing ideas and shaping alternative courses of action. This section is focused on how designers can generate a new discourse and evoke desirable action with respect to sustainable value. The design approach is concerned with how things ought to be and how we can get there. Chapters in this section are concerned with questions such as: how can we use the potential of the design attitude in a generative way? How can sociotechnical design configurations

enhance sustainable value? Combining a positive lens on organizing with the transformative power of design thinking opens new horizons for creating organizational processes, contexts, and associated informing practices that can create sustainable value.

The first chapter in this section focuses on sociotechnical systems theory and sustainable innovation. In *The road to Sustainable Value: The Path-Dependent Construction of Sustainable Innovation as Sociomaterial Practices in the Car Industry*, Wietske van Osch and Michel Avital point out that sustainable innovation is not only about the design of radical “green” technologies, but is also about generating social and institutional support that complement and reinforce the adoption and diffusion of these technologies at large. Hence, treating the ecologically hazardous nature of the prevalent technologies alone is insufficient without complementary social change. Building on a longitudinal study of sustainable innovation in the car industry, the authors argue that the prevailing discourse that is centered on the creation of business value is unlikely to facilitate the widespread adoption of sustainable technologies. Furthermore, taking into consideration the sociomateriality of sustainable innovation, they suggest that a focus on creating social value is indispensable for triggering the desired change toward sustainable value. Building on an analysis of sustainable innovation in the car industry, they generate two relevant insights for sustainable value. First, they demonstrate the path-dependent nature of sustainable innovation, which is constrained and sustained by the materiality, social structures, and institutional frameworks that comprise the overall sociotechnical system in which innovation takes place. Second, they show that a successful diffusion of radical sustainable innovation requires both technological innovation and complementary social changes that together can disrupt the existing evolutionary path of technology and construct more sustainable alternatives. Overall, they argue that reframing the discourse around social value in lieu of monetary value can be leveraged by organizations for shaping alternative courses of action, creating innovative technologies, and developing novel practices that create sustainable value for all stakeholders in society.

Next, Anthony Smith takes the discussion of sociotechnical systems to a more personal level by giving examples from his experience in a few projects. In *Stewardship Design Principles: Learning from Living Systems (BIRDS) to Co-Design Fast-Forward Futures*, he notes that there is much to learn from living systems about the design and management of sustainable entities. The stewardship design principles – balance, interdependence, regeneration, diversity, and succession (B-I-R-D-S) – help sustainable design

practitioners move up from small-scale experiments to large-scale systems change. Smith provides case vignettes in the design of small-scale experiments, which show how stewardship design principles can enhance large systemic change at the regional and national levels.

The next two chapters focus on the relationship between information technology and sustainable value. The chapter *Forms of Government and Systemic Sustainability: A Positive Design Approach to the Design of Information Systems* by Kenneth Kendall and Julie Kendall examines forms of government and considers information systems (IS) sustainability as an instance of facilitative mechanism for a positive design approach. A sustainable IS system will create shareholder value as well as larger societal good. They realized that a system designer can adopt positive design and still develop a system that is not sustainable. In an effort to find the reasons for this anomaly, they looked at environmental factors such as the orientation, attitudes, and limits of various forms of governmental forms and indeed found a relationship: the type of government influences the sustainability of IS.

Finally, *The Generative Potential of Participatory Geographic Information Systems* by Dirk Hovorka and Nancy Auerbach describes the generative potential of participatory geographic information systems for creating sustainable value. The authors integrate learning from community-based geographic information systems (GIS) and show how such systems can empower communities to create *Community Sustainable Value*. According to them, this is accomplished by reducing information asymmetry, analyzing the history of decision-making, and monitoring the components of community sustainable value. Community-based and web-enabled GIS enable citizens to make the most efficient use of local data and present sustainable scenarios. Hovorka and Auerbach believe that the GIS design process itself represents an opportunity for situated social action for creating sustainable values.

PART III: APPRECIATIVE INTELLIGENCE PERSPECTIVES

Appreciative Intelligence is the ability to reframe and perceive the generative potential in challenging situations and to engage in purposive action to transform the potential to positive outcomes (Thatchenkery & Metzker, 2006). More than 20 years ago, David Cooperrider and his colleagues launched the *social innovations in global social change* research project (1987)

and studied organizations such as the Nature Conservancy, the International Physicians for the Prevention of Nuclear War, the Hunger Project, and the ICA. By reframing global problems with an appreciative lens, each of these organizations was aiming for creating sustainable value even though the term was not in vogue a quarter of a century ago. Chapters in this section provide thoughtful case studies and lessons learned from businesses and nonprofit organizations that have embraced sustainable value as a core operational value through reframing. They have shown how a reframing from sustainable development to sustainable value has already occurred or could emerge, and to the extent possible, demonstrate the “business case” for sustainable value.

Creating sustainable value often requires reframing the constraints that are abundant in the environment, in organizations, and in the mind-set of stakeholders. Innovation is one of the most important aspects in the sustainable value creation process. Business as usual means producing more, consuming more, and doing whatever is economically feasible and convenient on the side for the sake of the environment. In the past, corporations have typically engaged in sustainability as an afterthought. Today, they are more proactive. They are thinking outside the box and constantly reframing. They no longer think that being sustainable implies being less profitable. On the contrary, as innovative business leaders such as Ray Anderson of Interface have discovered, corporations can be more profitable by mindfully developing sustainable business practices. Analysis of such cases reveals a high level of Appreciative Intelligence on the part of the leaders, as shown in the next four chapters.

If reading about the epistemologies of design thinking and design management has made your head heavy, the first chapter in this section by Theresa McNichol will certainly soothe your nerves. *A Charge to Wonder: The Art Museum as Laboratory for Re-Imagining a Sustainable Future* is a delightful example of how the author has used design thinking in teaching. She starts by pointing out that the ability to imagine our world being arranged along different lines is the first step to achieving sustainability. McNichol reminds us that this ability comes naturally to young people and to artists and designers who look for unexpected connections between facts and ideas. She examines her own role as a designer and teacher and has experimented with developing the Appreciative Intelligence of her students. Recognizing that museums offer the ideal settings and tools for opening eyes to seeing new possibilities, she has been encouraging students to create personal narratives of their experiences in art museums. In analyzing such stories, McNichol finds that students’ private, focused encounters with artifacts from other periods, and cultures have helped them see the world in refreshingly new ways. She believes that

providing opportunities for business leaders to replicate such experiences of artistic appreciation may help them develop innovative thinking, new insights, and embrace sustainable value creation in a mindful way.

The next chapter is by David Dunne who describes two inquiry-based approaches to sustainable value: positive design and integrative thinking. In *Two Inquiry-Based Approaches to Sustainable Value: Positive Design and Integrative Thinking*, Dunne points out that sustainable value is a “wicked problem” that evades definitive formulation and clear solutions, thanks to the multitude of stakeholders with often incompatible goals. According to Dunne, what might work is either positive design or integrative thinking because they have a holistic system focus and emphasize reflection and reframing, a component of Appreciative Intelligence. Design approach not only explores the users’ understanding but also initiates trial solutions as a means of framing the problem. Likewise, integrative thinking explores the mental models of stakeholders. The rest of the chapter is a case study of Tata Motors that analyses the company’s original decision to locate its plant for the manufacture of the common man’s car in the state of West Bengal, subsequent controversies, and the eventual decision to pull out of that state and relocate to another state that was more business friendly than West Bengal. Dunne sees the scenarios as a wicked problem because many stakeholders had contrasting goals and vested interests. He believes that the Tata organization could have benefited from using either positive design or integrative thinking.

Next, the case study, *Sustainability and Employee Engagement: Organizational Change in the Case of Streamline Manufacturing* by Hilary Bradbury-Huang, shows how a changed project led to positively impacting the natural and organizational environments as well as contributing to the financial health of the organization. In a case based on 30 interviews with participants in a leading North American manufacturer’s seven-year sustainability project, Huang lists the various innovative methods that the company used to increase nonexecutive employee engagement in technical innovation for sustainability. For example, eco-action learning had motivated many employees to persevere despite the challenges associated with long hours and time away from family. Huang shows that the Appreciative Intelligence of the employees and leaders helped them to reframe business, find meaning in day-to-day routine business tasks, and eventually create sustainable value.

In the fourth example, *Appreciative Intelligence in Action – A Case Study of Sustainable Value Creation by Irupana Organic Food of Bolivia*, Michael Metzger, Héctor Martínez, and Miguel Ángel López demonstrate how the leadership of the organization moved from dependency on international

NGOs to self-sufficiency by reframing in order to find what they had instead of what they did not have. Javier Hurtado and Martha Cordero, founders of Irupana Organic Foods located in the Bolivian Altiplano, became disillusioned with the cycle of international aid and set out to discover the unique potential in the harsh Bolivian landscape and the impoverished peasant farmers who live there. Through the framework of Appreciative Intelligence Metzger et al. share with us in this case study how the Hurtado and Cordero reframed their circumstances to bring out specific positive potentials within the Altiplano farming community and its unique natural resources, and create a sustainable organic foods company that created positive impact for the local citizens. According to them, the Irupana story illustrates how our destinies are shaped by our ability to discover that which is best within ourselves and the communities in which we live, and the impact that one individual's application of Appreciative Intelligence can have on a community.

PART IV: SOCIAL ENTREPRENEURSHIP PERSPECTIVES

Organizations such as Ashoka have demonstrated the power of massive social entrepreneurship. *Changemaker*, one of Ashoka's recent initiatives, attempts to develop new models of social entrepreneurship among the university student population all over the world. Social entrepreneurship bridges the gap between established organizations such as the businesses and citizen initiatives. It has the greatest potential for validating sustainable value as a legitimate goal for organizations of all sorts. Contributions to this section extract lessons learned from high-impact social entrepreneurship, or conceptualize how this nascent movement with unbridled potential may contribute to the radical shift necessary for moving from sustainable development to sustainable value.

The first chapter in this section, *Social Entrepreneurship: A Model for Sustainable Value Creation*, is a case study by Michael Pirson who proposes social entrepreneurship for addressing corporate greed and the related focus on short-term profit. He shows how this nascent movement with unbridled potential may contribute to the radical shift necessary for moving from sustainable development to sustainable value. The evidence comes from Pirson's case study of bracNet, a for-profit organization in Bangladesh attempting to provide digital connectivity to the poor and middle class. This entrepreneurial enterprise has made creative use of new business models and

cross-sectoral partnerships to implement a social and financial value creation strategy. For example, the for-profit bracNet shares ownership with BRAC, a nonprofit organization, VC's, and hedge funds.

The second chapter in this category, *Sustainability and Impact of Microfinance Institutions* by Kokila Doshi, describes using a case study of ACCION San Diego (ACCION SD) and through the lens of Appreciative Intelligence, a framework relating to the way microfinance organizations create sustainable value. She develops an appreciative conceptual framework for sustainable microfinance and shows how it can be applied to ACCION SD. The case study reveals that ACCION SD is in the habit of continuously reframing, seeing new possibilities, and engaging in concrete actions to bring a vision of the future to reality, all of them components of Appreciative Intelligence. Kokila shows that the Appreciative Intelligence of its leadership has led to competitive advantage and sustainable value while that of its clients reinforces ACCION SD's sustainability.

While the case study above covered South America, the next case study is about microenterprises in Africa. In *Positive Design and Construction of Mechanisms for the Sustainable Development of Microenterprises in Africa*, Carol Dalglish and Judy Matthews use semi-structured interviews, observation, and participatory action research to articulate a new approach for microenterprise development in developing countries, including the practices of microfinance and microcredit. Using a longitudinal study that lasted six years, Dalglish and Matthews examine the successes and failures of microentrepreneurs of Beira in Mozambique and suggest that a process of cocreation with local people based on sustainability principles will be most appropriate for enterprise development in developing economies.

Last but not least, *Creating Macro Actors for Sustainable Development* by Chester Warzynski and Alesia Krupenikava points out that several sustainability projects have failed due to the absence of approaches that could have elicited stakeholder support and aligned the change within social structure of the organization. They propose the actor-network theory (ANT) as the remedy, and describe a case study at a major research university, where ANT was used along with traditional empirical methods and Appreciative Inquiry to create social networks and sustainable value.

CONCLUSION

The 16 chapters in this volume signal an emerging shift from sustainable development to sustainable value. While this is a welcome development,

the human factor in building sustainable organizations cannot be underestimated. Building on related study by Pfeffer (2010), we found in Google Scholar 58,800 entries for the term, “environmental sustainability,” and only 14,100 for “social sustainability” (accessed May 3, 2010). Pfeffer (2010) points out that while Walmart has made significant strides in environmental sustainability, it paid its employees 15% less than other large retailers, and thanks to the lower pay, Walmart employees have made more frequent use of public assistance and welfare programs. He also cites British Petroleum, which has made headlines as a company visibly moving toward sustainability but paid a fine of \$87 million for the explosion in their facilities in Texas City in 2005 and was responsible to the oil spill in the Gulf of Mexico in 2010. While environmental concerns are appreciated, the sustainable quest should not disregard the human side of the equation.

Sustainable value encompasses social, ecological, and environmental sustainability and treats them all as interlinked. In sustainable value-based living, plants, animals, humans, and the environment, all function as a living system drawing least amount of nonrenewable resources from one another and creating new ways of leaving this planet as more liveable than it is today. With this vision in mind, we invite you to read Volume 3 of *Advances in Appreciative Inquiry* and encourage you to apply its core ideas in your own context.

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CREATING SUSTAINABLE VALUE: A STRENGTH-BASED WHOLE SYSTEM APPROACH

Chris Laszlo and David L. Cooperrider

ABSTRACT

We provide seven steps to integrating sustainability into strategy and operations. The process is designed to enable business leaders to reframe sustainability as a source of value creation using a life cycle collaborative approach to innovation instead of piecemeal change led by small groups of experts. Furthermore, the approach builds on the strengths of whole business systems rather than attempting to fix the weaknesses of individual actors as is typical of many strategy execution efforts. The chapter begins with a survey of perceptions about the meaning of sustainability and corporate social responsibility (CSR). The survey shows both significant confusion about the concepts themselves, and an opportunity for first movers to differentiate themselves by adopting an approach to sustainability based on innovation and business value. The seven steps are then presented using a strength-based whole system approach to compress the time and resources required to achieve the desired results.

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 17–33

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003006

HOW SUSTAINABILITY IS PERCEIVED BY MOST MANAGERS

What does sustainability mean for business? This is one of the most widely asked questions we hear because of the differing (and often conflicting) beliefs that exist within any organization. In a survey of 502 managers conducted between 2007 and 2009 across nine different companies in five sectors (FMCGs, chemicals, telecommunications, aerospace, and electric utilities), we asked the following question, “How would you say most managers in your company think about sustainability and corporate social responsibility (CSR)?” Respondents were asked to allocate a fixed number of points across five options. The average weights for each option across all the nine companies are shown in the solid bars of Fig. 1, and the average weights by company are shown in the gray lines.

The survey results show that no single meaning of CSR/sustainability predominates. Companies that are reactive to sustainability pressures (such as Utility 3) tend to attribute a greater weight to “a way to counter government

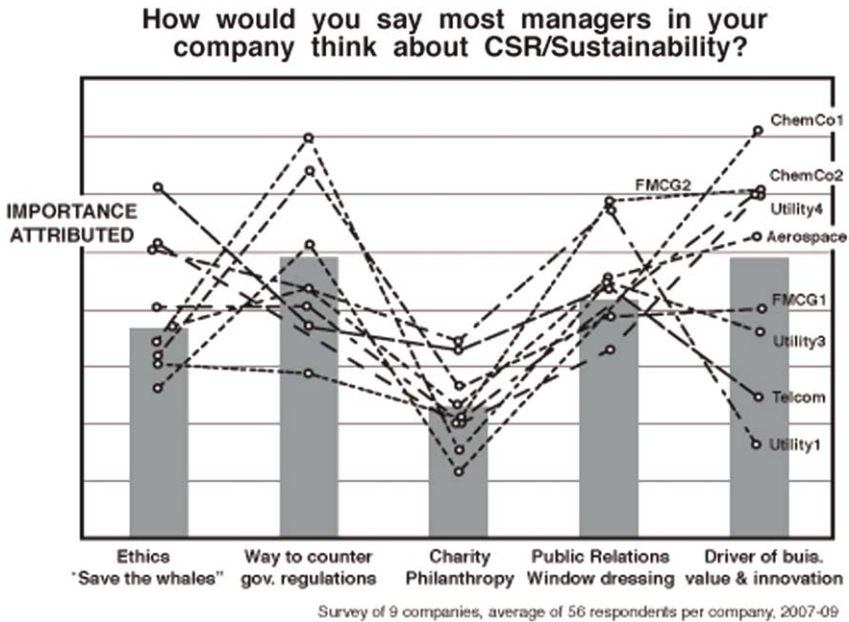


Fig. 1. Survey of Perceptions about the Meaning of CSR/Sustainability.

regulations.” Companies that are proactive and seek to anticipate sustainability pressures (such as ChemCo1) give greater weight to “a driver of business value and innovation.” However, it is striking that, in all companies, significant weight is given to “public relations and window dressing,” an indicator of the continued skepticism about sustainability’s relevance to business.

Equally striking is the spread of weights between companies for “a driver of business value and innovation.” The greater spread of weights between companies, even within the same sector, for this definition of sustainability relative to the other four definitions, suggests that there might be ample opportunity for first movers to differentiate themselves through sustainability business strategies.

HOW WE DEFINE SUSTAINABILITY

For the purpose of this chapter, sustainability in business is a dynamic state that occurs when a company creates ongoing value for its shareholders *and* stakeholders. We call this *sustainable value*. The inclusion of stakeholder theory in business strategy dates back to Freeman (1984), and more recently Waddock (2004) articulates a theory of corporate citizenship that takes into account the well-being of stakeholders in a way that explicitly contributes to business interests. When DuPont designs manufacturing facilities that use less energy, produce zero waste, cost less to build and operate, and are safer, it is creating sustainable value. The same is true when Procter & Gamble offers liquid detergent concentrates in smaller packaging. Customers prefer them because they are lighter to carry for the same number of washes, while retailers like them because they improve shelf-space utilization, and environmental stakeholders applaud the reduced plastic resin and savings in water and diesel. An essential aspect of sustainable value is that by *doing good* for society and the environment, the company *does even better* for its customers and shareholders than it otherwise would.

By contrast, companies that create shareholder value at the expense of stakeholders are in effect transferring value from the stakeholders to the shareholders. When value is destroyed for stakeholders in a marketplace characterized by informed consumers and greater transparency, companies incur competitive risk. Consider recent developments in the cosmetics sector. Manufacturers find themselves increasingly under attack for the use of lead, nanoparticles (primarily titanium dioxide and zinc oxide) and suspected endocrine disruptors such as phthalates. They are being accused of unsustainable farming of natural ingredients, unfair wages, and the excessive

use of plastic packaging materials (Malkan, 2007). Incumbent players who fail to respond to the growing perception of stakeholder value destruction are faced with customer de-selection (think Wal-Mart), reputation damage, and the loss of market share to new green competitors. L'Oréal's acquisition of The Body Shop and its recent CEO-led commitment to sustainability leadership are a competitive response to these developments.

Companies that incur financial losses while contributing to society also incur competitive risk. Sustainability does not imply following every whim of environmental and social activists, many of whom have little understanding of business and may unintentionally pressure companies to undertake loss-making activities. Similarly philanthropy and charity, when unrelated to business interests, are examples of value transfer from shareholders to stakeholders. Philanthropy and charity are what a company does with its profits once earned, while sustainability is about *how* a company earns its profits.

In today's marketplace, marked by heightened public expectations in terms of human health and the environment, companies that create sustainable value are uncovering new sources of competitive advantage. Ten years ago this was true for niche businesses like Patagonia. Today, it holds true for mainstream corporations such as General Electric, Danone, and Unilever. Those with the knowledge and competencies to create sustainable value are finding more loyal customers, a greater ability to hire and retain talent (Glavas, 2009), better media coverage, stronger partnerships with nongovernmental organizations (NGOs), and regulators who are more willing to collaborate in shaping industry standards (Laszlo, 2008).

OVERVIEW OF THE SUSTAINABILITY STRATEGY PROCESS

The strategy development process begins with leadership engagement that is both analytically credible and emotionally compelling. Stakeholder impacts along the life cycle value chain will only be seen as relevant to managers when sustainability issues are tightly linked to existing business priorities. When Arch Chemicals, a leading manufacturer of biocides, was faced with the constraint of producing a biocide for marine paints that was not environmentally persistent [as was the case with tributyltin (TBT), the conventional biocide], its scientists came up with a new chemistry based on

omadines. The new omadine-based biocide proved economical and highly effective, allowing it to take significant market share from competitors. Arch Chemicals' commitment to sustainability was catalyzed in part by early-demonstrated successes with environmentally friendly products.

At the same time, the magnitude of global sustainability challenges, such as climate change, requires bold thinking by business leaders – the willingness to pursue potentially disruptive innovations in technologies and business models. Sustainability champions must be both more visionary and more hard-nosed realists than traditional corporate strategists. Toyota's investment in hybrid drivetrains in the 1990s, when oil was trading at \$20 a barrel (in 2006 dollars), was a clear-eyed assessment of future business risks posed by the fossil fuel, CO₂-emitting internal combustion engine. Despite recent controversies surrounding the quality problems that erupted in 2010, Toyota continues to pursue clean mobility solutions and exploring technologies such as 100% solar and even cars that clean the air as they are driven. The company's investment in sustainable mobility is not a strategy to serve green consumers. Instead, it is an acknowledgment that maintaining global industry leadership in coming decades will require massive reductions in carbon intensity.

Formulating the company's sustainability vision requires a deep understanding of underlying trends in society and the environment. This in turn requires a life cycle value chain approach capable of engaging the entire organization and its many stakeholders. Sustainability challenges require a multistakeholder collaborative design-based approach to innovation from product conception to end-of-life. A number of organizational development tools and methods have been used in service of whole system change.

In our experience, one approach stands out when it comes to mobilizing complex organizations and their life cycle value chain partners: appreciative inquiry (AI), now in its third decade of use. Through collaborative discovery and by building on system-level strengths rather than on an analysis of weaknesses of the component parts, *AI Summits* are uniquely well adapted to the challenges of sustainability business strategies, where effective solutions can only be co-created at the system level. The momentum for sustainability strategies builds with organizational learning and capacity building.

The overall process including the steps served by an AI Summit is shown in Fig. 2.

The seven steps are presented in a linear layout for visual clarity and to aid in delineating each step. In practice, the process is iterative and often messy. For example, leadership engagement can result from a single



Fig. 2. The Seven Steps to Sustainable Value.

successful green product (in Step 5), producing the commitment necessary to study baseline impacts (Step 2), which in turn can lead to new organizational learning (Step 6). Fairmount Mineral's profitable success with substituting reusable bulk bags for pallets in their shipping of industrial sands, their truck to rail conversion, and their success with early green products such as water filters for emerging markets helped fuel both senior management engagement and organizational learning.

Taken together, the steps provide a decision-making process for setting targets and taking action based on the company's stakeholder impacts along the life cycle value chain of its products. They help managers make the connection between stakeholder impacts and new business opportunities. These new business opportunities are formulated to create business value at many levels of strategic focus (not only regulatory compliance and cost reduction). The steps provide a structured process for designing innovation projects and calculating estimated return on invested capital (ROIC).

Finally, the steps help sequence the strategic pathway to build momentum from quick wins to innovations to game change involving the whole business system.

*Steps 1 and 2: Leadership Engagement and Stakeholder
Impacts Scan*

With these steps, companies explore sustainability as a topic worth senior management time and attention. Executives come together to discuss their understanding of what it means for their business. They develop a shared language specific to their organization. Failure to develop a company-specific definition of sustainability can be a major stumbling block. For example, if one or more key decision-makers speak about sustainability only in terms of public relations or ethics, it is unlikely that more than token resources will be given to it in the strategy development process.

Executives need to understand why sustainability is relevant to competitive advantage in their industry. If there is no great threat or opportunity, it is unlikely that they will mobilize resources. To this end, executive engagement benefits from a structured, interactive inquiry into the sustainability-related business risks and opportunities facing their company. By interactive inquiry, we mean a process of discovery that relies heavily on the knowledge executives already have about sustainability issues and what these might mean for their business (Table 1).

By framing the inquiry as a smarter way to compete in a changed competitive environment, rather than only a moral responsibility, executives are able to see that addressing sustainability challenges is part of their fiduciary responsibility to shareholders.

Once executives are aligned on the value of sustainability for their organization, a fact base needs to be assembled to assess the strategic business opportunities. Depending on the size of the company, only key product lines are selected initially in order to maintain focus and build momentum.

Establish the Baseline

To assess existing value creation in a way that is inclusive of the stakeholder dimension, executives need to understand the environmental, social, and economic impacts of their company's activities. How is stakeholder value being created or destroyed today? Stakeholder impacts need to be assessed upstream starting from raw materials extraction and downstream to product end-of-life. Life cycle value chains are assessed because, in today's

Table 1. Engagement Questions that Help Guide Interactive Inquiry.

-
1. *How are public expectations changing about the company's impacts on its key stakeholders?*
Explore how changing customer preferences reflect the unprecedented awareness of environmental and social issues embedded in a product's design or in its supply chain.
 2. *Who and what are fueling rising expectations?* Consider what drives the NGOs and activist investors who attempt to penalize companies in the sector seen as doing harm, and who lend their support to those seen as socially responsible.
 3. *Is sustainability just a passing fad?* Are energy and food security, chemical toxicity, climate change and water scarcity likely to increase, or will they gradually disappear as potential business issues in the sector?
 4. *What business opportunities exist in the new competitive landscape?* For example, consider the business consequences of anticipated cap-and-trade regulation and what it means for reducing carbon intensity in the supply chain or in product design.
 5. *How are companies in related sectors succeeding (or failing) to capitalize on sustainability?*
Begin to assess how sustainability is driving competitive advantage in related sectors, and what that means for your company.
-

competitive environment, companies from banks to makers of children's toys are being held responsible for the activities of their value chain partners. Fortunately, disciplines such as life cycle assessment (LCA) and carbon footprinting are becoming well established (see for example, *Lifecycle Assessment: Where Is It on Your Sustainability Agenda?* by Deloitte Consulting, 2009). That said, a company-wide LCA often requires a significant effort in terms of management time and resources. Companies can choose instead to focus on only a few high-impact product lines and prioritize stakeholder impacts to make the data collection effort manageable.

In each of the environmental, social, and economic spheres, stakeholder impacts are organized into distinct categories as shown in Table 2 (Willard, 2002). Typically companies choose not to focus on all categories, and instead select a subset tailored to their business. For example, Wal-Mart is focusing on energy and climate, material efficiency, natural resources, and people and culture.

Managers initially assess stakeholder impacts by drawing on data from internal management systems. Structured dialogues with stakeholders, such as community advisory panels, add valuable external perspectives. Seeing the world from the perspective of stakeholders is a powerful lens through which managers can assess sustainability performance. Managers who engage stakeholders and proactively address stakeholder perceptions can

Table 2. Stakeholder Impacts.

-
1. Environmental footprint
 - a. *Energy*. What are trends in usage? What is the fuel mix? Where are the greatest energy demands in the supply chain?
 - b. *Water*. What are water consumption rates? What are current levels of water contamination and waste water re-use? Discharge impacts on local watersheds?
 - c. *Air*. What is the product's life cycle carbon footprint? Where in the supply chain are CO₂ emissions highest? What are the air emissions of NO_x, SO_x and particulates?
 - d. *Waste*. How much waste is landfilled versus recycled? What waste occurs in the supply chain? What happens to obsolete/used products?
 - e. *Land use*. How does supply chain impact global land use? What are the rates of material sourcing from certified forests, fields, and mines?
 - f. *Biodiversity*. How are local flora and fauna affected by raw material extraction? How do facilities impact biodiversity? What is the impact of product use and disposal?
 2. Social impacts
 - a. *Working conditions*. What are the working conditions throughout supply chain? What are total lost workdays and total hours of sick leave as a percentage of total work time?
 - b. *Product safety*. Are products built, used and disposed of in a safe manner for all?
 - c. *Community impacts*. What is the community impact of the company's activities? Is it better off? What is the average commuting distance or the level of car dependence?
 - d. *Social equity*. Does the company make good-faith efforts to meet the unmet needs of underserved consumers? Are fair wages paid along the life cycle value chain?
 3. Economic impacts
 - a. *Jobs*. How does the company handle redundancies and outplacements? Is job training geared to the employee's career development or only short term company needs?
 - b. *Economic growth*. Is the company contributing to regional economic expansion? Is it investing in the region's competitiveness? Is the company creating a local tax base?
-

better anticipate changes in the business environment and avoid being surprised by shifts in societal expectations that can put shareholder value at risk (Andriof, Waddock, Husted, & Rahman, 2003).

Determine Sustainable Value Trends

Stakeholder value is a dynamic state. It is important to understand the migration of stakeholder value based on the interplay of factors such as rising public expectations and technological advances. Because societal expectations are rising and technology innovation offers greener options, a common trajectory is for companies and products to migrate from sustainable value to unsustainable value even when they have not changed their product design or value chain activities. Fig. 3 describes company performance along two axes: shareholder and stakeholder value. It illustrates

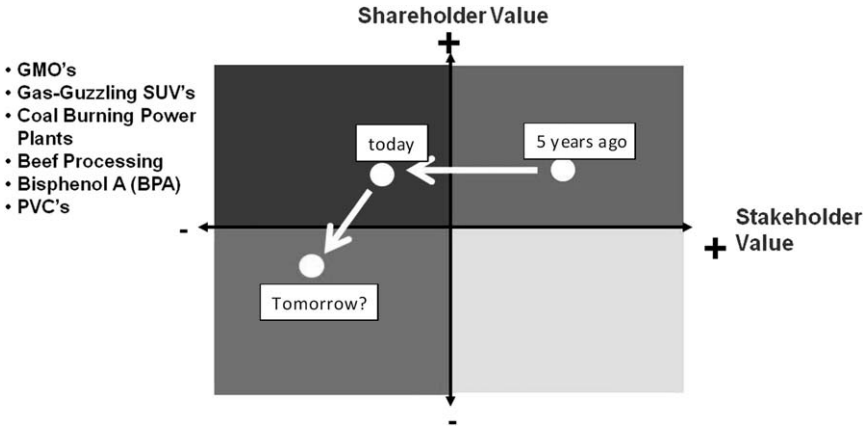


Fig. 3. Rising Expectations Translate into Value Destruction for Products Seen as Increasingly Harmful to Society and the Environment.

how products and raw materials perceived as value creating for stakeholders in the past may be considered to be value destroying today and even more so in the future, with attendant shareholder value consequences.

Companies need to ask themselves where they are on the sustainable value trajectory. What external events could cause the company's products or operations to migrate to the left hand side of Fig. 3?

*Steps 3, 4, and 5: Developing the Sustainable Value Vision,
Designing the Pathway, and Capturing the Value*

Formulating the vision requires executives to address sector-specific sustainability issues, many of which call for discontinuous changes in technology, product design, or business model. For example, in the automobile and electric industries, climate change demands solutions that represent a break with current fossil fuel platforms. In such cases, executives are challenged to envisage a future that is informed by past environmental and social solutions, but is not an incremental extension of them. Another unique challenge at this stage: designing the strategic pathway collaboratively with internal and external stakeholders along the life cycle value chain. Sustainability-driven innovations benefit from stakeholder partnerships that bring new perspectives and greater buy-in all along the value chain from product conception to end-of-life.

To meet these challenges, two unique features of sustainability strategy execution are introduced in steps 3 through 5: *whole system* and *strength-based* change. These two features are fully integrated in appreciative inquiry (AI), the change methodology mentioned earlier that is proving increasingly popular with mainstream industry leaders undertaking sustainability business strategies.

From Piecemeal to Whole System

The question of wholeness brings into play basic assumptions about how change occurs. For example, as the field of management research grew, it offered leaders an unquestioned mantra about group size. The most effective size to lead change is often thought to be “about 6–8 ... sometimes 12.” Strategic planning typically unfolds in precisely this manner: a small team at the top returning from senior executive retreats, followed by a communications rollout. Likewise shop floor quality programs: a small group of people working from the bottom-up, and then proposing improvement plans for consideration at levels above. From the use of cross-functional task forces and focus groups to the design of project teams and teambuilding sessions, the list of small group efforts goes on. But on reflection it is clear that in relation to effective group size, management gurus forgot to ask: “most effective for what?”

To magnify and leverage the collective intelligence of a whole business system, a much larger group (often 500–1000 or more) engaged in strategy development and execution over a compressed period of time (as little as three days) is proving far more effective than 6–8 people handing off their recommendations, one group to the next, with all the associated miscommunications, unproductive coordination costs, and breakdowns along the way. Similarly, to emerge from strategy sessions as an aligned organization with everyone committed to a shared set of objectives requires the engagement of a *larger-scale configuration of the whole* of internal and external stakeholders, across all silos and levels, interactively designing the future and planning together.

Sustainability business strategies and product innovations resulting from such efforts have been successfully conducted at HP, Wal-Mart, the dairy industry, the US Navy, and the UN Global Compact. Small- and medium-size companies such as Green Mountain Coffee Roasters and Fairmount Minerals have also used whole system strategies to produce breakthrough business results. Just as the Internet is making it possible to amplify and mobilize human minds in the aggregate, system-in-the-room approaches are

Table 3. AI Success Factors for Innovation and System Change.

Broad enrollment: System-in-the-room configuration of people

Innovation inspired by collaboration and co-creation
Leverages strengths and maintains continuity with the best of the past

Big change fast

Accomplishes months of work in three to five days
Action focus around clear task
Creates momentum for implementation

Breakthrough results

Lens of sustainability opens new possibilities
Design “rapid prototypes”
Honoring differences and common ground

proving to be perhaps the least understood yet most revolutionary part of sustainability strategy execution (Table 3).

From Deficit-Based to Strength-Based Thinking

For many executives, engaging external stakeholders in real-time innovation is a formula for disaster. Ever since Rachael Carson’s publication of *Silent Spring*, external voices have grown in their allegations and assaults on business, igniting a tide of rising expectations and putting executives in a permanently defensive mode. In subsequent decades, the Internet increased the arsenal of weapons available to activists who learned to mobilize thousands of NGOs with the click of a button or an incendiary YouTube video. The result has been widespread resistance in the C-suite to the idea of inviting NGOs and other stakeholders into the real-time crafting of business strategy involving sensitive issues related to the environment and human health.

It is here that sustainability business strategy is taking a page from the field of organization development and the science of human strengths, where the conditions supporting (or destroying) our capacities for collaborative innovation have been well documented (Cooperrider, Whitney, & Stavros, 2008). What has emerged is the realization that small shifts in the ratio of deficit-based thinking (DBT) in relation to strength-based approaches can make a huge difference in outcomes. DBT is hard-wired in problem-solving tools of the industrial era: “gap analysis,” “organizational diagnosis,” “threat analysis,” and the belief that organizations simply would not change until a burning platform gets people’s attention. DBT produces a demoralizing effect: it has been shown to create lowered aspiration, more

separation across silos, increased fear and mistrust, more back room politics, and generate more hierarchy.

By contrast, strength-based approaches allow people to discover the best in themselves, their organizations and shared experiences. Efforts to design a “positive core” (the past, present, and future capacities of the company and its stakeholders) can lead to a vision and pathway capable of integrating sustainability issues that are often excluded from consideration in DBT approaches. Peter Drucker summarized it best in a 2003 interview with one of us (David Cooperrider) when he said: “The task of leadership is to create an alignment of strengths ... making a system’s weaknesses irrelevant.”

Appreciative Inquiry Combining Whole System and Strength-Based Change

The AI method responds directly to the need for whole system strength-based change. It suggests that collaboration and innovation, two sides of the same coin, are interdependently and mutually propelled to maximum performance not only by eliminating DBT but also by providing the tools, methods, and structures for whole systems to create at least a 3:1 ratio of strength-based analysis of hidden assets, opportunities, and aspirations in relation to conventional deficit-based trajectories. It lifts up and catalogues positive deviations from the norm, identifies sources of hidden strength and reserve, and uses this output to paint a picture of a desirable strategic intent. Minds are broadened, collective imagination builds, and relationships open up, connecting strength to strength. As shown in Fig. 4, AI does this through a systematic process of discovery, dream, design, and deployment. Its power is geometrically increased when done in the whole-system-in-the-room format.

The Appreciative Inquiry Summits engage large groups in the AI methodology for whole system strength-based change. The Summits typically involve 60–1000 or more participants over three to five days. They can include senior executives, line managers, frontline employees, customers, suppliers, NGOs, regulators, and other stakeholders who help represent the whole system.

An integral component of AI is design thinking (Avital, Boland, & Cooperrider, 2007). Design thinking is not based on reasoning using assumptions and knowledge of what has worked in the past, but on imagining what could be possible. The focus is on strength-based creation, starting with an open-ended question, “What might be?” P&G’s CEO A. G. Lafley (2008) contrasts conventional and design thinking: “Business schools tend to focus on inductive thinking (based on directly observable facts) and

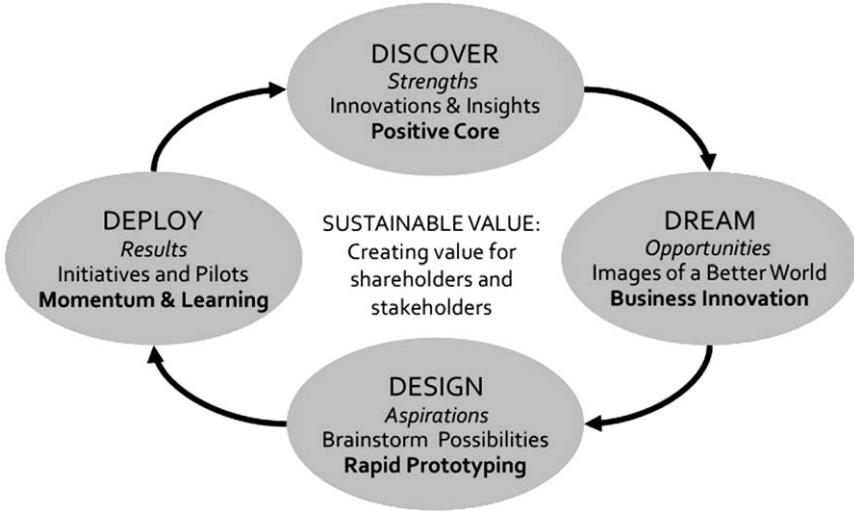


Fig. 4. Appreciative Inquiry's 4D Cycle.

deductive thinking (logic and analysis, typically based on past evidence). Design schools emphasize abductive thinking – imagining what could be possible. This new thinking approach helps us challenge assumed constraints and add to ideas, versus discouraging them.”

Designers have developed skills for responding to complex situations creatively and holistically. Their value is multiplied many fold when stakeholders are introduced. Design thinking for sustainable value taps into knowledge across the organization and its life cycle value chain partners. It allows for the emergence of innovation projects from collaborative efforts to meet system-wide needs. Rather than analyze fragmented problems in order to take actions that are planned by a few executives in control, solutions are co-created from the collaboration of stakeholders and line managers who, taken together, can give voice to the entire business system (Cooperrider, 2008).

As the strategy process moves from designing the strategy pathway to capturing the value, it becomes necessary to stage and prioritize innovation projects. Companies find it helpful to analyze sustainable value projects by their degree of stakeholder impact and their ROIC. Metrics such as CO₂ emissions per unit of sale and wastewater reuse rates help assess stakeholder impact changes along the life cycle value chain. Business value creation from reducing the negative impacts and increasing positive ones are quantified.

Only those projects that have commensurate value for their degree of difficulty are included. Projects can be staged according to “quick wins,” innovations that require larger investments and produce larger benefits, and “game change” that typically requires the cooperation of many stakeholders to redesign the life cycle value chain and underlying business models.

Steps 6 and 7: Organizational Learning and Capacity Building

Stakeholder collaboration plays a critical role in the formulation and execution of sustainable value. It remains critical in organizational learning and capacity building, where the challenge is to align external stakeholders with the company’s projects in a way that allows for co-learning and co-development. In ongoing partnerships with government bodies and NGOs, companies have access to specialized knowledge about environmental and social performance that they simply do not have internally.

As sustainability initiatives were rolled out through sustainable value networks, learning at Wal-Mart relied heavily on ongoing partnership with a few key NGOs such as Conservation International, Environmental Defense, and the Sustainable Packaging Coalition. In this phase, the strength-based whole system approach of AI continues to powerfully serve the organization. For complex multistakeholder challenges such as the development and dissemination of a sustainability scorecard that could be used across multiple merchandize groups, Wal-Mart used AI to affect rapid, scalable change.

In Steps 6 and 7, the company transitions from measuring and managing individual projects to assessing organizational performance. An inventory of projects can serve cross-functional learning. Sustainable value brand enhancement, improved customer mix, and other top-line performance improvements can provide quantification of company-wide value creation. The relationship with government authorities and regulatory bodies allows the company to continue shaping sustainability regulations in its favor.

Sustainable value must be continuously communicated internally and externally. As part of this communication effort, companies can develop separate sustainability reports or, better yet, integrate content about sustainable value into the annual report. More importantly, C-suite executives must be seen to talk and walk sustainable value in everything they do. Ultimately, sustainability must become a reflexive part of every employee’s decision-making, much as quality control did for industry leaders decades ago.

CONCLUSION

Sustainable value is a way to reframe sustainability as business opportunity, turning environmental, social, and public health risks into drivers of innovation, and a new inimitable source of competitive advantage. AI is an innovative and transformational methodology that is revolutionizing the way organizations address change by engaging the whole system (company *and* stakeholders) and tapping into one of its most valuable resources – its strengths, its assets, and its capacity to innovate. AI invites all stakeholder groups to build a collaborative approach to decision-making. It is a process of inquiry that challenges the organization and its stakeholders to maximize the potential for system-wide change. Combining sustainable value and AI results in engagement by all stakeholders to collaboratively develop and execute successful sustainability business strategies.

ACKNOWLEDGMENT

The authors would like to thank Bruce Bendix and Sayan Chatterjee for their contributions to this chapter.

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DESIGNING A POSITIVE IMAGE: CORPORATE BRANDING AND SOCIAL RESPONSIBILITY

Mary Jo Hatch and Philip H. Mirvis

ABSTRACT

Corporate branding has broadened its reach to include delivering the brand's promise to the full range of organizational stakeholders both inside and outside the firm. In turn, new approaches to corporate social responsibility (CSR), involving employee, community, and stakeholder engagement, dovetail neatly with this idea of enterprise branding. This chapter will look, first, at the connections between corporate branding and CSR, and then at how design thinking and processes can be applied to join the two. Next it examines, from our firsthand experience, how several global companies linked the two to (1) rebrand their relationship to society or (2) repurpose their CSR efforts. All the firms have taken what seem to be serious brand-driven moves to create sustainable value for their businesses and society. The chapter concludes with a look at how corporate branding and CSR can be applied to organization design, product innovation, and the transformation of an organization.

Jeffrey Swartz, CEO of Timberland, got his feet wet in corporate social responsibility (CSR) in the early 1990s when he linked his company's brand

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 35–55

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003007

with City Year by donating 50 pairs of work boots for its young adults working with youth in after-school programs, summer camps, and service projects. City Year, a community-based nonprofit organization founded by two Harvard Law graduates, recruits young adults (aged 17 to 24) who pledge themselves to a year-long commitment of service in a selected city or community. Its aims are not only to provide service to communities, but also to develop young people's leadership skills and civic activism. Swartz saw these same benefits accrue to his company and to his employees through the Timberland–City Year partnership.

So why not reach farther – with the brand and CSR? Timberland subsequently decided to take its “boots, brand, and beliefs” directly into the market and call its consumers to social action. Timberland, together with City Year, today activates 10,000 consumers and retail partners in over 25 countries in annual service days – one each spring on Earth Day and one each fall entitled “Serv-a-palooza.” Its CSR scorecard details annual increases in employee volunteerism and consumers' involvement in service. In appreciation for the partnership, it also houses its own City Year site, home base to 24 volunteers, in its corporate headquarters in New Hampshire.

The efforts of Timberland with City Year illustrate the potential of linking corporate branding with social responsibility. Along with adding brand value to a company and social value to communities, this link can also spur innovation in how companies engage society and do business. In the past few years, to illustrate, Timberland has facilitated the creation of “green teams” among its employees and community groups, begun “eco-labeling” on its product sourcing, sewing, and ingredients, launched a “voices of challenge” website to promote multistakeholder dialogue on its efforts, and begun quarterly reporting on its social-and-environmental performance. The question at hand: What does it take to develop this kind of synergy between branding and CSR?

For the past several years we have been studying and working with select companies, and their partners, in the areas of corporate branding (Hatch & Schultz, 2008) and social responsibility (Mirvis & Googins, 2006). Several have sought to integrate branding and CSR into everything from their organization structures, to product designs and marketing, to the ways they engage with external stakeholders and employees. In so doing, they began to project a positive, pro-social, and pro-environmental corporate image into the marketplace. And, some took complementary steps to nourish a corporate culture and identity expressive of these themes.

The firms examined in this chapter (GE, IBM, J&J, and Unilever) were not simply implementing changes in their supply chains, marketing, communications, or employee involvement programs; rather they were undertaking

an enterprise-wide makeover of their business models that involved rebranding “who we are” and redefining the meaning of social responsibility in their companies. At core were questions of corporate purpose along with external image and internal identity. To understand the scope of these changes, consider some broader conceptions of corporate branding and social responsibility that help to frame what these companies were up to.

A BROADER VIEW OF BRANDING AND CSR

Branding, once the province of marketing and corporate communication, is now a central concern of business management and strategy. Hatch and Schultz (2008) contend that market branding has grown from an activity to establish and nurture relationships between customers and products into corporate branding, a management discipline concerned with delivering the brand’s promise to the full range of organizational stakeholders both inside and outside the firm. This shifts attention from the company as the locus of branding to its activation in the web of relationships between a business and its stakeholders. Hatch and Schultz (2009) refer to this new orientation as *enterprise branding*. Enterprise branding encompasses the full portfolio of corporate interactions in society, not only through marketing and communication, but also in its business operation and engagement with social and environmental issues – including activities traditionally classified and managed as part of a firm’s CSR remit. Ultimately, the shift implicates branding in a firm’s business model and the management practices that support it.

In turn, there is emerging a “business-based, brand-relevant” approach to CSR whereby companies address social and environmental issues through their core business (Googins, Mirvis, & Rochlin, 2007). This too engages the full set of business functions in creating shared value for business and society. It also enlists stakeholders in shaping actions that make commercial sense, enhance a firm’s social performance, and reduce its environmental footprint. In essence, this approach exemplifies *enterprise-wide CSR*. With this general background on branding and CSR, consider next how design figures into their linkage.

Design Considerations

In his “theory of design,” John Christopher Jones (1992) opines: “The underlying difficulty of studying design is that it is concerned with the whole

of something and ‘the whole’ is not an objective reality – it is a fluctuating scheme” This is illustrated neatly in the case of corporate brands that begin their lives as statements made by companies on behalf of themselves but, if they succeed in engaging stakeholders, are transmuted by those stakeholders’ interpretations into expressions, not of the brand per se, but of stakeholders’ values, ideas, and identities (Hatch, 2009). The difficulty in unpacking this seemingly alchemical activity arises from the fact that the meaning of a brand is distributed among its stakeholders and is constantly being transfigured by their experiences with it.

That said, the companies in these cases certainly had intentions in linking their brand to CSR and used design thinking and a design process to effect that link. Consider four aspects of design that informed the actions taken by companies and influenced their various stakeholders:

- *Holistic thinking.* A “whole systems” perspective is very much a part of business thinking today whether in the design of green buildings (Stang & Hawthorne, 2005), product innovations (Lafley & Charan, 2008), or the corporation itself (Kelly & White, 2007). In joining branding and CSR, this means taking a holistic perspective on the design of actions or artifacts that, in a commercial context, considers their sourcing, production, and uses. Cradle-to-cradle considerations exemplify holistic design (McDonough & Braungart, 2002). This approach is embodied in “green” carpet maker Interface’s corporate brand and increasingly so for Timberland.
- *Multiple logics and criteria.* Designer Dev Patnaik (2009) makes a case for “hybrid thinking” in design which he defines as the “conscious blending of different fields of thought to discover and develop opportunities that were previously unseen by the status quo.” Scientific logic is of course integral to design thinking; hence, criteria such as functionality and utility are of prime concern in commercial creations. At the same time, creativity and imagination are also called for and with corporate brands aimed at “doing good,” an important consideration is how they emotional engage stakeholders and what they mean to them.

This introduces aesthetics and spirituality into design and calls for judging corporate engagement with society with reference to its truth, beauty, and goodness. These can be represented in evaluative criteria such as “Is it authentic?” and “Is it appealing?” and “Is it worthwhile?” Our sense is that drawing on multiple intelligences (IQ, EQ, plus AQ and SQ) and commensurate criteria enables a firm to better integrate the material expressions and symbolic meaning of longstanding corporate brands. These can also help companies take account of new expectations

for and, in many instances, sensible suspicions about socially responsible actions by business.

- *Participatory process.* Jones (1992) writes that design involves “listening to users, and to the world, in such a way that the new design becomes well fitted to people and to circumstances.” The companies examined here all engaged with multiple stakeholders, including critics, and involved them proactively or as partners in developing innovative brand strategies and CSR programs. This interaction is emblematic of what is called a participatory design process. Of equal interest is the co-creative potential of this process: where brand and CSR designs do not simply evidence inputs from stakeholders but also new combinations of their ideas and interests.
- *Positive intention.* There are those who argue that corporate spending on social welfare or environmental protection should be motivated by eleemosynary interests and be “pure” of any profitable intent. The problem of course is that such charity represents a miniscule amount of corporate investment and that companies have their biggest impact on society through their commercial activity. “Triple bottom-line” goals are one means of shaping how a company can design its commercial actions in line with a “do good/do well” approach to branding and CSR.

Beyond this, Whitney (2006) calls for “designing organizations as if life matters.” This appreciative stance shifts attention from triple bottom-line tradeoffs to how designers might create new language, communications, relationships, and consciousness. In the present context, this means that designs linking branding and CSR have the potential to create a field across the enterprise that connects companies and stakeholders in new and positive ways.

Be forewarned, however, not to be “taken in” by the good works that companies might claim for themselves on behalf of their brands and CSR initiatives. Examples of firms using “greenwashing” to deflect attention away from social- and environmental failings or spending visibly on causes to distract from ethical lapses and misdeeds are legion. And design, of itself, is no panacea: misleading product claims (healthy candy cereal), bogus packaging (eco-bottled water), crafty marketing campaigns (buy this crap, fight breast cancer!), and gauzy green adverts (our products do not, but we do care for the planet!) can, after all, be the work of skilled pettifoggers (Enron was corporate citizen of the year) or simply be well-designed deceptions.

The companies studied here, to differing degrees, used holistic thinking, multiple logics, and participatory design to link their brand and CSR programs to the ways they do business. This extends the reach of corporate

brands into areas that have heretofore been considered philanthropic. Hence our first consideration is: What does CSR add to corporate branding? It also brings commitments to do good from the periphery into the core purpose of the business. A second consideration, then, is: What does corporate branding add to CSR?

ADDING CSR TO BRANDING

Business executives today are confronted with a paradox in listening to their stakeholders. On the one hand, the public holds business leaders in low regard, mistrusts what they say and the motives behind what they do, and sees big companies as too powerful and far more interested in profits than in the welfare of people or the health of the planet. On the other hand, the public has high expectations that business should behave more responsibly, concern itself with environmental sustainability, use its resources and talents to improve society, and address itself to social issues as broad as the gap between rich and poor and as specific as the spread of HIV/AIDS (Globescan, 2008).

The question at hand is what companies are doing in response to this new operating environment. Frankly, the majority has taken a piecemeal approach – launching a few green initiatives – amping up employee volunteerism, or demonstrating their concern for society with charitable gifts and associated public relations campaigns. Somewhat further along, other firms have created formal CSR functions, embarked on social reporting, and attended to social- and environmental issues responsibly, while otherwise going about their business as usual. Only a few have sought to embed CSR firmly into their corporate branding or rebranding as a socially innovative firm.

How does design thinking figure in? Because CSR provides motivating forces internally, and makes the brand appealing externally, the design challenge is to find a theme, and develop material (e.g., socially relevant programs, products, services) and symbolic (e.g., socially meaningful messages, experiences) manifestations of it, that resonate within a company and with its many stakeholders. For increasing numbers of stakeholders, CSR brings new relevance to brands that can be linked to the bottom-line by attracting better talent, suppliers and other partners; inspiring employees and brand fans; and commanding the loyalty of customers, investors and the general public. Consider, then, how CSR informed the design of new corporate brands for two firms that today promise to, respectively, make the planet green and make a better world.

GE's Ecomagination

General Electric exemplifies a company that connects its corporate brand to CSR through its *ecomagination* thrust. No longer aiming to generically “bring good things to life,” *ecomagination* aims to transform GE from the Welch-era finance-based firm back into the innovation-driven company envisioned by its founder Thomas A. Edison. GE’s current commercial ambitions are most visible in its doubling of R&D spending on environmentally friendly technologies; the hiring of thousands of PhDs; new research projects in the fields of nanotechnology, hydrogen power, photo batteries and so on; plus creation of new laboratories in Munich, Shanghai, and Bangalore. These are not new business lines for GE, but what is new is that Immelt is basing his company’s growth strategy on greening them.

Design Process: Bringing the Outside In

How did the company incorporate CSR into its brand? One method involved bringing the outside in – engaging not only customers but a full range of corporate stakeholders in a conversation about what a company means to them. In its design process, GE actively “listened” to its stakeholders. Before launching its green strategy, GE invited its big customers to two-day sessions where they envisioned life in 2015 and what they would want from GE. The combination of high energy prices and expected limits on greenhouse gas emissions, plus booming energy demand from Asian economies and consumer preferences for cleaner technology translated into a spectacular business opportunity for GE. GE expanded its stakeholder engagements from 2006 through 2010 in major cities around the globe and added to its roster “material” issues of concern to society and the business.

It also established an Ecomagination Advisory Council, of six to eight members, from NGOs, think tanks, and academe (e.g., Pew Center on Global Climate Change, Climate Change Capital, World Resources Institute, William McDonough and Partners, MIT, and others). This council provides updates on climate change and environmental conditions and offers input on industry trends, technology developments, and innovative practices. It also reviews GE’s environmental performance.

Positive Messaging: A Green-is-Gold Story

On the communication end, GE’s corporate messaging is almost wholly driven by environmental themes. The new story connects GE’s longstanding reputation as an innovator (imagine) with new aspirations to be an eco-business. Surveys show that many business executives consider environmental

issues a “risk” for their firms. By comparison, GE saw a market for its eco-warens and its new message is that our products help you – the corporate (jet engines) and individual (lightbulbs) consumer – make your world green.

The enterprise has an expansive ecomagination website that emphasizes its investments in green technologies and provides wide-ranging coverage of issues and reports pertaining to climate change, energy use, and the health of the planet. GE also issues an annual report on the company’s progress in “investing and delivering” on ecomagination. For the past few years, it has also hosted web casts to discuss the report, featuring top executives and external thought leaders from business, environmental, and community groups.

Design Questions: VCI Alignment

While using CSR to redesign corporate rebranding has the potential to update a firm’s image, give its brand more appeal and relevance to a broader range of stakeholders, and refocus strategy and operations toward sustainable value, it is not without peril. Hatch and Schultz (2001) posit that successful corporate branding demands alignment between (1) a company’s strategic *vision*, (2) its organizational *culture*, and (3) stakeholder *images* of the firm. They term this VCI alignment.

Turning to the case at hand, there are many who question GE’s authenticity and motivations with ecomagination. After all, the company, when former CEO Jack Welch was running its chemical business, dumped PCBs into the Hudson River and then fought lawsuits to pay for the cleanup with a disingenuous public relations campaign. Today, GE’s website and public pronouncements, including print media and emotive advertisements, promote clean air, fresh water, and green energy brought to you via clean coal burning, desalinization, and wind turbine technologies made by GE. But elements of suspected greenwashing have created image problems for GE among critics.

As an example, the company was recently taken to task over a TV spot that featured miners producing clean coal to the tune of “Sixteen Tons” by Merle Travis. Yes GE had enlisted a credible stakeholder, the World Resources Council, as a partner in its clean coal campaign. But savvy listeners knew that the song had been lifted out of context and actually lamented a coal miner’s plight. To them, GE was no real friend of the miner. Furthermore, many question whether coal can ever be considered “clean.”

Certainly, ecomagination is central to GE’s strategy and proving a moneymaker. But is it repositioning GE as a green leader? On these counts, *Newsweek’s* (2009) rankings of the environmental performance of America’s

500 largest corporations puts GE in first place in its industry and second overall when it comes to its green reputation – public perceptions of environmentalism. This is one sign that the messaging is working. But adding weight to doubts about what GE is up to, consider Immelt’s reply to this question from a business journalist: “So is ecomagination just a sales pitch? “It’s primarily that” GE’s CEO confessed, “In its essence it’s a way to sell more products and services” (Fisher, 2005). Finally, internal identity issues have been raised by leading the brand with CSR. GE is a conglomerate and many of its businesses are not especially green, as the *Newsweek* ratings indicate.

IBM: Innovation that Matters – For the World

Unlike GE, IBM first connected its brand and CSR efforts by focusing on its corporate culture. The problem in IBM was that its values went south along with its business fortunes from the late 1980s to the early 1990s. In the mid-1990s, Lew Gerstner transformed the company from a hardware manufacturer to service business by closing down its personal computer and software lines and acquiring Lotus technologies and the consulting arm of PricewaterhouseCoopers. Sam Palmisano, Gerstner’s successor in 2002, focused on rebuilding IBM’s culture and reviving its values.

Decision Process: Bringing the Inside Out

This thrust began with an “online jam” that had tens of thousands of IBMers participate in brainstorming, debate, and follow-up planning on the direction of the company. Two years later, the company held a “values jam” that consisted of 72 hours of brainstorming that established three IBM core values: dedication to every client’s success; innovation that matters – for the company and the world; and trust and personal responsibility in all relationships. Since then, the company has created a site called ThinkPlace for ongoing e-conversations about culture and the business.

IBM has a long heritage of innovation in CSR. Under Gerstner, the company launched 25 demonstration projects in U.S. school districts during the 1990s through its signature social campaign “Reinventing Education.” Building on its experience with applying innovative technology to education, the company expanded its attention to other societal challenges like health care and the environment and committed itself broadly to “innovation that matters – for the company and for the world.”

Bringing CSR into the Business

In rebranding itself in this way, new work processes were designed and opportunities emerged for cross-fertilization between IBM's commercial and social efforts. To illustrate: A team of IBMers in Bosnia after the Balkan conflict found that relief workers from the International Rescue Committee, CARE, Doctors Without Borders, and other NGOs could not communicate across one another's computing systems without open sourcing tools. Meanwhile, its commercial teams were facing similar problems with inter-connectivity in business. R&D specialists, engineers, and business process consultants, operating in these different spheres, found that they could trade ideas and solutions.

A design insight was born: IBM's on-demand community and commercial efforts were part and parcel of an overall business strategy. Making the point, Palmisano said that CSR was not something unique or relevant only to "crown jewels" like education. To the contrary he said: "It's who we are; it's how we do business; its part of our values; it's in our cultural DNA."

In the past several years, IBM has melded its brand and CSR interests in innovative technologies, like grid computing, social networking, and virtual worlds, and applied them to problems faced in health care, transportation, the environment, and urban life. It has hosted online jams centered on innovations for customers, suppliers, myriad other stakeholders, and the public at large. And it has also created an on-demand volunteer community engaging its employees. All of this, Palmisano says, is "a matter of living by your values and winning with your values."

Design Questions: Winning Over Stakeholders

IBM continues to expand its social innovativeness: through its corporate service corps, IBM sends teams of their most talented employees on voluntary global assignments, where they work for one month in NGOs, small businesses, and government agencies in developing-and-emerging markets in Asia, Africa, and Latin America. As of now, over 500 IBMers serve annually in over 30 countries. This program has linked the brand and CSR to two specific goals: (1) develop the cultural intelligence and leadership skills of the next generation of IBM's leaders and (2) open new relationships with leaders in countries where IBM expects to expand its business. Early returns show its strong alignment with the company's strategic vision and internal culture (cf., Mirvis, Thompson, & Marquis, 2010).

Where the brand-CSR linkage has not yet paid off is in IBM's external image. For example, on the Reputation Institute's CSR Index 2009 ranking of public attitudes about corporations in the United States (BCCCC, 2008,

2009), IBM (ranked 30th) scored behind GE (22nd), and industry leaders Microsoft, Google, and Cisco despite media plaudits for its corporate service corps.

These examples from GE and IBM show some of the limits of adding CSR to the corporate brand. Plainly, the creative thinkers and operational implementers in both companies could not reconcile all of their VCI linkages in what seem to be serious brand-driven moves toward the creation of sustainable value for the businesses and society. How about the other way around – when CSR is built around a brand?

ADDING BRANDING TO CSR

Issues of sustainability and social responsibility have moved center stage for many companies precisely because stakeholders consider them important. In our view, CSR projects need to be guided by the corporate brand if they are to have any impact inside the firm. By providing not only criteria for choosing among the log jam of opportunities to do good in the world, but also inspiration for how to best deliver the choices made (e.g., in ways that express brand style, or make use of competencies for which the company is known), branding brings CSR closer to the core of the business. When the brand and CSR are structurally linked within an organization and symbolically linked in the images of stakeholders externally, joint activities will begin to produce ideas for new products, services, and other innovations that make sense from multiple points of view.

Since a brand reflects and communicates the identity of the organization, its guidance in selecting projects will ensure that the choices made are understandable to anyone familiar with the brand. In addition, the combination of multiple brand relevant CSR projects will start to paint a broad picture of the brand's relationship to the larger world that is coherent and meaningful to internal and external stakeholders alike. This will contribute to the enhanced reputation of the brand among those who believe organizations have responsibility to society. With the help of design thinking, the integration of these fields of endeavor can be sped up and the integration itself made more compelling. Let us see this proposition at work in two other cases.

Johnson and Johnson's Campaign for Nursing's Future

The top line of Johnson and Johnson's Credo states: "We believe our first responsibility is to the doctors, nurses and patients, to mothers and fathers

and all others who use our products and services.” In a review of its service to these “top line” stakeholders, J&J asked doctors and nurses about their most vexing problems. When they repeatedly heard “the shortage of nurses,” the company decided to get involved. Growing demands for healthcare services due to shifting demographics, combined with lower enrollment and retention rates and lack of educational opportunities, had created a critical shortage of nurses. In February 2002, working in cooperation with professional nursing organizations, schools, hospitals, and other healthcare groups, they launched the Johnson and Johnson Campaign for Nursing’s Future. According to the website, it is a “multi-year, \$50-million national campaign designed to enhance the image of the nursing profession, recruit new nurses and nurse faculty, and help retain nurses currently in the profession.”

Design Intent: Leverage the Brand

Johnson and Johnson decided that they would use their skills and resources to create public awareness, not of the shortage, but of the value of nursing to society and of the profession to its members. Since J&J is a branding powerhouse, one of their first activities involved treating the nursing profession as a brand that they then promoted with a series of ads featuring real nurses telling the country about what it means to be a nurse. Johnson and Johnson is only referenced at the end of each commercial with a voiceover saying simply: “This has been a message of caring from Johnson and Johnson,” more to add weight to the message than to claim credit.

In addition to advertising, J&J’s cooperation with other organizations involved a range of different activities including recruiting efforts, scholarships, nursing ambassador programs, leadership and communication training for newly promoted nurse managers, mentoring programs for new nurses, fundraising galas, and media events. Services provided can be accessed through two websites: discovernursing.com and the new campaign-for nursing.com. [Discovernursing.com](http://discovernursing.com) contains searchable links to hundreds of nursing scholarships and more than 2,000 accredited nursing educational programs, funding resources including tips on finding loans and scholarships, and information on more than 100 specialties and career paths for those with nursing degrees.

Design Criteria: Win–Win

J&J uses its brand tracking and reputation measurement tools to assess the Campaign’s impact. At the launch in 2002, J&J defined three success criteria to enhance the image of the nursing profession, to recruit more nurses and

nurse educators, and to retain them. Since then the company has found a significant increase in the public's ranking of nursing as a career choice and a whopping increase in the number of 18–24 year olds who think of it as a good career choice. Recruitment and retention rates in the nursing profession are substantially improved, too.

In relation to corporate branding, the Johnson and Johnson Campaign for Nursing's Future draws upon its Credo to help solve a health care crisis in the United States. Having met with so much success, J&J now plans to expand the Campaign to other countries that face nursing shortages. There is little doubt that the success of the Campaign is one reason the company enjoys its award-winning reputation. According to the Reputation Institute, from 1999 when it first made its annual reputation assessment through 2009, the general public has regarded J&J as one of the top two most admired companies in the United States. In 2008 and 2009, the company also ranked among the top 10 in ratings of its CSR (BCCCC, 2008).

Design Questions: Limited Scope

The corporate brand is a powerful unifying thrust that can give a company's CSR agenda more cohesion and impact. Our critique with J&J's linking of brand and CSR is the absence of a holistic perspective. Certainly, the nursing campaign has built public support for and pride within the company, not to mention within the field of nursing. But to business units built around research and drug therapies, the baby image so often used in J&J corporate ads is not wholly representative of what the company does and is. Moreover, by its own account, J&J has a smorgasbord of CSR initiatives, many based in specific locations or business units. This limits their enterprise wide focus and, to a degree, their impact on a full range of stakeholders.

This may be endemic to any corporate effort to add branding to a diverse portfolio of CSR programs. But it also allows for local adaptation. Hatch (2009) argues that a brand is both its statement and its realization in the meanings others make of and with it. As a generalized statement it refers to all who are or will be engaged with the brand. But as a localized and situated meaning for each individual involved, it produces a highly personal relationship between each stakeholder and the brand. It is important to recognize that, while the interests of the firm that stands behind a brand may be fully served by generalizations, the brand actually lives in the enactments that occur locally, beyond the control (but not the influence) of the corporation. The advantages and disadvantages of this are illustrated vividly in the context of our final case to consider: Unilever.

Unilever: Bringing Vitality to Life

By almost any criterion or measure, Unilever qualifies as a “good” company. Its consumers know the global company with operations in 150 countries, through its home-and-personal care brands such as Dove, Lifebuoy, Sunsilk, and Vaseline, or when sipping Lipton teas or preparing Knorr foods. Unilever is also well known for its historic concern for employees and communities, for its environmental practices, and for its efforts to promote human welfare in developing countries.

A few years ago, Unilever scanned its world and reconsidered its role in society. Over 200 executives analyzed the trend toward fair trade products, problems of nutrition, the company’s impact on air-and-water, and the like. Many of the themes raised – the increased scrutiny of corporations, NGO activism, global warming, rich–poor gaps, new health-living consumer trends, and myriad threats to a firm’s “license to operate” – are familiar to any global business. Two were specifically material to Unilever.

The first concerned its access to and use of natural resources. As an example, over two-thirds of the company’s raw materials come from agriculture. At a 4 percent growth rate, that would mean the company would use, over five years, 20 percent more raw material. That would translate, in turn, into 20 percent more pesticides on farms, 20 percent more packaging and associated waste and litter, 20 percent more water needed to grow crops, and 20 percent more water used by consumers to cook, wash, or clean with company products.

A second set of threats involves consumption. Obesity, as one example, is widespread in the United States and Europe and growing in India, China, and elsewhere. As a result, Type II diabetes is projected to reach pandemic proportions – from roughly 180 million cases today to 370 million by 2030. At the same time, public attitudes have shifted dramatically about the “causes” of obesity. Blame has shifted from consumers with “bad habits” to packaged-food (and of course fast food) purveyors.

But the scan also documented how new eating and purchasing trends also provide opportunities for Unilever. Particularly in the West, but growing worldwide, there is a move toward healthy and sustainable consumption. This is reflected in preferences for organic foods and clothing (a market growing 20 percent annually), for fair trade coffee and chocolate (over 70 percent annually), and for local sourcing of agricultural produce. There is also a move toward “ethical” consumerism, as evidenced by an increase in cause-related products, as well as interest in a brand’s connection to social responsibility.

The design challenge arose: could Unilever move from being a good corporate citizen to using its business acumen to access these markets? GE and IBM had to “revision” their identities away from the dominant practices of prior CEOs (Welch at GE; Akers at IBM). Unilever, by comparison, had only to resurrect its founding ideals. One executive captured the inspiration about Unilever’s social responsibilities thusly: “It’s who we are. And the way we do business It’s in our genes.”

Design Process: Resurrecting Company Heritage

Unilever’s historic commitment to society traces to its founder, William Hesketh Lever, who, in the late 1800s, created a company village offering housing to workers at reasonable rents and introduced the then-unheard-of eight-hour workday, sickness benefits, holiday pay, and pensions for both male and female employees. The challenge, as another executive put it, was “to take Lever’s heritage and move it into the new world.”

The research team found that Unilever had a plethora of citizenship initiatives but no consistent strategic thrust behind them. “Too many unaligned programs and messages,” reported one leader. “CSR has not been ‘interiorized’ in the company,” said another. This is common to many companies, including those that rate highly on citizenship rankings and scorecards. They have “islands of excellence” throughout the firm but not much pulls their efforts together. Many spoke of the need for a “common denominator” or a “framework” to integrate things, and urged: “We need everybody thinking about this.”

Bringing the Business to CSR

Unilever had developed a new corporate brand identity that would integrate its home-and-personal-care and food-and-beverage businesses beneath a corporate umbrella. The new corporate mission would be: “To add vitality to life by meeting everyday needs for nutrition, hygiene, and personal care with brands that help people feel good, look good, and get more out of life.” In recognition of Unilever’s historic commitment to and contemporary strengths in its relationships to society, it was proposed that the company reinvent its CSR thrust through its new vitality mission – in messaging and deeds. In a contentious move, the decision was made to put Unilever’s new logo on product packaging, and let consumers know the corporation behind the brands they selected in the marketplace.

One of the first orders of business was to be more proactive on issues around nutrition. In short order, nearly 20,000 recipes were put through a nutrition profile model and subsequently reformulated to reduce trans fat,

saturated fats, sugar, and salts – amounting to over 30,000 tons worth in three years, according to the latest company reports. In addition, Unilever began to put a “Healthy Choices” logo on products to help consumers identify foods that have limited amounts of these ingredients.

On the growth side, Unilever, like nearly all consumer goods companies, has found its markets saturated in the United States and Europe. The lion’s share of its future growth comes from developing and emerging (D&E) markets. Its “base of the pyramid” market development strategies include the sale of iodized salt, which addresses a dietary deficiency common among the poor, and a campaign for hand washing in which its Lifebuoy soap aims to reduce diarrheal disease. In each instance, the company devised new local supply chains to make products more affordable and developed distribution channels that turned underprivileged women into village-level entrepreneurs.

Looking to add social and health content to its brands, Unilever’s new tea products feature their antioxidant benefits and at the same time the company dramatically reduced the sugar content of its iced tea. It also has on offer a new smoothie beverage made from concentrated vegetables and fruit juices. And in partnership with UNICEF, it launched a “kid’s nutrition” campaign that includes research on the impact of saturated fats on children’s physical and mental performance, conferences on improving youth eating patterns and preferences, and development of healthy breakfast foods aimed at fortifying the diet of poor kids.

Design Limits: Local Resistance

The business environment today is complex and multifaceted, with myriad threats and opportunities whose sources are often ambiguous and impact uncertain. Potential responses necessitate tradeoffs and their likelihood of success is inestimable. Meanwhile, the challenges posed multiply as a firm, its competitors, and a field of surrounding interests and actors make strategic moves.

Designers know that it is difficult to meet multiple stakeholders’ interests, or to negotiate competing criteria of, say, fit versus function versus fashion, or to effect tradeoffs between quality, costs, and time-to-completion, whether their domain is architecture, product design, or construction. The same of course applies to driving CSR through a corporate brand.

Take, for example, one of the most visible of Unilever’s vitality initiatives: the Dove soap “inner beauty” campaign. Dove’s public message about inner beauty has been conveyed through advertisements showing “real women

Table 1. Linking Branding and CSR: Selected Examples.

Company	New Brand Message	CSR Expression	Strengths	Weaknesses
General Electric	Ecomagination: greening	Business model with energy saving products	Central to growth strategy	Perceptions of greenwashing; tie to culture
IBM	Innovation that matters: social/environmental	Portfolio of socio-commercial innovations	Builds on open sourcing and IBM's global integration	Not resonating with reputation
J&J	Committed to health and future	Nursing campaign	Signature program: win/win	Limited relevance to product brands and businesses
Unilever	Vitality: healthy foods and personal care products	Product improvements and social campaigns	Repositions company in marketplace	Contradictions: Walk the talk?

have curves” and a film that shows how fashion models images are distorted to conform to an idealized but unattainable type. It is carried to schools around the world in a complementary program promoting young women’s self-esteem.

While this is a powerful message for women, Unilever also sells Axe deodorants and soaps aimed at young men. Advertisements for this product line emphasize how Axe products generate sex appeal and lead women, all portrayed as young, thin, and very attractive, to wantonly pursue men. Here the company is speaking out of both sides of its mouth and seemingly undermining its CSR message. Some argue, of course, that vitality for young men equals sex appeal, but the imagery associated with and product promotion of Axe versus Dove could not be more contradictory.

To take a holistic approach to the design of branding and CSR and align them to the life blood of a company means taking account of vision, culture, and image in fashioning their linkage. It is not an easy feat. Table 1 summarizes the branding and CSR linkages in the four companies studied and selected strengths and weaknesses of their efforts. We conclude with some other design considerations of relevance for companies that want to move ahead on linking branding and CSR.

DESIGNING THE JOIN BETWEEN BRANDING AND CSR

Traditionally, corporate branding, product development, and CSR departments operate in separate “silos” staffed by functional specialists. Engaging a full range of stakeholders, many of whom take CSR and sustainability seriously enough to influence a firm’s brand value and reputation, makes the work of branding and CSR inseparable. And while customers’ concerns will necessarily remain focused on getting quality products at fair prices, increasingly they also call for responsible governance, CSR, and environmental sustainability. Designing processes by which these demands are translated into viable products and fair and sustainable practices takes the joint efforts of everyone who is a party to the enterprise. Where once marketers raised the cry “the customer is king,” the mantra for the enterprise brand is “stakeholders rule!”

Organization Design

How can companies’ best organize to link CSR and branding? Functional silos are the biggest obstacle to the transformative change required of organizations that want to be seen as both strong brands and good corporate citizens. Trying to create a discrete CSR brand (much like an Employer Brand) will not do the trick as this only strengthens and magnifies the effects of silos; ultimately, the CSR brand will stand against any employer branding, the external brand, and whatever other fragmenting branding programs arise. One obvious organization design would include both of these units under one function.

Cross-functional collaboration is another option. Evidence to date shows that, among U.S. companies, fewer than half of big firms have strong connections between CSR and corporate communications, and these chiefly revolve around social reports. Links to marketing are even fewer and concern primarily cause-related marketing. The design challenge is to create an overarching internal “brand community” wherein leaders in CSR, communication, marketing, and HR work together with senior management to nurture the corporate brand and its many extensions. Some argue, too, that stakeholders should have a formal voice in brand, CSR, and other activities of the corporation (cf., Kelly & White, 2007).

Product Design

An even greater design challenge is to connect both branding and CSR to innovation (cf., Cooperrider, 2008). This three-way integrative move

connects branding and CSR with new product development, and often incorporates the direct involvement of stakeholders, particularly of fans and critics. This is where design thinking can prove beneficial because designers are trained to be creative about aligning the conflicting interests of multiple engaged stakeholders. Their creativity can infuse alignment efforts with enormous inspirational and motivational value.

Why not combine the activities of new product innovation with branding and CSR? What would such a process look like? It could take many forms and we are inclined to think that it should be customized to the style of the brand in question in order to create new sustainable and responsible products in a way that scream: this company is behind the effort. Just as every Apple product has a carefully designed core that any brand fan will recognize from a long way off, what is needed is CSR influenced products that likewise maintain a brand's integrity and encourage its authenticity.

Good design always plays with such tensions. Aesthetic sensibility rather than technical rationality allows an enterprise to embrace tensions like these. Plus, let there be no "bolt on" marketing that smacks of greenwashing here. Good design should reflect an honest brand expression that takes the form of sustainable, responsible product design. Finally, we consider design as a promising bridge between branding, innovation and CSR because each of these activities in its own way aims to express shared values while satisfying the diverse expectations of stakeholders.

Using Branding and CSR to Drive Change

One implication of the mutual influence of brand and CSR activities within the firm is that the combined weight of these two leads to organizational change (cf., McElhane, 2008). Stronger brand, better image of the company, higher reputation in the eyes of the public all yield effects back on employee engagement and organizational identity. This licenses employees to engage with other stakeholders both inside and outside the firm in activities in which they are invested as citizens of the planet. This has the potential to unleash tremendous motivation to use the resources of the firm to improve life and can often create new sources of revenue for the company in the process.

The challenge before us is not simply to extol the good practices or expose the bad ones when companies link branding and CSR. Rather, it is to bring a holistic perspective, multiple logics and criteria, a participatory process, and, in particular, a positive intent into the design of this linkage. As the examples given throughout this chapter indicate, branding and CSR can be

two potent tools to realign corporate with public interests. Combining their forces, in our view, makes it doubly possible to imagine a future brighter than the one we are likely to have if we maintain current mainstream corporate practices.

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BRIDGING DESIGN AND MANAGEMENT FOR SUSTAINABILITY: EPISTEMOLOGICAL PROBLEMS AND POSSIBILITIES

Ulla Johansson and Jill Woodilla

ABSTRACT

This chapter considers problems and opportunities for design and management to contribute to creating a sustainable world. We consider the epistemology of two discourses bridging design and management, design management and design thinking, and that of appreciative inquiry, which we suggest has much in common with design thinking. We discuss problems with combining discourses from different paradigms, and highlight opportunities when paradigms are similar. We illustrate these opportunities with examples of three projects lead by designers, and comment on ways these discourses contribute to the concept of sustainability and ways in which practitioners create sustainable value.

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 57–75

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003008

We designed our way into our current nonsustainable world, and it is through design – along with the management of design – that we will gain a more sustainable one (cf., Manzini & Cullars, 1992; Thackara, 2005; Walker, 2006). For that to happen, we need to build a solid conceptual platform, develop imaginative research programs, and create communities of practice for a sustainable world for all. This chapter is a small contribution to the theoretical groundings of this agenda.

If design management is to play a positive role in the construction of a sustainable world, its epistemology needs attention. Management and design *can* be an interesting and productive combination, but only if paradigmatic relationships are considered. Often there is a gulf between the worlds of design and management due to different underlying assumptions and logics, and different ways of viewing reality, and a naïve or superficial combination of the two potentially can harm rather than benefit a sustainability perspective.

Design is about *constructing* new things or services, and making them better than they were before. Here constructing is an alternative to analyzing, which implies cutting existing things and thoughts apart. Doing things better than they are today implies that design has a normative edge and is related to values of human beings, so can be judged only from that perspective. This in turn means that design never can be completely objective, but needs to be seen in relation to individuals and their values, or what is sometimes called “the humanistic dimension” in the design profession.

From this perspective, the relation between design and sustainability becomes clear. First, a sustainable world does not come out of analysis of the current one. To *create* a sustainable world, creative knowledge is needed, or a knowledge that combines different insights to create something new. Designers primarily work creatively with visual communication and empathy for the ultimate user, making designers an important means by which different individuals and societies give expressions to different visions of sustainability. Indeed, creativity is necessary to resolve the oxymoronic combination of a sustainable world and a high quality of life for its inhabitants.

Economics and the knowledge of the management profession are also needed to create a sustainable world because the offerings of goods and services they created have contributed to the lack of sustainability that surrounds us today. The market needs to become a “sustainable market,” for which management knowledge is needed, because management knowledge – understood in a broad sense – is about creating value.

So, to move toward a more sustainable world, design and management have to be united in some way. But how? Here we highlight some issues regarding the bridge between design and management and discuss the possibility of using appreciative inquiry to bridge the two. We find that there is an affinity between the epistemologies of appreciative inquiry and design – one that avoids problems associated with other connections between the domains of design and management.

This chapter has four sections. We first describe the characteristics of three discourses – design management, design thinking, and appreciative inquiry – relevant to connecting design and management in a sustainable world. We discuss how *design management* is based in a normative mainstream management discourse, while *design thinking* relies on more humanist design discourse. We show that the two discourses have different capabilities when bridging design and management from a sustainability perspective. While the outcomes of design management are directed toward improving value for the company, the outcomes of design thinking create value for all stakeholders, specifically the human user and the environment, as well as the company. Design thinking is a platform from which society can be changed for the better, whether through human-centered design, choices centered on sustainability, or through strategic planning for a future rooted in optimism. Such aspirations are also embedded in *appreciative inquiry* with its focus on creating images of the future to stimulate and direct organizational action and maintaining hope and momentum in the process (Fitzgerald, Murrell, & Miller, 2003).

In the second section, we discuss paradigmatic differences and similarities among the discourses, epistemological problems, and possibilities revealed by our analysis and introduce our framework for comparing underlying assumptions. In the third section, we link sustainability, appreciative inquiry, and design thinking, before presenting our conclusions in the final section.

DISCOURSES BRIDGING DESIGN AND MANAGEMENT

Two well-known and distinct discourses, *design management* and *design thinking*, already operate at the intersection of design and management. We introduce a third discourse into the conversation, *appreciative inquiry*. Later, we briefly describe the relevant characteristics of each.

The Design management Discourse and Its Characteristics

Design management as a practice has been ongoing since the beginning of the industrial era. As early as the 18th century, the Wedgwood porcelain company in England recognized the need for special arrangements to manage the working relationships between artists from London with potters from the countryside (de Mozota, 2003). Two hundred years later, companies such as IBM, Braun, and Olivetti attributed their success to their strategic use of design.

Design management as an academic area is much younger. The first academic classes were taught at the London Business School in the mid-1970s. During the 1980s, “corporate identity” was a popular topic among designers as well as managers, and later transformed into the academic area of “branding” claimed by marketers rather than designers (Johansson & Svengren, 2006). The first large research project, the Triad Project, began 10 years later as a cooperation between Japan, United States, and Europe with the purpose of writing case studies for educational use at Harvard and other schools of business (see www.dmi.org). The first doctoral dissertations in design management also came from this project.

Significantly, most design management research has been conducted at management schools rather than design schools (Cooper & Press, 1995; de Mozota, 2003). The subfield of design in relation to strategy and innovation has been dominated by mainstream management strategy literature with Porter (1985, 2008) in the foreground. The outcome of this approach is that “design” is viewed as a “strategic visualizer” (Seidel, 2000) of future products in a competitive strategy that fulfills the economic goals of management. Connections between design and marketing have been dominated by mainstream marketing scholars, such as Phillip Kotler, whose influential book “Marketing Management” was first published in 1967 and now in its 13th edition, leading to areas of branding and corporate identity (Bruce, 2008; de Mozota, 2003).

“Design” in the management area (as distinct from the discourse of design management) is frequently considered in connection with *organizational design*, referring to the reporting and decision-making relationships within an organization. The scholarly discussion has long drawn on metaphors of architecture (cf., Nadler & Tushman, 1997), and has recently looked for inspiration from aesthetics (cf., Linstead & Hopfl, 2000), alternative conceptualizations of “designing” (Boland & Collopy, 2004a), and interpretation of specific examples (cf., special issue of *Organization Science* on organization design, March/April 2006). A constructivist

approach, systems thinking, and considerations of design thinking have been introduced into the earlier functionalist organization design literature, and European voices have joined with those from North America. This discourse stream is clearly aligned with positive organizational change and many of the tenets of appreciative inquiry (cf., Avital & Boland, 2008). However, while some scholars explore design thinking (Liedtka, 2004) and others use examples from sculpture and architecture (Barry & Rerup, 2006; Yoo, Boland, & Lyytinen, 2006), for the most part the discourse remains clearly rooted in the management realm.

The Design Thinking Discourse and Its Characteristics

Design thinking has become something of a fad in the US business media and journals recently (cf., Beckman & Barry, 2007; Dvorak, 2008; Junginger, 2007). Both *Business Week* and *Fast Company* have had numerous articles about top management's need for "design thinking." Design thinking, as Nussbaum (2005) phrases it, has become "the key to earnings growth and an edge that outsourcing can't beat." Here design thinking is seen as the path to innovation, and innovation in turn as a necessity for company survival. The recent trend was spearheaded by the world's biggest design company, IDEO, and its founder, David Kelly, and former CEO, Tim Brown, have been active as both authors of articles and subjects of press articles. Then, with the acclamation of the success of design firm IDEO's methodology in creating innovations in many areas of business (Kelley & Littman, 2001), this discussion made a leap into the management area (Brown, 2008; Dvorak, 2008).

However, any impression that the discourse on design thinking is a new creation of the management domain is misleading. Rather, what is being said in the design thinking discourse clearly relates to what had been said earlier in the design area about (industrial) design and design methods. Herbert Simon, the Nobel laureate economist, is often mentioned as the founding father of design research. Simon (1969/1981) wrote about the character of design and design research, specifically pointing to the character of creation. His philosophy of design embraced a normative or even moralistic view, that design should make things better.

Simon was followed by other scholars who each reflected on the nature of the work of design practitioners, using architects and designers as examples. Schön (1983) studied psychoanalysts' and architects' way of learning from practice, and Lawson (1980) studied architects in his definitive work,

“How designers think.” The debate continued as design methods evolved from semiotics and ergonomics into eco-design, inclusive design, and design for sustainability (see Johansson & Woodilla, 2008), indicating that there are very clear and definite academic roots to the concept of design thinking (see Cross, 2001, for a detailed discussion; also Cross, Dorst, & Roozenburg, 1992; Rowe, 1987).

Another stream of discourse exploring designerly ways of managing was inspired by faculty working with architect Frank Gehry in the design and construction of a new building (Boland, Collopy, Lyytinen, & Yoo, 2008). A workshop attended by scholars, artists, and designers delved into concepts such as *design attitude* (Boland & Collopy, 2004b), an attitude that fosters a fluid problem-solving process that celebrates new alternatives while striving for the best design solution; *design mindfulness* (Buchanan, 2004), the traits of companies who understand how design can transform an institution; and a *vocabulary of design for management education* (Boland & Collopy, 2004c), the language for debriefing the design task, generating alternatives, and making judgments of fit, balance, and scale, which collectively, along with *design thinking* (Liedtka, 2004), incorporate art *and* the science of hypotheses generation and testing to solve “wicked problems.” Common to all these, and other contributions to an edited book of short, thought-provoking chapters by each attendee, are reflections around the way in which managing would be very different if created by collaboration between managers and designers.

Thus, design thinking is not one discourse, but rather two connected by almost invisible threads between them. First, design thinking is a 50-year-old academic area of reflective research trying to verbalize and conceptualize the practice of design (and architecture). Its purpose is to understand what designers are doing and what characterizes the designer’s work. This discourse has been mainly of internal interest to the design community, and its aim is clearly interpretative to understand and conceptualize the praxis knowledge of designers and architects, and coincidentally, to make them visible to others who may benefit from a designerly way of working. In the second strand, the hype discourse of the 21st century, design thinking is creating a bridge toward management, similar to that of design management.

The remarkable thing is that neither the more popular articles nor the management-grounded academic journal articles refer to the design tradition of “design thinking,” apart, perhaps, to a brief reference to Simon. Nor do they refer to the literature within the area of design management. It is as if the articles about design thinking within the design area are taken for

granted, and literature within design management is ignored. And, as we discuss later, the lack of connection between the discourses is rooted in more fundamental, epistemological problems.

Sustainability Within the Design and Management Discourses

While few would argue with the Brundtland Commission's (1987) call to meet the needs of today with concern for future needs, "sustainability" is expressed differently in management and design, leading to different taken-for-granted meanings in design management and design thinking. Management frequently refers to *green management*, which may vary from simple recycling to restoring past environmental damage (Hadden, Oyler, & Humphreys, 2009). Pressures to manage responsively as well as profitably lead to emphasis of the *triple bottom line* of economic, social, and environmental performance (Waddock, Bodwell & Graves, 2002). For mainstream management, the *business case* for sustainability must be clear (cf., Weber, 2008). Design, however, views sustainability in a more holistic way, embracing the concept of the *cradle to cradle* cycle, where products are made from materials that are perpetually circulated (McDonough & Braungart, 2002); different areas of design enact this concept differently (cf., Thorpe, 2007). Thus discourses with a reliance on management, such as design management and the popular discourse of design thinking, put the business case first, while the designerly way of thinking includes sustainability from the beginning. These differences have not been fully explored.

The Appreciative Inquiry Discourse and Its Characteristics

Appreciative inquiry, as a spirit and methodology for creating positive change, can be defined as much by its intentions as its structural elements. With fundamental underpinnings in social constructionism, appreciative inquiry shuns the managerial discourse of problem-solving in favor of imagery and dialogue (Fitzgerald et al., 2003), closely resembling the design ethos.

Appreciative inquiry owes much of its development to early applications in organizational intervention programs (see www.appreciativeinquiry.case.edu/intro/timeline.cfm). These interventions drew attention to characteristics of large-scale change efforts and associated meaning-making by emphasizing collaborative approaches to organizational change, vision setting, and data

analysis. However, rather than focusing on a problem-solving approach, appreciative inquiry took “organizing as a miracle to be embraced” as its basic assumption (Barrett & Cooperrider, 1990, p. 229).

Similar to design thinking, the appreciative inquiry discourse has two distinct streams, one related to practical application and disseminated through workshops and the Internet, and a more theoretically focused stream, developed through academic research and scholarly conferences and publications. Within this later stream, critical evaluation of appreciative inquiry have reexamined its theoretical roots and suggested alternative directions. For example, van der Haar and Hosking (2004) point out that what is “positive” is a negotiated, local construction and that critical reflection and acceptance of multiple realities should be a part of the process, while Grant and Humphries (2006) integrate appreciative inquiry and critical theory. These, and recent links with positive psychology and positive organizational scholarship, are indications that the discourse is engaging with alternate philosophies as it evolves.

Sustainability Within the Appreciative Inquiry Discourse

Sustainability entered the vocabulary of appreciative inquiry with Cooperrider’s (2008a) story of how the leadership of Fairmount Minerals in Chardon, Ohio, created a “sustainable design factory” (see www.fairmountminerals.com). The transformation discarded the strategic management mantra of SWOT, not for the “4Ds” of appreciative inquiry (discovery, dream, design, destiny), but rather with SOAR – systematic study of signature strengths, opportunities, aspirations, and results. As part of the intervention, participants engaged in aspects of “design work,” such as visualizing and rapid prototyping. Meanwhile, courses in design were introduced into the MBA curriculum at the Weatherhead School of Management at Case Western Reserve University (Cooperrider, 2008b), the leading academic center of appreciative inquiry scholarship.

We contend that any quest for a sustainable future will necessarily be multidisciplinary. Appreciative inquiry already has demonstrated success in sustainability projects, and links to design thinking – which is itself a bridge between management and design. Connections between design thinking and sustainability also exist, so we now juxtapose and review the central precepts of each area.

THE PARADIGMATIC DIFFERENCES BETWEEN THE THREE DISCOURSES

To make our paradigmatic point – that often there is a problematic inconsistency between design and management theories – we use Burrell and Morgan’s (1979) social science analysis of the paradigms of management/organizational research, which in turn was influenced by Kuhn’s (1962) concept of a “paradigm” as a fundamental worldview affecting how particular aspects are understood. Burrell and Morgan analyzed organizational/managerial research to reveal the paradigmatic grounds and assumptions that guide all approaches to research in social science, and to articulate distinctions between different schools of thought, aiming “to show what each of the paradigms has to offer, given the opportunity to speak for themselves” (p. 395). While there are other meta-frameworks for comparison of philosophical underpinnings of research, and Burrell and Morgan’s framework is not without its critics (Johansson & Woodilla, 2008), we suggest that it is a parsimonious way of comparing and connecting research in different areas that each have connections to the social world.

Design management relies heavily on what Burrell and Morgan (1979) label “the functionalist paradigm,” characterized by the underlying assumptions of objectivity and regulation. From this perspective, the possibility of objectivity is taken for granted and is followed at all times, that is, objectivity is never challenged. “Regulation” refers to the tacit assumption that the role of research is to adhere to (and thereby preserve) the current social order and its foundational norms.

Although historically much management research at business schools has found a comfortable home within the functionalist paradigm, the tendency over the last 30 years or so has been to question concepts such as “objectivity.” As epistemological foundations came under close scrutiny, the paradigmatic spectra expanded – as in most social sciences.

The situation for design research is different and for the most part falls outside the functionalist paradigm, having instead interpretative, radical structuralist, or radical humanist underpinnings (Johansson & Woodilla, 2008). The design and sustainability discourse, which problematizes objectivity and explicitly advocates an agenda of change, in this case a world of increased sustainability, instead falls within the radical structuralist paradigm.

Appreciative inquiry has likewise from the beginning been located in the radical humanist paradigm with its (constructionist) foundations and

expectations for radical change. As the methodology became popular with organizational change consultants, it began to acquire some prescriptive or functionalist overtones (van der Haar & Hosking, 2004), but the contributing discourses of action research and organizational development also anchor appreciative inquiry in Burrell and Morgan's radical humanist paradigm.

One of the insights from Burrell and Morgan's work is that joining research from disciplines with similar underlying assumptions will be more fruitful than attempts to resolve (or simply ignore) deep contradictions between less compatible ones. Indeed, there has been a lively debate as to whether the various paradigms are incommensurable, that is, whether it is even possible for researchers based in different frameworks to work together (cf., Gioia & Pitre, 1990). Thus, when bridging two academic fields like design and management, it is important to look at the epistemological foundations of the two. If they are not aligned, it will be difficult to build new knowledge and bridges that feel comfortable for both partners.

When we review the paradigmatic consistency within *design management* and *design thinking*, the two discourses that bridge design and management, we can begin to appreciate where the relationship will be valuable, and where strains might occur. The design management discourse rests primarily on the mainstream functionalist management paradigm, whose characteristically linear logic approaches any given issue primarily via analytic consideration of its component parts that, from the design perspective, results in an incomplete understanding of the whole. If, instead, we consider design thinking – or “designerly” thinking – the opposite pattern emerges. Design thinking, as the name indicates, relies upon the epistemology of design. Design thinking is born in the cradle of design and has design as its mother tongue.

We claim that the bridge between management and design must be built from humanist-centered design-thinking research partnering with managerial perspectives with similar epistemological underpinnings. We now explore the related issues.

Epistemological Problems and Possibilities

As we note earlier, the core problem with bridging management and design concerns the epistemological coherence between the two realms. The problem is that much of the design management bridge between the two

areas has itself been constructed on the ill-matched pillars of interpretive-based design and “mainstream” functionalist management.

The epistemology of the discourse *design thinking* does not seem to be problematic at first glance. It relies on the design discourse and seeks only that “the designerly way of thinking” be transferred to management. The discourse has solid roots within Burrell & Morgan’s radical humanist paradigm. Therefore, we need management discourses with roots in the same paradigm: organizational learning and organizational development spring immediately to mind. However, there is a second, less epistemologically coherent connection between design and management through the hyped design thinking discourse of the 21st century. There, the discourse – some might call it “propaganda” – for design thinking is located in the mainstream business media that represents functionalist management research. A bridge using this interpretation of design thinking would be unstable because it lacks a true epistemological foundation. Thus, design thinking has an opportunity for a natural partnership with a management discourse, but the trap of the alternate stream of design thinking discourse may be a problem.

Appreciative inquiry has its epistemological roots in the radical humanist paradigm and organizational development. It therefore fits perfectly with design thinking by design professionals. However, unless care is taken, this might not continue. As success stories become known, appreciative inquiry could well become a technique embraced by mainstream management, and absorb its flavor of the dominant functionalist paradigm with its tendency to view any situation as an analytical problem to be quickly solved. For many practitioners of appreciative inquiry, this may seem to be unlikely, but many signs already exist (van der Haar & Hosking, 2004). Here appreciative inquiry scholars may learn a lesson from design thinking, and be vigilant to make sure that their field remains within the radical humanist paradigm.

There is an opportunity to bring all these discourses together in the interest of sustainability. Sustainability-focused design is a vibrant area within design research, committed to designing physical objects, the built environment, and services using principles of economic, social, and ecological sustainability. This discourse, too, is primarily within the radical humanist paradigm. Design thinking is a bridge toward management but standing on the design side. Appreciative inquiry has already taken steps to be its counterbalance, leaning on the management side (OD), recognizing the design side, and entering the discourse of sustainability and design thinking.

LINKING SUSTAINABILITY, APPRECIATIVE INQUIRY, AND DESIGN THINKING

When designing for a sustainable world, we see similarities among the discourses of sustainability, appreciative inquiry, and design thinking, as summarized in Table 1.

When the salient features of the three discourses are laid out in this way, the similarities between appreciative inquiring and design thinking are striking, as well as their links to the ideals of sustainability. Competitive advantage is not one of the first principles, although economic issues are recognized as a practical concern. Returning to Burrell and Morgan's grid to examine the paradigmatic underpinnings of the three discourses, we propose the schematic representation of Fig. 1.

Sustainability as a construct has had a difficult path to acceptance within the management discourse, due in part to management theory's lack of biophysical foundations and focus on human "progress" (Fougère & Solitander, 2009; Gladwin, Kennelly, & Krause, 1995). But sustainability research cannot be part of the functionalist platform based on objectivity and regulation. Rather, sustainability-focused research aims at change of the fundamental societal regulations/structures and challenges notions of objectivity (Cerin, 2003). As a consequence, sustainability research can be placed in the Burrell and Morgan "radical humanist" paradigm, where the aim of research is a radical change of society proceeding from the basis of subjective norms rather than objective ones. Some scholars may take a more objective view, aiming for radical structural change, but the needs of future generations – humans – are paramount.

The cross-disciplinary work necessary to tackle the problems of sustainability must pay attention to the epistemological foundations of the individual disciplines. Sustainability research proceeds from a fundamentally different paradigm than mainstream management and thus from mainstream design management. But, when we look at the match between design thinking and sustainability, we recognize that design thinking has a natural anchor in the radical humanist paradigm, as do organizational development and appreciative inquiry.

Projects Embracing These Ideas and Putting Them into Action

We have drawn attention to the importance of paradigmatic awareness and consistency when creating multidisciplinary areas, and suggest that design

Table 1. Linkages between Sustainability, Appreciative Inquiry, and Design Thinking.

	Sustainability	Appreciative Inquiry	Design Thinking
Definition	<i>The capacity to endure</i> Sustainable development meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bruntland Commission, 1987)	<i>An attempt to generate a collective image of a new and better future</i> A theory of intentional collective action which is designed to help evolve the normative vision and will of a group, organization, or society as a whole (Cooperrider & Srivastva, 1987)	<i>An approach using the designer’s sensibility and methods for problem solving to meet people’s needs in a technologically feasible and commercially viable way</i> Design thinking is human-centered innovation (Tim Brown, IDEO)
Guiding principles	<ol style="list-style-type: none"> 1. The concept of “needs,” in particular, the essential needs of the world’s poor, to which overriding priority should be given 2. The idea of limitations imposed by the state of technology and social organization on the environment’s ability to meet present and future needs 	<ol style="list-style-type: none"> 1. Grounded observation of the “Best what is” 2. Use vision and logic to collaboratively articulate “What might be” 3. Ensure consent of those in the system to “What should be” 4. Collectively experiment with “What can be” (Bushe, 1999) 	<ol style="list-style-type: none"> 1. Brings together people from different disciplines to collectively tackle problems and ideas that are more complex than the single designer can imagine 2. Each project is customized for the challenge at hand because design is messy and nonlinear 3. Uses observation, prototyping, building, and storytelling
Methodology	Ways of viewing and solving problems about how we use resources for human needs	Action research used to envision positive change by developing a deep and collaborative appreciation of what is well and good in organizations and social systems	User-oriented, team-based method of problem solving, inventing, and developing so that products and services serve users’ needs
Paradigmatic focus/intent (Burrell & Morgan)	Radical humanist Radical structuralist	Radical humanist	Radical humanist

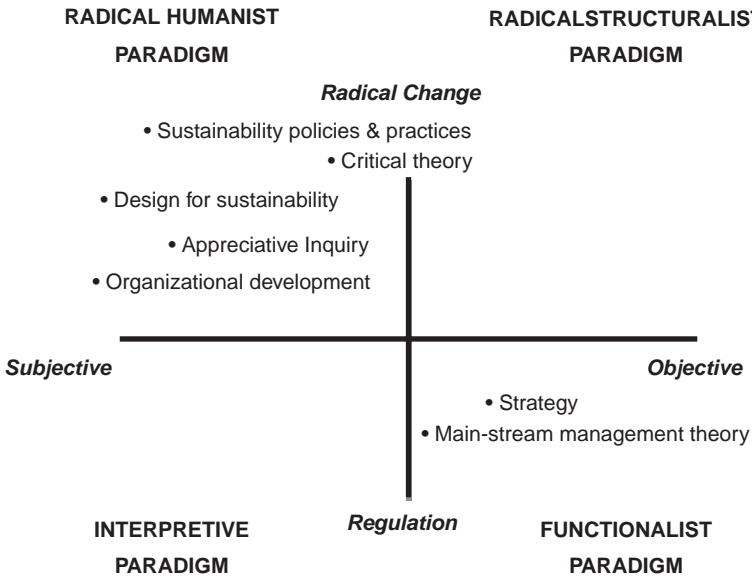


Fig. 1. Paradigmatic Representation.

thinking may partner well with appreciative inquiry in the interests of sustainability. Little, if anything, has been written about projects that explicitly demonstrate the connection, so, instead, in this section we provide short examples of sustainability-focused research grounded in designerly ways of thinking and working, and show how they connect with the precepts of appreciative inquiry. We feature three different researchers, taking a project from each to show a variety of approaches, followed by a brief discussion.

Ezio Manzini (www.dis.polimi.it/emanzioni-CV.htm, accessed October 2009) uses design knowledge to create future scenarios for a sustainable world. More than a decade ago, Manzini realized that the designer's role in creating a sustainable world is to create a vision and a process for using design thinking. He brought the design community together and used the designers' "realistic optimism" to commit to a sustainability dimension in every research activity (www.changingthechange.org). As a result, designers cocreated a Proposed Design Research Agenda for Sustainability, with the goal to build a shared framework for a multiplicity of research activities on design research for sustainability, while triggering autonomous research

programs that enrich these emerging issues with visions, proposals, tools, and reflections.

Stuart Walker (<http://imagination.Lancaster.ac.uk>) uses a combination of academic writing and experimental design studies to communicate his thesis that the way designers continually develop “better,” newer variations of existing products that feed the economic engine of a “progressive” society as unsustainable (Walker, 2006). He views methods of mass production as integral to the problem, and experiments with alternative, everyday products using recycled materials. Such work represents a shift in thinking to one where a designer can think in terms of societal needs, and create products that although experimental, have an aesthetic appeal. Walker claims that sustainability should have a *quadruple* bottom line that includes “personal meaning” in addition to economic, environmental, and social considerations (www.european-futurists.org/, accessed 21 October 2009.)

John Thackara (<http://www.doorsofperception.com/>) organizes events in which grassroots innovators work with designers to imagine sustainable futures – and take practical steps to realize them. For example, *Designs of the time 2007* (www.dott07.com) was a year of projects and events in northeast England that explored what life in a sustainable region could be like, and how design could help the community get there. One urban community established the goal to pioneer a new sustainable future through a project to increase local food production and reduce food miles. Everyone grew food and discovered new relationships with local food producers and existing growers in the town and its surrounding area.

For Thackara (2005), the future is about cocreating a world in which well-being is based less on material possessions and more on people. He believes that ethics and responsibility can inform design decisions without sacrificing social and technical innovation. He challenges us to be both “in the bubble” and above it at the same time, to see both the big picture of our desired destination and the small (designed) steps that will help us get there.

Further Links between Design Thinking and Appreciative Inquiry

Similarities between the above projects and work in appreciative inquiry point to possibilities for further, more explicit connections. All three designers and their projects are quite different, but all show positive results for real changes. Each has design and sustainability dimensions, exemplifies

design thinking, and acknowledges economic or business implications. Two are clearly doing organizational development: *Changing the change* for a professional community, and *Doors of Perception* for regions with economic hardship. Neither of these two used formal methods of appreciative inquiry, nor do we know how they might have been different if the facilitator had been an appreciative inquiry consultant rather than a designer. The third, Walker's academic-based work, suggests that even individual designers act in the spirit of appreciative inquiry when they struggle with issues of theory and practice for a radically different, sustainable world.

In the future, practical experiments could be cofacilitated by a designer and an appreciative inquiry facilitator, with an ethnographic researcher observing the process and reflecting on it. Afterwards, Walker's theoretical framework could be examined from an appreciative inquiry perspective and with findings from the empirical work.

CONCLUSION

We approached our research question of how best to connect design and management in the interests of sustainability through an examination of the epistemological connections among our discourses of interest. We recognized both problems and opportunities, and found that some of these inherent in design management and design thinking apply to appreciative inquiry as well.

Design thinking and appreciative inquiry go well together if one takes a positive look at the two areas. Appreciative inquiry desires positive change, and provides a structured approach to (positive) organizational development. Design thinking also wants to create a new solution but its process is messy and iterative as it focuses on products, services, or any part of our lived environment. However, we want to raise a warning flag that the partnership might not be ideal if both discourses focus only on the positive. The partnership will be more meaningful if both sides critically evaluate the dangers and risks inherent in the problem at hand. In this aspect, design thinking methodologies have much to contribute to appreciative inquiry, while appreciative inquiry can add its strengths of community building. We should not forget that "sustainable development aspires to be an indefinable, unattainable goal – a goal which, nevertheless, many consider worth aiming for, but which forever alludes actual arrival" (Walker, 2006, p. 17).

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A WHOLE NEW VALUE: DRIVING INNOVATION, SUSTAINABILITY, AND PROSPERITY THROUGH APPRECIATIVE INQUIRY

Nadya Zhexembayeva

ABSTRACT

From Michael Porter (Porter & Kramer, 2006) to Glamour magazine (Sole-Smith, 2009), many are advocating alignment of social benefit and competitive advantage. As natural resources continue to decline and social expectations of business continue to grow, it is no surprise that many companies are jumping on the bandwagon on its way to a promising destination of mutual benefits for business and society. Yet, most businesses fail to capitalize on this opportunity for a simple reason: it is easy to get excited, but it is hard to make it work.

The chapter builds on the practices of companies throughout the world that have figured out how to harvest profits at the intersection of business and society, thus creating a whole new value for shareholders and a broad range of stakeholders. Specific practices are described as essential for the creation of this win-win for shareholders and stakeholders, including understanding the value shift emerging throughout economies and continents; discovering and designing opportunities to achieve existing

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 77–96

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003009

business goals with new socially and ecologically sound strategies; and engaging passions, values, and appreciative capacities of the whole organization for higher returns.

From Michael Porter (Porter & Kramer, 2006) to Glamour magazine (Sole-Smith, 2009), many are advocating alignment of social benefit and competitive advantage. As natural resources continue to decline and social expectations of business continue to grow, it is no surprise that many companies are jumping on the bandwagon on its way to a promising destination of mutual benefits for business and society. Yet, most businesses fail to capitalize on this opportunity for a simple reason: it is easy to get excited, but it is hard to make it work.

The good news is that a number of companies throughout the world have figured out how to harvest profits at the intersection of business and society, creating a whole new value for shareholders and a broad range of stakeholders. They do it by understanding the value shift emerging throughout economies and continents; discovering and designing opportunities to achieve existing business goals with new socially and ecologically sound strategies, and engaging passions, values, and appreciative capacities of the whole organization for higher returns. Here are some early observations on how they get it done.

UNDERSTANDING THE VALUE SHIFT

Ask any management student how to create value and the answer will surprise you by its consistent simplicity. Get capital and a good idea, facilities and the people to implement the idea, and then others to buy it and you are ready to go. Indeed, the formula for value creation has not changed since the inception of the modern economy: we are still playing with five basic elements of capital, product, employees, customers, and facilities and operations, even though choosing the right mix of elements for a unique value proposition remains an ongoing art to master. But while the core elements of the formula have not changed, two major trends have been redefining the context in which value is created (see Fig. 1 for illustration): the decline of resources and the rise of social expectations (The Natural Step, 2009).

The debate on whether infinite growth is possible in the finite world of natural resources is not recent; rather it is nearly as old as the economic

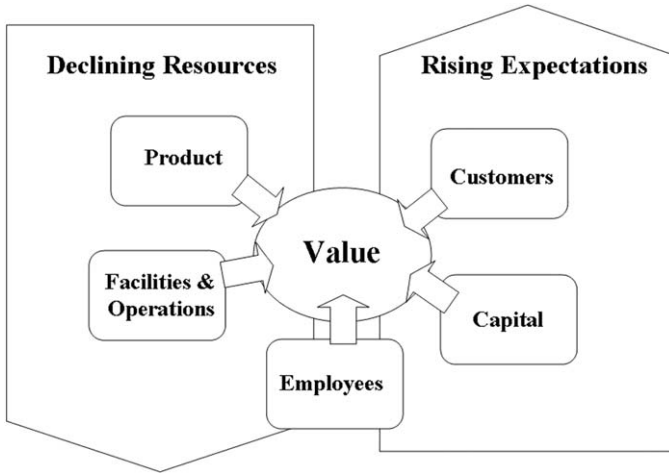


Fig. 1. The Value Shift.

literature itself (Krautkraemer, 2005), tracing back to 1798 observations of Thomas Malthus on human nature versus Mother Nature, and revamped in the modern history with Barnett and Morse's (1963) crucial empirical exploration on *Scarcity and Growth*, which concluded that resource scarcity was virtually nonexistent. These conclusions were in turn strongly debated by Meadows, Meadows, Randers, and Behrens (1972) in The Club of Rome's *Limits to Growth*, and the debate has been unfolding ever since.

However, while the debate is not new, the recent years have seen renewed and strengthened appeals on the rapid decline of natural resources voiced by international bodies such as the World Wildlife Fund. World Wildlife Fund's 2008 Living Planet Report warned us that "the possibility of financial recession pales in comparison to the looming ecological credit crunch" (p. 3). While the level of decline of certain resources, such as oil, remain debated (see, e.g., the many takes on oil reserves featured by Wikipedia (2009)), other statistics are less contested, such as the rapid decline of biodiversity, as confirmed by the UN-commissioned Millennium Ecosystem Assessment (2005) and other scientific bodies.

As if the declining resources were not enough, the corresponding trend of rising expectations makes matters much more severe. In addition to the pressure on living standards in developing nations, such as Brazil, China, India, and others, which, in turn, fuels the rising cost of raw materials, the

growth of nonprofit organizations has added vocal stakeholders. From their humble beginnings in the 1960s and 1970s, Hawken (2007) has estimated that now the number of nonprofit organizations dedicated to the social and environmental concerns worldwide has surpassed one million. Powered with increasingly affordable Internet-based technologies, these organizations are networked and many are highly effective, spreading information and catalyzing public action and consumer activism (Rheingold, 2002).

In the face of these two major trends, it is no surprise that social and environmental issues are beginning to emerge on business agenda, as demonstrated through the rise of the concepts of “corporate social responsibility (CSR)” and “sustainability.” While CSR can be defined as “the degree of (ir)responsibility manifested in a company’s strategies and operating practices as they impact stakeholders and the natural environment day to day” (Waddock, 2004, p. 10) and sustainability can be defined as “the ability to meet today’s global economic, environmental, and social needs without compromising the opportunity for future generations to meet their needs” (World Commission on Environment and Development, 1987, p. 43), both concepts are used interchangeably, putting forth a united invitation. Business is invited to find harmony between business profit and world benefit.

Answering this invitation, a number of ideas and frameworks have been put forth. The Dow Jones Sustainability Indexes’ (2009), for example, developed its own corporate sustainability concept defined as “a business approach that creates long-term shareholder value by embracing opportunities and managing risks deriving from economic, environmental and social developments” (p. 1), and implemented via the Indexes’ investment strategy. Hart and Milstein (2003) offered a model of sustainable value, conceptualized as “shareholder wealth that simultaneously drives us toward a more sustainable world” (p. 65). While these are only two of many examples of introducing social and environmental issues into business practice, most concepts or frameworks have not managed to address directly the complex relationship between business and society, resolving the seeming conflict between business profit and social benefit, voiced so prominently by Friedman’s, 1970 argument that the only social responsibility of business is increased profits, which continuous to echo in such recent publications as the *Economist* with Crook’s (2005) report. However, one conceptual framework did offer a bridge between profit and world benefit and that is the Laszlo’s (2005, 2008) sustainable value framework. While not without limitations, the framework offers a new way of looking at business sustainability and will be used as a conceptual foundation for the construct of sustainable value for the remainder of this chapter.

Laszlo (2005, 2008) suggests that it is no longer acceptable – and therefore sustainable – to align a company’s business strategy along the single dimension of shareholder value, offering a new additional axis of corporate performance – the ability to create value for a broader group of company stakeholders.

Laszlo’s (2005, 2008) sustainable value matrix (see Fig. 2) suggests that creating high shareholder value while destroying stakeholder value (the upper-left quadrant on the sustainable value matrix) is unsustainable as it can lead to significant strategic losses such as customer deselection, loss of license to operate, penalties, and reputation damage. The multinational Sony Corporation discovered the unsustainable nature of this path the hard way, when its 2001 release of PlayStations in Holland was blocked by the government due to high level of toxic element cadmium found in cables, costing the company more than \$130 million (Esty & Winston, 2006). Lead in children’s toys created an industry nightmare in 2007 (TheDailyGreen, 2009) while the high level of greenhouse gas emissions of coal-fired power plants forced the buy-out of a major utility in the United States with the subsequent cancellation of 8 of its 11 planned coal-fired facilities (Sierra Club, 2009). These are only a few of the sectors considered to be operating in the upper-left quadrant of the sustainable value matrix, with attendant competitive risks.

Losing value for both shareholders and stakeholders (the bottom-left quadrant of Laszlo’s (2005, 2008) matrix) results in failure and bankruptcy.

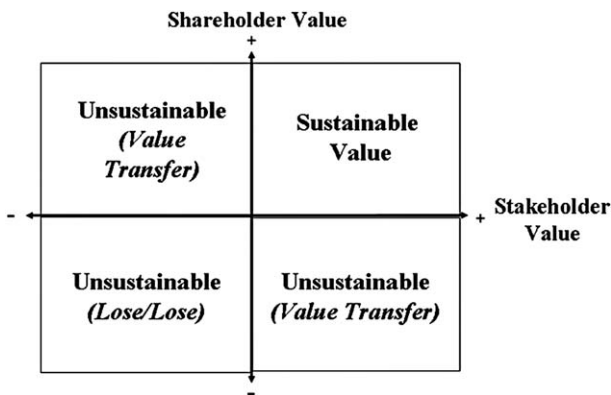


Fig. 2. Laszlo’s Sustainable Value Matrix. Source: Adapted from Laszlo (2008), used with kind permission of Greenleaf Publishing.

Creating high stakeholder value at the expense of shareholder value (the bottom-right quadrant of the Laszlo's (2005, 2008) sustainable value matrix) – the traditional “save the whales” perception of socially minded business showcased in the bottom-right quadrant of the sustainable value matrix – is equally unsustainable, as it decreases company resources and competitiveness, threatening its overall existence and profitability. Russia's Sual Group, before being acquired by Rusal, faced tension with its own factory directors over excessive spending in the social domain, topping \$23 million a year – a significant value transferred from shareholders to stakeholders. The unsustainable amount forced the company to find new partnership mechanisms for socioeconomic development, decreasing company investments in this area by 75% while, at the same time, increasing the impact of its social efforts (Zhexembayeva & Fry, 2008).

The win-win approach of creating value for both shareholders and stakeholders offers a wide range of benefits for a long-term sustainable advantage. Going far beyond reputational dividends popularized by the CSR movement, sustainable value yields benefits such as lowered risks, increased cost-efficiency, new product development, better product differentiation, and access to new markets (Laszlo, 2005, 2008). In a world in which intangible value is a growing proportion of a company's market capitalization (Baruch, 2001), sustainable value creates goodwill and enhances corporate reputation. A successful sustainable value strategy leads to more loyal customers, a greater ability to hire and retain talent, more engaged employees, more positive media coverage, newly constructive relationships with non-governmental organizations, and government agencies' willingness to partner in shaping industry standard (Zhexembayeva & Laszlo, 2009).

Nike, the world's leading manufacturer of athletic shoes, apparel, and equipment, has been developing its sustainable value capacity since mid-1990s. Nike started its sustainability journey with an intensive employee education program focused on action learning, whereby employees used the newly acquired sustainability knowledge to brainstorm immediate process and product innovations. Among innovations ignited by Nike employee education and engagement program are such efforts as 95% reduction of the use of petrochemical-based solvents, which created safer working conditions, reduced environmental impact, and generated raw material cost savings; for example, the 2003 savings are estimated at \$4.5 million, without considering other related savings on shipping, storage, and labor (Mackrael, 2009).

In 2008, Nestlé, the world's leading nutrition, health, and wellness company, entered this paradigm under the highly publicized banner of

“Creating Shared Value,” whereby the company is committed to match all social efforts with business benefits, reporting such early successes as “reducing our environmental footprint and reducing operational costs” and “expanding lower income segment’s access to nutrition and broadening our customer base” in its recent report (Porter & Kramer, 2006; Nestle, 2008).

Interros, one of Russia’s largest private investment companies, has entered into its first experiment in creating a truly sustainable value by launching an international investment project for the development of alternative energy sources (Interros, 2009). First, a national investment company “New Energy Projects” was created to coordinate and accumulate, in partnership with the Russian Sciences Academy, all scientific research results in the field of hydrogen technologies. Then, 35% of the American Company Plug Power Inc. was acquired, allowing Interros to tap into the expertise of this major researcher and manufacturer of equipment for hydrogen technologies (Kilgore, 2006). The resulting partnership promises to offer significant shareholder return while, at the same time, responding to the needs of a wide range of stakeholders concerned with dependency of a fossil fuel economy.

What is important to point out here is that the idea of sustainable value is not synonymous with the vision of a sustainable enterprise or a sustainable company – in other words, succeeding at creating sustainable value does not automatically make a company sustainable. Most of the companies listed above as positive examples of creating and capturing sustainable value have indeed had their share of creating significant damage to stakeholders and society at large. Nike has experienced significant public uproar as a reaction to its labor standards and environmental practices (Hart & Milstein, 2003). More than 30 years after the 1977 public boycott protesting Nestle’s policies for promoting infant formula as a substitution for breast milk in developing countries, the company has not yet fully cleared its image, with media reports on the issue as recent as *The Guardian’s* 2007 report (Moorhead, 2007). Interros has also had its share of controversy and questionable social impact, including tax probes of the companies in Interros portfolio (Helmer, 2004). Recent commitments, innovations, and early accomplishments in sustainable value creation represent only a step toward developing a truly sustainable enterprise.

However, with all limitations and complexities of sustainability efforts acknowledged, what Nike, Nestle, and Interros do suggest is that at the core, Laszlo’s (2005, 2008) concept of sustainable value is calling for a vision of a whole new value – with a strong emphasis on the idea of wholeness. In contrast to the limited notions of shareholder value, stakeholder value, or

customer value, sustainable value invites wholeness at a range of dimensions:

- *The wholeness of “who”*: Creation of sustainable value requires consideration for and engagements of interests, demands, opinions, and commitments of all parties involved – shareholders, employees, customers, suppliers, local communities, media, government, and society at large.
- *The wholeness of “what”*: Creation of sustainable value demands deep integration of social and environmental considerations into the entire make up of the product or service created by your company. Product design, composition, performance, and end-of-life are reenvisioned, bringing together consumer value, shareholder value, and stakeholder value.
- *The wholeness of “how”*: Creation of sustainable value expands the traditional organizational boundaries, commanding deep understanding and active redesign of the entire value chain, upstream from raw material extraction and downstream all the way to product disposal. Every step of the chain and every corresponding process and policy are reenvisioned, creating a whole process for a whole value.
- *The wholeness of “why”*: Finally, creation of sustainable value brings back and reconfirms the vital and essentially positive role of business in society as an engine of innovation, well-being, and prosperity in the broadest possible terms, giving back nobility and purpose to the management profession.

While the concept of a whole, sustainable value offers a qualitatively different, breakthrough alternative to the inefficient, carbon-intensive, stakeholder-alienated, short-term oriented throwaway economy of the present, its appeal is only proportionate to the difficulty of its implementation. In the world where specialization rules, functional silos are celebrated, organizational boundaries are tightened, stakeholders are at odds with shareholders, and outsourcing is a must, the idea of wholeness may appear as a less than obvious choice. Even more important than the sheer willingness to try is the ability to create value that is truly whole and sustainable. Innovation, design, stakeholder management, process facilitation, reengineering, and employee engagement mark only a tip of the iceberg of skills required for the deep reinvention of the entire business model for mutual benefit (Epstein, 2008; Laszlo & Cooperrider, 2008; Dunphy, Griffiths, & Benn, 2007). Yet, among the sea of skills required for sustainable value creation, two qualities appear as fundamental for the entire process:

- *Envisioning, discovering the whole value:* Essentially an individual skill, the ability to reframe the value creation process to discover and envision the possibilities for mutual benefit is best represented by Thatchenkery and Metzker's (2006) concept of appreciative intelligence. It is defined as "the ability to perceive the positive inherent generative potential within the present ... the ability to see the might oak in the acorn" (Thatchenkery & Metzker, 2006, p. 4), appreciative intelligence allows sustainability pioneers use environmental and social considerations as a new lens to see business anew, discover small wins and low-hanging fruit to fuel the present, and envision big wins and breakthrough innovations to aspire to in the future. Seeing the glimpse of the future in the small wins of the present is essential for a successful journey toward the whole, new, sustainable value.
- *Changing at the scale of the whole:* While the art of appreciative intelligence develops the vision and sets the destination of sustainable value journey, another, essentially organizational capacity is required to make sure that the journey itself is successful and that is the ability to lead change of the entire organizational system. Complexity and immensity of the sustainability challenge demands that organizations "change at the scale of the whole," as David Cooperrider (2008) puts it, engaging all stakeholders along the entire value chain in the task of redesigning and reinventing its value creation model. The concept of appreciative inquiry (AI) (Cooperrider & Srivastva, 1987; Cooperrider, Sorensen, Yaeger, & Whitney, 2001), cocreated by David Cooperrider, is uniquely designed to achieve the task of moving the whole system collectively.

As the recent years marked the shift in the way business creates value, the rippling effects of this shift are spreading across the globe, carrying along to every shore a new vision of a whole, sustainable value. Even with the demanding skills required for sustainable value creation, it is already clear that the idea of sustainable value is no longer about "if" or "why," but of "when" and "how" (Epstein, 2008). With that, for most organizations the question is: will your company wait until the ripple of change reaches its boundaries, forcing the business to adopt, or will you start transforming future social and ecological threats into present business opportunities now, creating value for your company and for society? What will be the catalyst for change – pain or vision?

DISCOVERING SUSTAINABLE VALUE: THE CALL FOR APPRECIATIVE INTELLIGENCE

Naturally, the path of vision represents a harder road, but also promises higher returns of a first-mover operating deliberately and by design. So, when the trends that are changing the rules of value creation are well understood and the desire to turn these trends into opportunities has grown, where do you start? How do you develop the mighty qualities of appreciative intelligence among your employees? How do you choose the seeds of future change – discovering the low-hanging fruit, the early win to begin with?

For Lafarge, a leading French-based building materials company present in 76 countries, the analysis of social and environmental risks suggested that local community engagement, better waste management, and investment into green building technologies represent the most important strategic directions for sustainable value creation. Among early successes is the waste management company Eco-processa, created in 2004 as a joint venture between Lafarge and Cimpor in Brazil, set up to supply Lafarge and Cimpor's factories with waste to be used as an alternative. In 2006, the joint venture coprocessed 115,000 tons of waste and set the target for 2009 at 350,000 tons. In its factories in Cantagalo, Matozinhos, and Arcos, Lafarge has reduced fossil fuel consumption by 25,000 tons and raw material consumption by 10,000 tons, thanks to the collection and recycling of waste; similar projects are set up by Lafarge throughout the world (World Business Council for Sustainable Development, 2007; Lafarge, 2009).

For Troika Dialog, Russia's largest and oldest private investment bank, poor corporate governance and financial discipline of Russian companies presented a significant social risk. The company turned the risk into an opportunity by introducing a new product as a part of its market research offers. The Corporate Governance Risks Report ranks investment risks associated with corporate governance performance of the nation's largest companies. Since its introduction, the report grew into one of the most demanded research products, while catalyzing positive changes in governance, transparency, and discipline of Russian companies (Zhexembayeva, 2007, 2008; Shekshnia & Kets de Vries, 2003).

For Wal-Mart, an international retail giant, cost and supply management stands at the center of its success and long-term strategy, so the sustainable value efforts introduced by the company in mid-2004 were aligned with its traditional operational strengths and strategic priorities (Plambeck &

Denend, 2008). Redesign of packaging and distribution models allowed for significant reduction of paper, plastic, and fuel expenses – all on top of significant environmental benefits. One of the Wal-Mart's first experiments in this domain, an effort to "right-size" the packaging for a children toy product line, saved 3,425 tons of corrugated paper materials, 1,358 barrels of oil, 5,190 trees, 727 shipping containers, while creating savings of \$3.5 million in transportation costs (Wal-Mart, 2009). Wal-Mart took advantage of its scale and deep knowledge of the supply chain management to make sure that new eco-smart products are introduced throughout Wal-Mart stores at low prices, helping to attract new customers. Hundreds of similar initiatives have been implemented at Wal-Mart since 2004 (Plambeck & Denend, 2008).

For General Electric (GE), innovation is the core driver for the company's value proposition, and the company's sustainability work is fully aligned with this strategic strength. Connecting its many "green" efforts into one coherent cross-company program, in 2005 GE launched its highly visible "Ecomagination" program (Wood, 2007), which includes innovations ranging from energy-efficient light bulbs to fuel-efficient and low-polluting locomotives to GE money eco MasterCard supports greenhouse gas offsetting. In 2007, GE's "green harvest" went up to \$14 billion, a revenue level that increased more than 15% from 2006, with revenue of \$25 billion projected for 2010. Jeff Immelt, Chairman and CEO, speaks pointedly about this alignment of corporate strategy, social needs, and company profits: "We are going to solve tough customer and global problems and make money doing it" (GE, 2009).

For decades, India's Tata Group put the philosophy of "business excellence" at the center for its long-term strategy. It has focused on the area of operations for ongoing quality improvement in ways that benefit Indian society – building hospitals and schools to assure high-quality workforce long before it was fashionable to do so. So, it makes sense that the recent sustainability efforts of the Group will also lie in the area of operations, more specifically, energy. Currently, the company's priority targets include energy efficiency improvements, methane recovery to allow for fuel switch in plants, harvesting alternative sources of energy like solar and wind, steam power generation, and waste heat recovery power generation (Deshmukh & Adhikari, 2009; Tata, 2009).

What Lafarge, Troika, Wal-Mart, GE, Tata, and hundreds of others are proving is that sustainable value creation is about advancing your existing, rather than developing a new, strategy. Sustainable value is not a ready-made fit-for-all solution – rather, it is a framework of thinking about

long-term value creation that is to be tailored to the needs, wants, and existing strategic choices of your company.

CHANGING AT THE SCALE OF THE WHOLE: THE CALL FOR APPRECIATIVE INQUIRY

While the above exposition might create an illusion that the movement toward sustainable value represents a sequential, linear path, our research and practice prove that it is anything but a clear step-by-step process. The task of moving from traditional business strategy toward a truly sustainable value model can be compared to the task of transforming a well-functioning vacuum cleaner into the world's best TV set – without unplugging or slowing down its performance – so no “five easy steps” would do. We might write about the discovery of sustainable value before we speak about whole-system organizational change, but in reality the two activities are deeply interwoven, interdependent strands of an iterative process.

However, it is useful to separate the conversation about the content of the sustainable value strategy from the process of such strategy development and implementation. It is not only about what will be your own sustainable value strategy – in many cases it is even more important how the strategy was developed and implemented.

The new vision of whole, sustainable value offers a number of significant challenges representing a barrier for leading change successfully:

- *From independence to interdependence:* The recent value shift has redefined the boundaries of a modern company. Now, it is not enough to consider the impact and viability of strategic decisions within the boundaries of the company – to create sustainable value, a company must know and manage social and environmental performance along the entire life cycle value chain, upstream to raw materials and downstream to product end-of-life.
- *From marginal PR issue to essential factor of business success:* Traditionally, most social and environmental projects have been handled by public relations, human resource, or legal departments, whereby line managers have all the reasons to see any socially minded initiative as time-consuming value destruction or an annoying caprice of top management. The vision of sustainable value makes a case for integrated value creation process, where the company's financial performance is interlaced with and enhanced by its social and environmental strategy.

- *From maintenance to design:* The rapid change in the competitive environment caused by the massive decline in resources and increase in social expectations is creating new business challenges, the like of which has not been seen before. With no obvious solutions and formulas in existence, and little “best practices” accumulated, the transition toward a truly sustainable value paradigm requires a willingness and appetite for constant innovation, creation, and design rather than maintenance of existing business models and approaches.
- *From short term to balancing short and long term:* As the opportunities and risks presented by the emerging social and environmental terrain change rapidly, it is no longer acceptable to operate within the traditional quarterly and yearly focus. Whether developing a new product, assessing a new market, or searching for a new source of capital, an expanded time horizon is necessary to predict and address issues of strategic relevance. Development of a new mindset, supported by new performance measurements systems, is necessary to prevent short-term return maximization at the expense of long-term value creation.

It is hard to find an approach to change management and strategy development that meets these challenges of sustainable value creation better than AI. Designed specifically for large-scale organizational change, AI has recently been used to introduce and enhance sustainability efforts in business.

Built on the conviction that the traditional problem-solving techniques force managers to become experts in understanding – and ultimately repeating – their own mistakes, AI invites companies to apply equally rigorous analysis to past successes within and beyond company borders. In addition to the shift in the “what” of strategy analysis and development, AI also changes the “who” and the “how” of strategic planning, engaging a significant group of company stakeholders – managers, employees, suppliers, customers, regulatory authorities, and community members – in structured dialogues and action planning aimed at scaling up organizational strengths and engaging the entire system rapidly.

Green Mountain Coffee Roasters, which made it to number one on the list of *Corporate Responsibility Officer Magazine’s* 100 Best Corporate Citizens in 2006 and 2007, has been using AI for its sustainability needs since 2000 (Kinni, 2003). Fairmount Minerals, a newcomer to the sustainability world, ran its first whole-company AI Summit in 2005, which allowed for realignment of strategy and led to new product development, core process

improvements, and increased employee engagement (Cooperrider, Whitney, & Stavros, 2008). In 2008, Wal-Mart used AI with its sustainability efforts, managing a successful multistakeholder process for whole-industry change for Wal-Mart dairy suppliers (Innovation Center for US Dairy, 2009).

Green Mountain Coffee Roasters, Fairmount Minerals, and dairy industry all used a well-developed and, perhaps, the most beloved methodology within the AI platform, namely, the AI Summit. Mohr and Ludema (2006) describe the methodology in the following way:

The Appreciative Inquiry Summit is a method for accelerating change by involving a broad range of internal and external stakeholders in the change process. Typically an event or a series of events of 3–5 days in lengths, a summit brings people together to: (1) discover collective competencies and strengths, (2) envision opportunities for positive change, (3) design the desired changes, and (4) implement and sustain change making it work. (Mohr & Ludema, 2006, p. 2)

But more than a single event, AI Summit is an extensive process that engages the organization top–down and bottom–up, with the off-site serving as a high-energy pinnacle of sustainable value creation process. Fig. 3 offers an overview of the AI Summit process as it applies to change management for sustainable value.

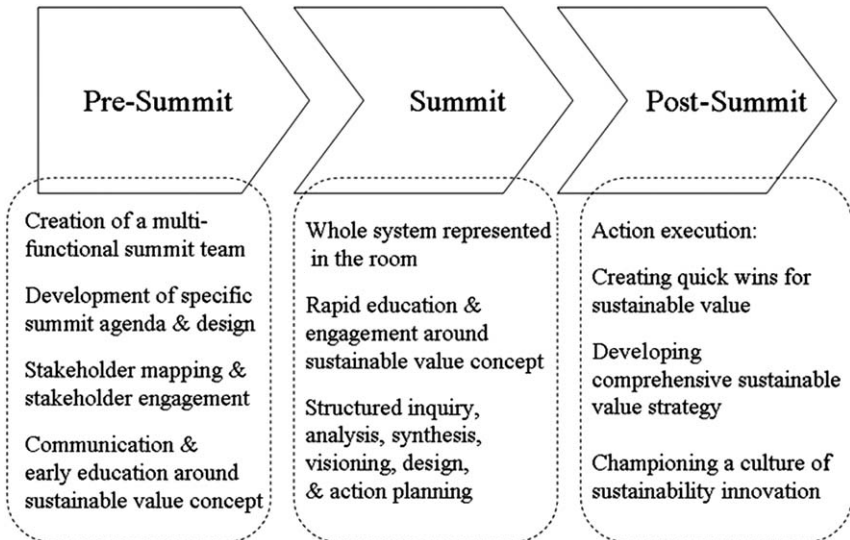


Fig. 3. Appreciative Inquiry Sustainable Value Summit.

The power of utilizing AI Summit for the sustainable value challenge has been illustrated in full by the story of Fairmount Minerals, a leading industrial sand manufacturer in USA based in Chardon, Ohio, as told in a commentary by David Cooperrider (2008) and elaborated further in the *Appreciative Inquiry Handbook* (Cooperrider et al., 2008). On August 29, 2005, more than 300 people came together in Eaglewood Resort to take part in the Fairmount Minerals AI Summit, held under an imaginative title of “SiO₂”: the chemical formula for sand silica was chosen to abbreviate the summit theme, “Sustainability in Our Organization.” Mixed across functions and stakeholder groups, participants seated at roundtables were quickly led into inquiry and then on into group dialogue, community votes, rapid prototyping, and post-summit planning. The intense three-day summit was a child of a dedicated summit organization team, which took formal training in sustainability issues and AI method to launch its summit design and execution work. It is no surprise, then, that by August 31st the company was buzzing with pilot projects, task groups, and early solutions. It seems that the words of Jenniffer Deckard, company’s chief financial officer, offered at the start of the summit, took on their own lives:

Not since days of the Great Depression has there been such severe decline of public trust in business and in our economic system – nor there have been a better opportunity to build a new era of business-led excellence and leadership in our industry and beyond. We believe that doing good and doing well go hand in hand and that economic prosperity, environmental stewardship, and empowerment of people can, in an integrated way, become a source of innovation and competitive advantage for the long term. (Cooperrider et al., 2008, p. 172)

The 2005 Summit laid the foundation for complete overhaul of Fairmount Minerals strategy and practices. Since then, the company developed new processes such as reuse of “spent” sand; new products, such as a low-cost sand water filter for developing nations; and new relationships, such as stakeholder dialogues which connected sustainability views of more than 850 stakeholders (Cooperrider et al., 2008).

In general, solutions similar to AI leapfrog a company toward an aligned sustainable value strategy, while energizing its employees to follow through on the designed goals and models. At its best, AI answers the call to wholeness offered by the vision of sustainable value – it expands organizational boundaries to include wide range of stakeholders into the decision-making process; it fosters cross-functional dialogue that ignites rapid innovation and places sustainability at the core of business; it connects past, present, and future to move beyond the accepted short-term thinking for long-term visioning. AI meets the challenge of the vision of sustainable

value with the emergence of the whole new principles of organizational change for the whole new value.

Changing at a New Scale: Principle of the Whole

Fragmentation and concentration seems to be the foundation of modern business – our companies operate with clear boundaries, each department assigned its specific function, each step of the processes positioned along the conveyor belt, with most business decisions tackled in isolation by a small group. Sustainability, on another side, is a highly complex problem, with most issues demanding total involvement of the entire company and, even more importantly, deep engagement of a broad group of stakeholders, including suppliers, customers, and local communities. With most business methods not equipped to deal with such issue, companies often fail to make any meaningful progress in the domain of social and environmental performance, threatening the company overall competitiveness and, ultimately, very existence. AI challenges the fragmented nature of business decision making, demanding the whole system engagement in the change process and providing practical and productive tools for such engagement.

Looking for Change in all the New Places: Principle of Possibility

It has become the axiom of business life: managers are problem-solvers and it is our job to isolate, understand, and eliminate failures of every kind. Apply this “job description” to the challenges of social and environmental strategy and it becomes clear why the most popular approaches to business-in-society relationships, such as CSR, have been producing little more than mutual blame, stakeholder isolation, and miniscule progress. AI allows us to leave behind the wounds, conflicts, and blame of the past by reframing the angle of the change management process: instead of inquiry into failures, it looks into past successes, uncovering, magnifying, and spreading the possibility of sustainable value.

Coconstructing in a New Way: Principle of Design

Modern business education seems to be in love with the concept of managing as decision making, whereby a future manager is trained with case after case to identify potential choices quickly and do a thorough analysis of

the benefits of each choice. With this problem-solving focus, little room is left for long-term visions, strategic reflection, and, most importantly, innovation. Sustainability, however, is not an easy case to crack and no simple alternatives are available to choose from. Sustainability requires creation – whereby solutions are codesigned, invented by a group of engaged stakeholders. With many companies failing to foster creativity and innovation for sustainable value, AI offers specific tools and approaches that unite the most creative minds with the most pressing issues.

As the 2008–2009 world economic crisis continues to march throughout the globe, ever so pointedly highlighting the us-versus-them version of business–society relationship, the concept of sustainable value – a win–win for business and society – brings about a much needed fresh vision. As the massive shift in value creation continues to spread throughout industries and economies, the idea of sustainable value is often no longer about “if” or “why,” but of “when” and “how.” Companies that understand this wave of change are already riding ahead of it, harvesting profits, and creating long-term benefits for business and the world at large – and they use the powers of AI to make the ever-more-important transition. They do that because they recognize the deep interdependence between business and society. Perhaps, Bertrand Collomb, the former chairman and CEO of Lafarge, said it best: “Business cannot succeed in a world that fails” (Center for Business as an Agent of World Benefit, 2006). Many companies have already shown that saving the failing world might just be the best way to assure long-term and sustainable business success. The question is – will you?

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THE ROAD TO SUSTAINABLE VALUE: THE PATH-DEPENDENT CONSTRUCTION OF SUSTAINABLE INNOVATION AS SOCIOMATERIAL PRACTICES IN THE CAR INDUSTRY

Wietske van Osch and Michel Avital

ABSTRACT

Sustainable innovation is not only about the design of radical “green” technologies, it is also about generating social and institutional support that complement and reinforce the adoption and diffusion of these technologies at large. Hence, treating the ecologically hazardous nature of the prevalent technologies alone is insufficient without complementary social change. Building on a longitudinal study of sustainable innovation in the car industry, we argue that the prevailing discourse that is centered on the creation of business value is unlikely to facilitate the widespread adoption of sustainable technologies. Furthermore, taking into consideration the sociomateriality of sustainable innovation, we rather suggest that a focus on creating social value is indispensable for triggering the desired change

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 99–116

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003010

toward sustainable value. Following the analysis of sustainable innovation in the car industry, we generate two relevant insights for sustainable value. First, our results demonstrate the path-dependent nature of sustainable innovation, which is constrained and sustained by the materiality, social structures, and institutional frameworks that comprise the overall socio-technical system in which innovation takes place. Second, our findings show that a successful diffusion of radical sustainable innovation requires both technological innovation and complementary social changes that together can disrupt the existing evolutionary path of technology and construct more sustainable alternatives. All in all, we argue that reframing the discourse around social value in lieu of monetary value can be leveraged by organizations for shaping alternative courses of action, creating innovative technologies, and developing novel practices that create sustainable value for all stakeholders in society.

INTRODUCTION

Sustainable innovation is not only about the design of radical “green” technologies, it is also about generating social and institutional support that complement and reinforce the adoption and diffusion of these technologies at large. Hence, treating the environmentally hazardous nature of the prevalent technologies alone is insufficient without complementary social changes. Building on a longitudinal study of sustainable innovation in the car industry, we argue that the prevailing paradigm that is centered on the creation of business value is unlikely to facilitate a widespread adoption of sustainable technologies. Alternatively, we suggest that a sharper focus on the creation of social value would be more conducive to triggering the desired changes toward sustainable value.

In this chapter, we aim to explain why some sustainable technologies become successful while other technologies do not. We draw on analyses of sustainable innovation in the car industry and pay special attention to its social as well as its technical aspects. Given that understanding the coevolution of the social and the material requires a temporal perspective (Leonardi & Barley, 2008), we developed a longitudinal case study of sustainable innovation in two major carmakers, General Motors (GM) and Toyota. In all, we analyzed an exhaustive set of 286 *Financial Times* articles published between 1990 and 2009.

Our study generated two key insights into sustainable value creation. First, our findings reveal the path-dependent nature of sustainable innovation. In

other words, the development and diffusion of radical sustainable technologies is constrained and enabled by the materiality, social structures, and institutional frameworks that comprise the overall sociotechnical system in which innovation takes place. This implies that assessing the sustainable potential of technological innovation requires an understanding of the ways in which our existing social and institutional frameworks reinforce existing unsustainable technology paths and constrain possible alternatives.

Second, the case of the car industry demonstrates that a radical technological innovation alone cannot trigger a disruption in the evolutionary path of the dominant unsustainable technology – i.e., the internal combustion engine – without a complementary social change that reinforces and sustains the diffusion of the more sustainable alternatives. In other words, a complementary social change is a prerequisite for the success of radical green innovations.

Overall, we contend that the prevailing discourse that is centered on the creation of business value is unlikely to facilitate the widespread adoption of sustainable technologies. Furthermore, taking into consideration the socio-materiality of sustainable innovation, we rather suggest that a focus on creating social value is indispensable for triggering the desired change toward sustainable value. Hence, by reframing the discourse around social value in lieu of monetary value, organizations and scholars can construct an affirmative semantic framework that enables them to shape alternative courses of action, to create innovative technologies, and to develop novel practices that create sustainable value for all stakeholders in society.

Next, following a description of the research design, we present technological innovation as a path-dependent process based on our analysis of the two case companies. Finally, we discuss the implications of the findings for approaching the challenges and opportunities associated with sustainable innovation.

RESEARCH DESIGN

Following a multiple-case studies approach (Yin, 1994), we analyzed two case companies – General Motors and Toyota – in order to reveal *what determinants and patterns influence the adoption and diffusion of radical sustainable innovations in the car industry*. Results were obtained from an extensive content analysis of 286 *Financial Times* articles from 1990 until 2009 with the company as the unit of analysis.

The use of the case study method enabled us to gain in-depth understanding of the case companies and the contexts in which they operate. In combination with our longitudinal data set, it allowed us to look for clear causal links and interactions between the social and the material, as well as to identify patterns of path dependence. Finally, by relying on two case analyses and cross-case comparisons, we enhanced our confidence about the reliability and validity of our findings.

Case Selection

Traditionally, the car industry is not regarded as being particularly proactive, innovative, or environmentally friendly (Roome, 1994). Nevertheless, it has always been one of the first targets for new environmental regulation (Den Hond, 1996) and consequently other industries have been able to learn from strategies developed in the car industry.

We decided to analyze the car industry beginning from 1990 when environmental issues appeared on the agenda of car producers worldwide. That year, the California Air Resource Board (CARB) proclaimed its zero-emission vehicle (ZEV) program, which was prompted primarily by the massive smog and congestion problems in the Los Angeles area. The aim of the ZEV program was to gradually increase the number of ZEVs in the state of California.

Moreover, during the 1990s, climate change became an important issue worldwide, which culminated in the Kyoto Protocol in 1997. Consequently, from the 1990s onwards, carmakers have reacted with novel technological and organizational innovations, mainly to comply with the new regulatory landscape.

With respect to low-emission vehicle (LEV) technology development, in particular, General Motors and Toyota can be considered forerunners in the industry. Furthermore, these companies display several contrasting characteristics (see details in Table 1), which make the cases particularly interesting for theoretical replication (Yin, 1994).

Data Collection and Analysis

We relied on the *Financial Times* as our main data source for a number of reasons. First and foremost, we selected this publication because of its business focus and its high-quality reporting. Additionally, the *Financial Times* has comprehensive coverage. It reports on important new products

Table 1. Juxtaposing the Two Case Companies.

	General Motors	Toyota
Origin	USA	Japan
Main LEV focus	Early 1990s: electric vehicle Late 1990s onwards: also fuel-cell vehicles	Hybrid vehicles
Success	Mixed results: commercially viable output, yet, no profit	Successful: commercially viable output and profitable
Examples	Impact, EV1, Volt, AUTOnomy	Prius, Camry, RiN

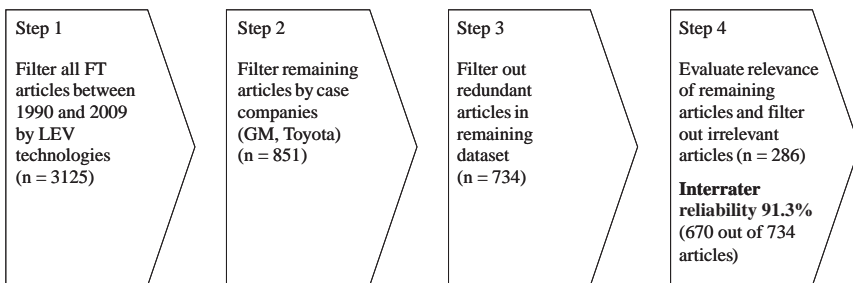


Fig. 1. Data Collection and Data Set Development Process.

and strategies as well as social and institutional barriers and drivers of technological innovation. Furthermore, newspaper articles are a relatively stable and consistent source of longitudinal information about a company’s strategies and innovation with respect to LEV technology vis-à-vis the evolving discourses on a corporate, industrial, and societal level. Finally, newspaper data are free of bias with respect to this particular study (Yin, 1994), and hence it can provide relatively reliable insights.

The data collection and data set development process – as summarized in Fig. 1 – were performed in a stepwise manner; encompassing four filtering stages that resulted in a final, exhaustive data set of 286 articles that span over 580 pages of text.

This remaining set was subsequently imported into *NVivo* for coding and analysis. The stepwise data analysis process, involving a combination of structured and open coding schemes as well as causal chain analyses, is briefly summarized in Fig. 2.

The categories that emerged, and the analysis of events in the car industry, resulted in unambiguous evidence regarding the path-dependent

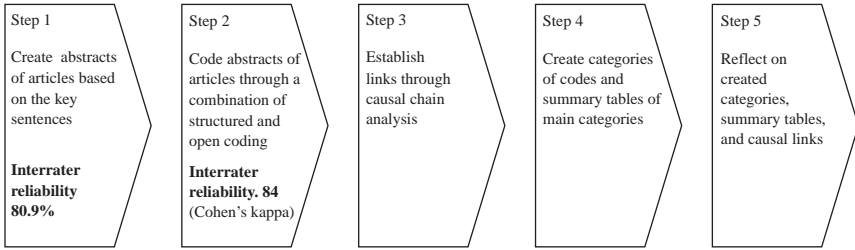


Fig. 2. Data Analysis Process.

and sociomaterial nature of sustainable innovation, which we describe in detail in the next section.

RESULTS

In this section, we first set the stage by providing a brief history of the development of the dominant technology in the automotive industry. Then, we explore the path-dependent and sociomaterial nature of sustainable value creation as observed through the analysis of related news articles from the past 20 years.

The Path Leading to the Dominance of the Internal Combustion Engine

Around 1900, automobiles were mainly equipped with three different propulsion technologies: steam, gasoline, and electric engines, each of which accounted for approximately a third of all cars (Mowery & Rosenberg, 1998). The electric car had considerable advantages over gasoline-driven cars because it did not vibrate, smell, or make a noise, and neither did it require gearing nor manual effort to start the engine. The electric car range of approximately 40 miles was not a major obstacle because cars were used mostly for short rides and the large-scale road infrastructure was not yet in place.

However, around 1920, through a number of contingent social and technological events, the internal combustion engine gained a significant market share and eventually became the dominant technology. A milestone in technological development was the invention of the electric starter as well as the muffler, which made gasoline cars more convenient. Simultaneously, the development of a national road infrastructure, promoted by the Wilson

administration and the Federal Road Act in 1916, fostered the demand for longer range vehicles (McShane, 1994). Moreover, car companies – in collaboration with oil and tire companies – began to buy and substitute urban rail systems with gasoline-powered buses and cars (Calkins, 2008). Additionally, the discovery of huge oil fields made the propulsion resource inexpensive and the high-energy density of gasoline enabled a longer range and higher speed. Hence, by the 1920s, 99% of all cars were equipped with an internal combustion engine.

Consequently, a sociotechnical system emerged around the internal combustion engine, encompassing several sources of lock-in (Mahoney, 2000; Unruh, 2002). On a technological level, standard architectures emerged that created economies of scale and learning. Subsequently, on an organizational level, routines, production facilities, and customer–supplier relations were developed and solidified, constituting additional sources of inertia. Furthermore, the growing diffusion of gasoline cars led to an adaptation of consumer preferences and expectations. Simultaneously, in the face of this increasing popularity, support structures – most importantly refueling infrastructures – and institutional frameworks emerged and developed around the dominant combustion engine technology, providing a further source of lock-in.

Yet, despite the unimpaired dominance of the internal combustion engine after 1920, the electric car had two short periods of revival in the 1960s and the 1980s. The first period was triggered primarily by green movements that were rooted in the hippie subculture, and the second by escalating the gasoline price following the oil crises of 1973 and 1979. However, both waves swiftly lost momentum.

Case Descriptions: Stories of Path Dependence

In what follows, we briefly describe the two case companies – General Motors and Toyota – and how each company chose a fundamentally different path of LEV development, with varying success (Table 1).

General Motors

In a continuous search for better propulsion technologies, General Motors (GM) has conducted extensive research in the area of electric vehicles, which in turn yielded several electric concept cars over the years. In 1987, together with the small entrepreneurial company “AeroVironment,” GM engaged in building an electric vehicle – the Sunraycer – for the Australian World Solar

Challenge and it won the competition. Subsequently, GM began to develop a purpose-built electric car, the Impact, which was presented three years later at the Los Angeles Motor Show in January 1990.

The development of the Impact was timely as until then energy efficiency or pollution control were unimportant issues for the car industry (Leitman & Brant, 2009). However, these became increasingly important due to rising oil prices and the announcement of the ZEV Program by the CARB. After ample testing, GM's Impact was put into production in 1996 and commercialized as the EV1. However, after a short trial run the program was discontinued because the EV1 did not meet the expectations and functional requirements of the larger customer group. Nevertheless, the EV1 experience motivated GM to further the development of alternative propulsion technologies, in particular fuel cells, and apply several technological elements of the electric vehicle to its hybrid and fuel-cell concept cars.

Toyota

Whereas GM focused primarily on electric vehicles, the success of hybrid vehicles can largely be attributed to Toyota, which was the first company to commercialize this technology. However, the Japanese car company, known for its high quality cars, has never been a real pioneer of radical new technologies (Taylor, Kano, & Levinstein, 2006). Rather, Toyota was widely known for being a fast follower; and owing to its lean production system it was able to make highly cost-efficient and premium quality cars. Nevertheless, the development of the Prius created a halo around Toyota, which was perceived as an innovative and green company.

Besides its primary engagement with hybrid technology, Toyota also invested in electric cars and fuel-cell vehicles. In the early 1990s after the CARB initiated the ZEV Program, it presented the RAV4 EV, an electric version of the usually gasoline-driven SUV. The RAV4 and later the Highlander were also the platform for Toyota's first fuel-cell vehicle attempts. However, these prototypes never made it beyond a small-scale testing phase.

Contingent Critical Events in the Development of LEV Technologies

To understand why some sustainable technologies became successful and other technologies never made it beyond the prototype stage, we need to broaden the analysis span beyond the technological development and explore the social realm in which these technologies are embedded. In the

remainder of this section, we provide a rich description of the critical social, economic, technological, and institutional incidents and changes that triggered the development of LEV technologies by GM and Toyota as summarized in Table 2 and illustrated in Fig. 3.

In Fig. 3, we provide an overview of the sustainable innovation paths of the two case companies and connect the technological and social elements of sustainable innovation. Here, the technological (i.e., material) element is reflected by the LEV technology outputs of GM and Toyota. In the same fashion, the social element is represented by regulatory and institutional events, as well as contextual indicators of environmental awareness and oil price indices. The latter were identified in our data set as the key social factors affecting technological innovation. We inferred the regulatory and institutional events directly from the data set. Subsequently, we use the KLD's Domini 400 – a stock index of 400 publicly traded American companies that have met certain standards of social and environmental excellence – as a proxy for the level of societal environmental awareness in the period 1990–2009. Additionally, we present the oil prices by an index of actual oil prices in the period 1990–2009.

Zero-Emission Vehicle Program of the Californian Air Resource Board

The implementation of the ZEV program by the CARB in 1990 represents the major trigger that prompted the sudden interest for and development of alternative propulsion technologies by all major carmakers.

The program initially aimed at reducing air pollution because of severe smog problems in Los Angeles. However, motivated by the viability of GM's Impact, the CARB implemented the ZEV program, which ruled that each of the seven largest U.S. carmakers would be required to make 2% of its fleet emission-free by 1998, 5% by 2001, and 10% by 2003, in order to continue to sell cars in California.

Moreover, California did not have a significant car industry in the 1980s; the CARB therefore regarded the electric vehicle market as a high potential industry that could solve the smog problem in major cities while simultaneously nurturing the local economy by providing future jobs and new markets for the military industry and local knowledge ventures (Schot, Hoogma, & Elzen, 1994).

The CARB in general and the ZEV program in particular had a powerful influence on car producers given that the state of California is one of the biggest and most profitable car markets in the world, and that environmental standards introduced by the CARB are frequently adopted by Federal Law and other countries. The ZEV program was introduced before

Table 2. Summary of Contingent Events.

Underlying Cause	Contingent Events	Purpose/Goals	Effects/Results
LA smog problem	CARB	To reduce 70% emission by 2003; 2% of all cars in 1998 should be ZEV, rising to 5% in 2001 and 10% in 2003	Toyota: RAV4 EV and Prius; GM: EV1 USABC
Intensified overseas competition; environmental awareness	PNGV	To develop new fuel-efficient vehicles by 2003; improve competitiveness of U.S. car industry	GM: Precept
Awareness of environmental problems	Kyoto Protocol	To reduce greenhouse gas concentrations	Environmental awareness
CARB's ZEV Program; increased environmental awareness; rising oil prices	Prius	To achieve better fuel economy in order to comply with the CARB's regulation	GM: Silverado, etc. Toyota: more HVs and RiN
High CO ₂ emissions from transportation	EU CO ₂ Regulation	To reach an average CO ₂ emission of 120 g/km for all new passenger cars by 2012	Toyota: AYGO
Air pollution and greenhouse gas emissions	CaFCP	To demonstrate/promote the potential for fuel-cell vehicles as a clean, safe, and practical alternative	GM: AUTOnomy (Hy-wire) Toyota: Fine-N
Energy security worries and rising oil prices due to war in Iraq and 9/11	FreedomCAR	To enable transition to a hydrogen transportation economy, with greater freedom of mobility and energy security, while reducing environmental impact	Stimulates interest in fuel cells as well as plug-in hybrids (GM: Volt)

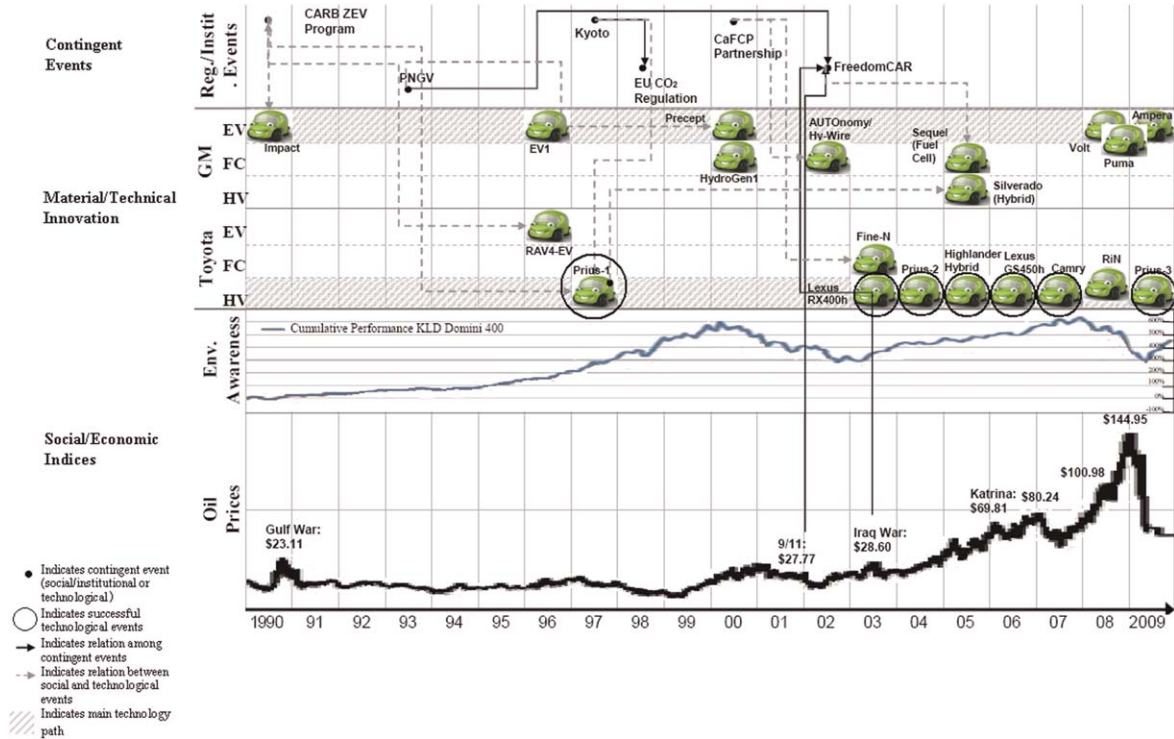


Fig. 3. The Path-Dependent Development of Low Emission Vehicles in Context.

awareness of environmental problems became widespread, yet it was the main social contingency that prompted all major carmakers to explore alternative engine technologies.

Results in terms of technology development were Toyota's RAV4 EV and later its G21 project (later branded as Prius) and GM's EV1.

Partnership for the New Generation Vehicle (PNGV)

The PNGV was a collaborative research program between the U.S. government and major U.S. carmakers, initiated by the Clinton Administration in 1993 to enhance the productivity and competitiveness of the U.S. automobile industry, while simultaneously stimulating research and development on fuel-efficient cars.

The program posed the challenge of developing LEVs that would fit existing consumer preferences and expectations by focusing on the development of highly fuel-efficient family sedans with the same performance, price, safety, and comfort levels as conventional cars. The aim was to bring such fuel-efficient cars to the market by 2003. The PNGV only resulted in prototypes, such as GM's Precept (2000), and never generated any production viable cars. Nonetheless, it did stimulate ongoing research and development of LEV technologies by the major American carmakers, including General Motors.

Kyoto Protocol

In December 1997, the Kyoto Protocol was adopted in order to reduce greenhouse gas concentrations in the atmosphere and combat global warming. Toyota took this meeting as an opportunity to present the Prius hybrid vehicle. However, the most important effect of the Kyoto protocol was that it triggered broad public awareness (see Fig. 3) for environmental problems and stricter CO₂ regulations. Next, we discuss how this increased environmental awareness was one of the major contingent events influencing the success of the Prius.

Introduction of the Prius

Toyota unveiled its first hybrid vehicle, the Prius, in October 1997, and thereby triggered a bandwagon effect for hybrid vehicles, causing all major carmakers – among them General Motors – to begin the development of their own hybrid vehicles in an effort to catch up with Toyota's success.

The major advantage of the Prius hybrid over other LEV technologies was its design that built on the same refueling infrastructure as traditional cars, and thus it required no fundamental adaptation of consumer preferences and

expectations with respect to performance, range, and refueling. Despite the fact that the car came at a premium price and received mixed reviews, a number of developments contributed to its unprecedented success. First of all, it offered improved fuel economy, lower emissions, and advanced technology in the face of rising oil prices and increased environmental awareness. Moreover, media celebrities, British ministers, and European policymakers bought the Prius, thereby further popularizing the car. Additionally, government tax breaks provided strong financial motivation for buying a Prius. Hence, these complementary economic, social, and institutional changes have enabled the widespread adoption and diffusion of the hybrid technology in general and the Prius in particular.

GM largely missed out on the success of hybrids. However, the evident success of the Prius stimulated most large car producers to include hybrids in their portfolio, either through licensing the technology directly from Toyota (such as Ford, Nissan, and Mazda) or by developing it themselves, like GM. GM subsequently introduced a number of hybrids, such as the Chevrolet Silverado, Sierra, and Malibu (see Fig. 3).

EU CO₂ Regulation

As a result of the Kyoto protocol, the transport sector became one of the key focus areas for agreements specifying the reduction of CO₂ emissions. For instance, in 1998, the ACEA Agreement was concluded – a voluntary agreement between the European Automobile Manufacturers Association (ACEA) and the European commission – to limit the amount of CO₂ emitted by passenger cars sold in Europe. However, in 2008, as the progress of European carmakers in reducing emissions was too slow, the EU enforced CO₂ regulation. Although the EU CO₂ regulation did not result in any new LEV in particular, Toyota did develop a fuel-efficient small car – the AYGO¹ – primarily out of the need for lower fleet-average CO₂ emissions.

California Fuel Cell Partnership (CaFCP)

In January 1999, the CaFCP – a public–private partnership including carmakers – was formed to promote the commercialization of fuel-cell vehicles as a clean, safe, and practical alternative to gasoline cars. Interestingly, it was the first time that oil companies were involved, and hence that explicit attention was paid to the construction of the necessary refueling infrastructure. Moreover, it was a pioneering attempt to address this and other nontechnical changes that would be needed to enable the adoption and diffusion of this radical sustainable technology.

In terms of output, the CaFCP triggered the collaboration between GM and Toyota on fuel cell (FC) technology resulting in the production of several concept cars by both companies, including GM's AUTONomy (2001) and Toyota's Fine-N (2005). These concept cars are particularly noteworthy as they represented the most radical technological innovations in the car industry. These cars rely on fuel cells for propulsion and integrate drive-by-wire technologies that can provide an innovative solution for congestion problems and enhance safety. In addition, the AUTONomy allows for customization through removable, interchangeable bodies, thereby providing additional social value.

FreedomCAR

In 2002, the Bush administration replaced the PNGV with the FreedomCAR program in order to develop energy efficient technologies that would provide greater freedom of mobility and energy security, while lowering costs and reducing environmental impacts. The program included the United States Council for Automotive Research (USCAR) and five energy companies.

Because of the rising oil prices due to 9/11 and the Iraq War – two important economic and social contingencies – the program focused primarily on energy security through promoting research and development of FC vehicles and hydrogen infrastructures. However, given the lack of stringent outcome demands, it never resulted in any viable production of LEVs. Nevertheless, the program stimulated the continued development of fuel-cell technology and the emerging interest in plug-in hybrids by General Motors and other carmakers.

DISCUSSION

The findings of this study show that the development and the success of radical sustainable technologies are highly dependent on the coevolution of technical, economical, regulatory, social, and environmental contingencies. The dominance of the internal combustion engine after the 1920s was established on the basis of a set of contingencies both at the social level and the technological level. Similarly, its perseverance to date depends on a number of conjoint social and technological sources of lock-in. Moreover, a company's choice to focus on one particular technology – i.e., GM's focus on electric vehicles and Toyota's focus on hybrids – and largely ignore other possibilities is also mainly determined by previous actions and decisions as well as critical incidents in the wider social context.

Additionally, whether or not a new technological innovation becomes successful depends on the momentum of its path and the wider social and institutional context. Hence, the reasons for the great success of hybrid vehicles, in particular the Prius, and at the same time the failure of electric and fuel-cell vehicles are not solely technological, but also social. As our findings indicate, the introduction of the Prius was accommodated by strong social support that triggered widespread adoption and subsequently instigated the development of hybrid technologies by other carmakers. Most significantly, rising oil prices, increased environmental awareness, the provision of government tax breaks, and the popularization of the Prius by Hollywood stars, British ministers, and European policymakers provided the economic, social, and institutional changes that were necessary for eroding the dominant technology path and the construction of an alternative technological path.

Nevertheless, the hybrid vehicle – as the least radical innovation – did not require a significant disruption of existing technologies, practices, preferences, and support structures. Rather, it builds on the prevailing technological base, refueling infrastructure, and functional requirements that have been in place since the internal combustion engine gained market dominance in the 1920s. For this reason, hybrid technologies did not trigger a fundamental discontinuity of the dominant technological path but instead paved a parallel and partly overlapping path.

Electric and fuel-cell cars, however, require fundamental social and institutional changes, that in turn instigate a radical discontinuity from the internal combustion engine path. For instance, GM's Hy-Wire² and AUTOnomy as well as Toyota's Fine-N demonstrate the mechanical feasibility of a technology that provides zero emissions – i.e., *environmental* value – as well as enhanced safety, comfort, customization possibilities, and potentially lower costs – i.e., *social* value. However, the diffusion of such radical sustainable innovations is not possible without the prerequisite social and institutional support: for example, the creation of alternative recharging infrastructures, providing government grants and tax breaks, or setting up government-initiated research partnerships.

Thus, in the same way that sociomateriality enables the perseverance of a particular dominant technology, it is also the key for the disruption of its evolutionary path. Sustainable innovation is therefore not only about the design of radical green technologies, it is also about generating social support that complements and reinforces the adoption and diffusion of these technologies in society at large, and changes the patterns of people's engagement with them. This also implies that we should not limit ourselves

to the prevailing paradigm, which centers on profits and monetary value, but rather focus on social value creation, which is a prerequisite for triggering the desired change. In other words, we should shift from sustainable development to sustainable value.

From Sustainable Development to Sustainable Value

Sustainable development is embedded in a modernist development paradigm, which assumes a linear progression toward unlimited prosperity (Thatchenkery, Cooperrider, & Avital, 2009). Even though the three pillars of sustainability – social, environmental, and economic sustainability – are formally acknowledged, the main focus remains on profit value. On the contrary, sustainable value represents an expanded definition of value that emphasizes value for stakeholders over, but not at the expense of, shareholder value. An overall effort to reframe the in situ discourse around social value in lieu of monetary value can be leveraged by organizations for shaping alternative courses of action, creating innovative technologies, and developing novel practices that create sustainable value for all stakeholders in society. Moreover, generating value for societal stakeholders can become the source of competitive advantage, and hence of business value (Cooperrider, 2008; Laszlo, 2008). In Table 3, we juxtapose sustainable development and sustainable value.

A shift from sustainable development to sustainable value thus represents a move away from reactive, isolated solutions to environmental problems at the corporate level toward proactive, concerted efforts of businesses, institutions and the overall community in addressing sustainability-related

Table 3. Sustainable Development versus Sustainable Value.

	Sustainable Development	Sustainable Value
Drive	Business value	All stakeholders value
Thrust	Meeting needs and adhering to standards	Creating value and enhancing well-being
Nature of change	Mostly reactive	Mostly proactive
Core activity	Mitigating negative effects on the environment	Creating innovations to strengthen the entire system
Dimensions of sustainability	Environmental (and economic) sustainability	Social, environmental, and economic sustainability
Focus	Deficit focus on problems and impediments	Positive focus on challenges and opportunities

challenges in innovative and holistic ways that generate social, environmental, and economic value for all stakeholders and future generations. Adopting the sustainable value lens enables us to understand the interplay of the social and the material in everyday life and to shape it in line with society's best interest.

CONCLUSION

Based on our longitudinal study of sustainable innovation in the car industry, we have demonstrated that the diffusion of radical sustainable technologies requires both technological innovation as well as complementary social change, which reinforce one another. We therefore argue that the prevailing discourse underlying sustainable development, which is primarily centered on business value, is unlikely to trigger and facilitate the desired change toward a sustainable future. Rather, we should construct our discourse and the consequent actions around the creation of sustainable environmental, social, and economic value, and not limit our efforts to sustainable development. Adopting an affirmative sustainable value lens is indispensable for understanding the coevolutionary path of sustainable innovation and for shaping it vis-à-vis our envisioned social and environmental aspirations.

NOTES

1. Both the AYGO and Smart are not LEVs; therefore, they are not displayed in Fig. 3.
2. For hydrogen-by-wire, a drive-by-wire, i.e., electronic control, system.

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STEWARDSHIP DESIGN PRINCIPLES: LEARNING FROM LIVING SYSTEMS (BIRDS) TO CODESIGN FAST-FORWARD FUTURES

Anthony E. Smith

ABSTRACT

Systems theory and open systems principles trace their origins to the life sciences. Our observations of living systems also inform the design and management of sustainable communities and organizations. Grounded in the patterns of living systems and social ecologies, the stewardship design principles (SDP) – balance, interdependence, regeneration, diversity, and succession (BIRDS) – can increase the agility of sustainable design practitioners in ramping up from small-scale experiments to large-scale systems change. The urgency of addressing global challenges such as climate change calls upon social change practitioners – be they business leaders, social entrepreneurs, or both – to create and/or adapt tools to increase the velocity and range of positive social change. Case vignettes in

Positive Design and Appreciative Construction: From Sustainable Development to Sustainable Value

Advances in Appreciative Inquiry, Volume 3, 117–135

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003011

the design of small-scale experiments illustrate how the application of stewardship design principles can help expedite larger systemic change at the regional, statewide, and national levels.

Social systems sciences theory and positive design trace their origins to the biological sciences that inform us about the teleological relationships of living systems (Sommerhoff, 1969, p. 147). Open systems characteristics, first described by Bertalanffy (1950), distinguish living organisms from inanimate objects (Emery & Trist, 1965, p. 21), from activity to nonactivity (Ackoff & Emery, 1972, p. 332). This chapter builds on our understanding of the stewardship design principles of balance, interdependence, regeneration, diversity, and succession (spelling BIRDS). The stewardship design principles trace their history from the early formulations about open systems, contemporary observations by leading naturalists, and more recent insights about sustainable value creation (Laszlo, 2008). As illustrated in this chapter, the stewardship design principles can enhance the efficiency and effectiveness of sustainable design practitioners – in business, government, and the nonprofit sectors – in increasing the speed and range of social change, much like snow geese flying in V formation to increase their flying efficiency by as much as 70% (Thien, Moelyadi, & Muhammad, 2007, p. 43).

Positive design, sometimes also referred to as sustainable design, represents the apotheosis of social systems sciences theory and practice. It offers the potential for achieving massive innovation at a time when we urgently need to resolve global challenges within our lifetimes (Mau, 2009). It also offers a new worldview that enables us to visualize the impossible. We know that a fifth or more of all living species face extinction by 2020 (Wilson, 1992, p. 346) and that the rate of Nature disorder, especially among young people, is increasing at an alarming rate (Louv, 2005). We also know that of the 6,900 known languages, we are losing one language every two weeks (Bittinger, M., personal communication about her work with Rosetta Stone, July 23, 2009). These challenges will not, and cannot, be resolved through incremental change.

“Sustainability solutions require [not only] collaboration with key stakeholders [but also] ... new organizational solutions” (Laszlo, 2008, pp. 189–190). Sustainable design, far from its early stereotype as an earth-hugging idealism, has evolved as a highly pragmatic, systems-and-solutions-driven approach, now more fully embraced by the public and private sectors. Sustainable design received an early boost from Russell Ackoff

(1974), sometimes referred to as the “father of operations research,” who described the systems approach as one for redesigning the future through “interactive design” (p. 26). From Ackoff to Zohar (Zohar & Marshall, 2000), positive design practitioners seek to develop ways to change organizations and the environments of which they are a part, including societies and global domains (Global Forum, 2009).

Highly effective positive design methodologies have emerged in recent years for applying systems theory and management science to achieve large group consensus around shared values and in shaping preferred future states (Emery, 1975). Emery and Trist were the first to apply the systems approach to developing the Search Conference participative planning process in 1958. Cooperrider and Srivastva (1987) developed the methodology of appreciative inquiry, and more recently, Cooperrider has applied management knowledge to achieve massive positive change through Global Forums, such as the Global Forum (2009) for “Business as an Agent of World Benefit.” These and other methods, such as future search (Weisbord & Janoff, 2000), have proven effective in helping to spur massive innovation at the corporate and domain levels. At the same time, new ways of thinking about human intelligence, including spiritual intelligence (Zohar & Marshall, 2000) and appreciative intelligence (Thatchenkery & Metzker, 2006), suggest new frameworks for understanding how we create meaning in our lives and reframe and regenerate situations into a more positive future, at the individual, organizational, and societal levels (Capra, 2002).

Prominent naturalists have developed systems principles from their study of natural ecologies as grounded theories based on empirical observations and logic (Glaser & Strauss, 1967). Wilson (1992) states “The best of science ... springs fresh from a more primitive mode of thought ... to concoct new patterns of thought, which in turn dictate the design of the new models and experiments” (p. 5). Benyus (1997) builds on the message of how we should learn from Nature’s “geniuses” by “interview[ing] ... the species on Earth ... to discover their talents and survival tips, their role in the great web of things” (p. 289). She also declares “what makes us different from other species (as far as we know) is our ability to collectively act on our understanding” (Benyus, 1997, p. 297). Pimm’s (1991) studies of ecological communities point toward the increased resilience of communities that possess higher levels of diversity. These and other natural ecologists inspired cyberneticists and systems theorists with their empirical studies on ecosystem characteristics of living systems that then led to our understanding about the characteristics of open systems, such as organizations, communities, and societal domains.

PROPERTIES OF OPEN (LIVING) SYSTEMS AND LINKS TO BIRDS STEWARDSHIP PRINCIPLES

Given the origins of systems theory and positive design approaches, it comes as no surprise that we find parallels between the properties of living systems as well as social ecologies that include our families, communities, businesses, and institutions. Some of the early postulations of systems properties (Emery, 1965) serve as the foundation for the BIRDS stewardship design principles, as shown in Table 1.

Table 1. Systems Properties and Stewardship Design Principles.

Systems Properties	BIRDS Stewardship Design Principles	Systems Theory Origins
Openness	Balance	Bertalanffy (1950) noted how living systems exchange and metabolize energy and nutrients with their environments and other living systems.
Directive correlation	Interdependence	Sommerhoff (1969) first noted how living systems demonstrate a unique ability to move toward mutual goals without control or overt coordination, such as certain behaviors of bats, bees, birds, ... and people.
Self-organizing	Regeneration	Emery and Trist (1973) noted how living systems regulate themselves, grow through internal elaboration, and move toward higher states of order in opposition to the second law of thermodynamics ("negentropic").
Resilience	Diversity	Ashby (1956) noted the variety-increasing behaviors of living systems in his Law of Requisite Variety. The more variety of actions available to a living system, the more resilient it becomes to changes in its environment. Paradoxically, its corollary, that "only variety can destroy variety" and its obverse, "diversity builds diversity" (Meisel, M., June 11, 2009, guided walk and personal communication in the Big Meadow, Shenandoah National Park) also help explain patterns of living systems.
Learning	Succession	Ackoff and Emery (1972) noted how living systems display goal-directed learning, adaptive, and purposeful capacity as they evolve in response to changes in their environment(s).

These properties of living systems captured as the BIRDS stewardship design principles suggest possibilities for enhancing positive design strategies for massive innovation. For example, snow geese in flight formation did not call a staff meeting to decide on flight formation or individual roles and responsibilities ... they just “do it” without command and control, each benefiting from the 70% increase in efficiency from the slipstream created by the bird in front and each alternating the lead role. People, and organizations, whether a cycle racing team, a basketball team, a jazz quartet or an agile enterprise, similarly experience “flow” states (Csikszentmihalyi, 1991) and slipstreams which exemplify the open systems properties and collaborative advantages achieved through directive correlation.

When David Cooperrider led an appreciative inquiry exercise with more than 800 front line employees at GTE in 1995, the process rippled throughout the organization of 64,000 employees such that 14 months later a whole systems change took place with great “velocity and largely informal spread of ideas” (Cooperrider & Whitney, 2005, p. 2). Cooperrider attributes some of this phenomenon to the power of the “principle of simultaneity” where positive inquiry and change take place in a simultaneous moment (*Ibid.*, p. 15). Cooperrider welcomed this act of simultaneity among GTE people that occurred naturally through the process of directive correlation (Interdependence Principle). We also know from observations of living systems that such flow states commonly occur through nonverbal simultaneity, where shared values and instinctual responses align with correlated actions.

FROM CAUSAL TEXTURE TO STEWARDSHIP PRINCIPLES

Emery and Trist (1965) were the first to posit a new type of social environment that suggests their prescience in predicting today’s torrent of events: turbulent environments. Changes in global demographics, technology, and other forces that lead to faster and more dynamic changes in the macroenvironment have led to an increased level of turbulence.

The authors delineate four types of contextual environments, of which the great bulk of management theory and management education today still focuses on first three types. These include random placid, placid clustered, and disturbed reactive environments, and their respective adaptive responses from tactics to strategies to operations. Tactical, strategic, and operational

(competitive) strategies certainly contribute greatly to our collective repertoire of adaptive responses to organizational environments. The increasing turbulence of our interconnected world, however, requires an altogether different response – that is, seeking collaborative advantage (Gray, 1989) by pursuing shared values and/or principles, either in coordinated fashion or, more broadly, through directive correlation (Sommerhoff, 1969) to achieve greater resilience and to thrive (Senge, 1990; Sheffi, 2005).

Emery and Trist (1965, 1973) suggest the salience of values as coping mechanisms in turbulent fields as well as transformative factors in reducing uncertainty and turbulence:

The emergence of values that have overriding significance for all members of the field ... are here regarded as coping mechanisms that make it possible to deal with the persisting areas of relevant uncertainty ... Values are not strategies or tactics ... they have a conceptual character of “power fields” and act as injunctions. (Emery & Trist, 1973, p. 28)

Their findings suggest three key points as we morph into a world where pursuing sustainable value and sustainable design (McDonough, 2009) endure as requisites for planetary survival (Sachs, 2009):

1. Sustainable design builds on a set of core systems theories and values about living systems;
2. The human species bears the responsibility and holds the capacity to apply sustainable design to create more resilient futures; and
3. The BIRDS stewardship design principles, informed by the properties of living systems, can enhance our efficiency and effectiveness in sustainable design.

As effective as the new methodologies for search conference, appreciative inquiry and positive design have proven, how much more effective might they be when coupled with a set of universal design principles that derive from resilient patterns in living systems? The task in this chapter is to lay the foundation for how the stewardship design principles derive from living systems to inform individual, group, and societal actions.

STEWARDSHIP AND DESIGN

The word “stewardship” connotes many things, from stewardship of natural and human resources to stewardship of cash, castles, and customers.

Peter Block (1993) defines stewardship as a form of servant-leadership such that “Stewardship begins with the willingness to become accountable for some larger body than ourselves ... Stewardship springs from a set of beliefs about reforming organizations that affirms our choice for service over self-interest” (p. 6). The Franciscan tradition unequivocally connects faith with caring for all of creation, tracing back to Saint Francis’ *Canticle of the Creatures* that praises the Lord for the Sun, Moon and stars, Wind, Water, Fire, and “Sister Mother Earth” (Francis of Assisi, 1999). In 1979 Pope John Paul II recognized Saint Francis as the patron saint of those who protect ecology, as he had dedicated his life to all God’s creatures (Delio, Warner, & Wood, 1999). The Anabaptist tradition affirms a similar notion of Christian stewardship as service to God, with the added qualifier that “time also belongs to God and that we are to use with care the time of which we are stewards” (Mennonite General Conference, 1963, Article 21). This element of time stewardship suggests that good stewards not only serve a larger purpose but also take care to honor the limited time with which to do good.

Buckminster Fuller (1963) coined the term “design science” to include “long range, anticipatory design.” Peter Drucker’s famous insights on management science included the need for managers to focus on creating the future, not predicting it: “The most effective way to manage change successfully is to create it” (Drucker, 2002, p. 295). This ties in with Laszlo’s (2008) eight sustainable design disciplines that include anticipating the upstream and downstream stakeholder impacts of the value chain as well as managing for the different levels of strategic focus. Laszlo concludes by making the case for “breakthrough innovation” that achieves “game-changing ... disruptive change.” Here again, we enter the time dimension to achieve larger scale, more enduring impact.

Frank Lloyd Wright (1954) defined organic architecture as a design approach not wedded to any design “tradition” so much as one that links form and function “... by way of the nature of materials” (p. 3). William McDonough Architects (1992) extended Wright’s pioneering concept by developing a set of sustainable design principles – the Hannover Principles – adopted by the World Congress of the International Union of Architects (UIA) in June 1993 at the American Institute of Architect’s (AIA) Expo 93 in Chicago that recognize balance in the use of natural energy flows by incorporating “solar income,” the interdependence of nature and humanity, regeneration of materials so as to avoid creating waste, diversity by considering “all aspects of human settlement ... in terms of existing and

evolving connections between spiritual and material consciousness,” and succession by designing for future generations.

By defining these three words together – stewardship, design, and principles – we serve one purpose: to provide actionable tools for steward leaders seeking to co-design more resilient futures, with and for the rest of us.

FROM FUTURE STEWARDS TO STEWARDSHIP PRINCIPLES

Fifteen years ago, on a beautiful 560 acre organic farm served by seven springs in the mountains of Pendleton County, West Virginia, high-school and college students from rural mountain communities discovered how the presence of crawfish in streams and bats in caves serve as bioindicators for healthy natural ecologies. Specifically, they experientially learned how principles of balance, interdependence, regeneration, diversity, and succession (spelling BIRDS) all serve as life-giving principles of natural ecologies. Through journaling and group discussions they made the connections between these same living principles and healthy schools, workplaces, and communities.

With support from the Appalachian Regional Commission (ARC), the West Virginia Governor’s Office, and the Annenberg Foundation, the Lightstone Foundation applied the stewardship principles in the experiential curriculum design for the Stewardship Academy. In 1999, the UN Food and Agriculture Organization recognized our work as a “global model for multifunctional land stewardship and educational practices” (United Nations, 1999). For several years we also included high-school students sponsored by the Anacostia Watershed Society in Washington, and it was always illuminating to observe how inner city and farm students would learn about the upstream–downstream relationships between their respective communities – such as how farm management practices upstream can influence drinking water quality downstream, and how downstream regulators can influence the costs of farming upstream.

THE BIRDS STEWARDSHIP DESIGN PRINCIPLES

The stewardship design principles – balance, interdependence, regeneration, diversity, and succession – help to describe and explain behavioral patterns

in natural and human ecologies. The following sections illustrate their application in the design of social systems, to strengthen the ability of social entrepreneurs to ramp up from discovery to design, and from small experiments to co-designing large-scale systems changes.

Balance

Balance, as observed in Nature's abhorrence of vacuums and monocultures, teaches us to design our human ecologies without skewing in one direction to avoid maladaptive responses to our environments. Several examples illustrate this principle, including balancing work–family–community; balanced scorecard for evaluating and directing enterprise performance; and guidelines for developing governance systems and boards of directors.

In the natural environment, when systems fall out of balance, they begin to deteriorate. We see this repeatedly in the overpopulation of white-tailed deer, due to the elimination of deer predators, including the coyote and mountain lion, to protect sheep and the interests of sheep farmers. This has resulted not only in the rapid growth and overpopulation of white-tailed deer in the Allegheny forests, spreading to metropolitan suburbs in the mid-Atlantic region, but it has also created the unintended consequence of “deer browsing” and “browse lines” in forests, whereby all new growth below five feet is eaten, reducing the capacity of forests to regenerate.

In family and organizational systems, achieving balance at the individual level among the competing pressures of family, work, and community can both enhance psychological well being for individuals as well as translate into higher levels of organizational performance (Wright & Cropanzano, 2004). In the design of organizations, achieving balance includes everything from performance metrics to organizational design and governance. The benefits to organizations that develop high-performing boards of directors include the high correlation with the performance of the organization as a whole (Green & Griesinger, 2006). The *balanced scorecard* system (Kaplan & Norton, 1992) adopted by numerous organizations and management consultants serves as a multidimensional framework for describing, implementing, and managing strategy at all levels of an enterprise by linking objectives, initiatives, and measures to an organization's strategy. The scorecard provides an enterprise view of an organization's overall performance by integrating financial measures with other key performance

indicators around customer perspectives; internal business processes; and organizational growth, learning, and innovation.

Interdependence

Interdependence serves as an indicator of healthy ecologies, whereby the outputs of some species serve as inputs for others in the web of life (Capra, 1996). Unfortunately at the time of this writing we are experiencing some stark reminders about our global village and interdependence through the recent maladaptive actions in one part (e.g., US mortgage-backed securities) that engendered unintended consequences which threatened the collapse of the whole (e.g., global financial markets), resulting in universal awareness of our global interdependence and the need for global cooperation.

Perhaps one of the best-running experiments in upstream–downstream interdependence remains how New York City’s (NYC’s) Water and Sewer System reimburses upstream farmers in the New York Hudson River Valley for using agricultural best management practices to maintain clear river water that serves as NYC’s drinking water source (Appleton, 2002). NYC enjoys some of the best drinking water in the country, and it avoided having to pay \$6 billion dollars plus \$250 million per year for maintenance of more extensive water treatment facilities had this initiative not been put into place in a landmark watershed ecosystem services agreement in 1997. What remains as a striking property of this interdependence principle is the symbiosis of very different organizational elements, in this case one of the largest metropolitan bureaucracies and independent family farmers. In Nature we see the interdependence principle exemplified by living systems as symbiotic relationships, where seemingly strange bedfellows provide mutual benefit, as with the symbiosis of the oxpecker bird and hippopotamus, the pilot fish and the shark, or the Monarch butterfly and the milkweed plant.

With funding from ARC, the Lightstone Community Development Corporation (LCDC) subcontracted to the West Virginia Small Business Development Center (WVSBDC) to partner with LCDC in a “Welfare to Microenterprise” (WTE) initiative (Smith, 2000a, 2000b) to build the social, economic, and community assets (Boshara, Friedman, & Anderson, 1997; Smith, Schuchardt, & Shaeffer, 2002) of welfare recipients seeking to pursue their business dreams. Together with WVSBDC, LCDC co-convened a statewide policy meeting with all stakeholders and facilitated consensus on a policy to increase the asset limits to \$10,000 for welfare recipients seeking to step out of poverty by starting their own business. The state welfare

agency agreed to this policy change and implemented the regulatory changes within four weeks of the statewide policy conference.

ARC funding enabled LCDC to transform the interdependent relationship between a very small community-based organization from grantee to grantor with a large statewide funding agency. LCDC was thus able to capitalize on its community-based legitimacy and credibility to leverage WWSBDC's political capital and bureaucratic legitimacy to achieve sustainable statewide regulatory policy and program change.

Regeneration

Regeneration turns the wheel of life in healthy ecologies, both at their centers and at their edges, just as new life sprouts from beneath the embers of the fire-ravaged forest floor or from the broken tail of the salamander. Likewise, the human spirit, self-managed teams, and entire organizations can regenerate if provided the renewing gifts of creating common ground, shared values and vision, and intrinsic rewards.

In 2002, while serving as National Program Leader (NPL) at the invitation of the US Department of Agriculture, Cooperative Research, Education, and Extension Service (USDA/CSREES), we were faced with a planning conundrum. On the heels of 9/11, local, state and federal stakeholders everywhere in the country had clamped down on their travel and expense budgets. With an agency innovation grant \$25,000 we convened a national virtual conference in late 2002 to share best practices in community-based entrepreneurial development (Smith, 2003), to help shape and build commitment and consensus on new federal policy. The virtual conference facilitated a highly open, transparent, democratic, and inclusive national conversation, thus creating a virtuous spiral (Lawler, 2003) of regenerating actors, events, strategies, and solutions.

We developed a regenerative spiral by developing a strategy and a user-friendly electronic social medium – virtual *e-Conference* – over a two-week period, whereby more than 200 community-based and national stakeholders participated asynchronously across four time zones in shaping federal policy (Smith, 2004).

Some of the large-scale synergies that regenerated out this national virtual event included:

1. A statewide initiative in Minnesota, involving 22 organizations led by the Northeast Entrepreneur Fund, to support entrepreneurship on a statewide basis, incorporating many of the findings of the *e-Conference*.

2. Development of a national foundation initiative, sponsored by the Kellogg Foundation with the Corporation for Enterprise Development, providing \$8 million in new grant funds to support up to four regional *e*-Community collaborative initiatives for \$2 million each.
3. The US Forestry Services incorporated a role for agency empowerment of entrepreneurial communities in its strategic plan for forest management practices (stewardship contracts) throughout the country as a direct result of participation in the *e*-Conference, in an effort to address the increased magnitude of hazardous fuels in public and private forests.

Diversity

Diversity strengthens the adaptive capacities of natural ecologies, and likewise, when the diversity stewardship principle is applied to schools, communities, and/or workplaces, it helps to ensure our capacity to adapt, compete, and collaborate in a multicultural global marketplace. Best practices in managing for diversity, both internal and external to the organization, require a diverse, multitiered strategy (Kreitz, 2008).

The Save Our Streams (SOS) method used throughout the world by citizen groups to monitor the health of water bodies such as lakes and streams uses the diversity stewardship principle as its primary measure. The method applies the body of knowledge in natural ecology in water sampling techniques to measure the diversity and types of macroinvertebrate species present in the water body as bioindicators of the health of the water body. Water bodies and other natural ecosystems that support a greater diversity of life forms are better able to withstand disturbances without reducing their carrying capacity to support life.

Monocultures in agriculture have yielded significant gains in productivity, but also suffer from the unintended consequences of lack of resistance and resilience to new diseases or predators. We are also learning that these monocultures require significant injections of hydrocarbon pesticides, fertilizers, and antibiotics that bear consequences for human health and global climate health. Monocultures in organizations tend to lead to “group-think” that often result in loss of market share, and sometimes, in catastrophe, such as the group-think that led to tragic Challenger launch decision.

By the same token, the diversity stewardship principle also applies in human endeavors from prudent stock portfolio strategies, to diversified

funding for nonprofit organizations, to populating boards of directors. A stock portfolio heavily skewed in one direction may be less likely to withstand the changes in business cycles and the inherent volatility of markets. By extension, a nonprofit organization that seeks to survive and thrive in the highly competitive marketplace of ideas and funders, needs to develop a diversified funding base, including sources for earned and contributed income. Social entrepreneurship is gaining in currency as more and more nonprofit organizations are viewing contributed income as social venture capital to develop earned income capabilities that serve the social mission.

Succession

Succession completes the natural cycle, and if we apply the succession stewardship principle in our human ecologies, they will more likely adapt well to the cycles of business and the dynamics of a changing human ecology.

Forest edge and wetlands ecosystems inform us about succession and diversity. Forest edge ecotones, that is, the transition zone between forest and open land or grassland, often exhibit a higher than usual diversity of species that inhabit both communities. They also exhibit a higher than usual change in species, or succession, as shade-intolerant species of varying degree of tolerance compete with shade-tolerant species over time. This edge effect in biology has been applied in systems theory to the observation that social ecotones or edges between social ecological communities or domains often display higher degrees of diversity, innovation, and change than their centers. The centers, heavily populated by large, bureaucratic, shade-tolerant organizations, often oppose transparency, inclusive decision-making, and change, which threaten their monopoly on power. The recent behavior of Wall-Street firms contributing to the global financial crisis serves as a case in point. The edges, represented by community-based, social entrepreneurial, and/or advocacy organizations, serve as a metaphor for the edges, which tend to embrace sunlight, change, transparency, and inclusiveness in their attempts to achieve their social change agenda.

When center and edge organizations reach across these social ecotones, such as between a community-based organization and a statewide bureaucracy (e.g., LCDC and WVSBD) or such as the alliance between the Environmental Defense Fund and McDonalds that resulted in the

development of ecofriendly hamburger wraps, new innovations can occur that defy the limitations of either one on its own.

Perhaps the more widely understood succession principle involves the cycle of fast growth, maturity, decay, and succession as a new species of plants or people overtake the previous generation in the social or natural ecology. As woody shrubs succeed grasses, and as these in turn are succeeded by evergreens and eventually by deciduous trees near forest edges, this same succession principle plays out as part of the implicate order (Bohm, 1980) of living systems in social ecologies. And just as different wildlife species such as song birds are better adapted to different stages of an ecotone succession, different knowledge, skills, and aptitudes (KSAs) may be appropriate for different stages of succession for organizations and social domains.

LCDC applied the succession principle and appreciative intelligence (Thatchenkery & Metzker, 2006) to achieve sustainable change at a statewide system level. It started innocently enough as LCDC sought to support a community-based network of farmers markets in the five county Eastern Panhandle region of West Virginia. We learned that farmers were refusing to redeem coupons by low-income families qualifying for the Women, Infants and Children (WIC) Farmers Market program, which provided \$20 per week for families to purchase fresh, locally produced fruits and vegetables from local farmers. When we asked the farmers why not, they replied that the state took more than six months to redeem the coupons for cash.

We applied the succession principle by directly purchasing the WIC coupons from the farmers and sought reimbursement from the state, serving effectively as the variety-increasing ecotone between the farmers and the state bureaucracy. Eight months later the statewide director of the WIC program wanted to know why the Eastern Panhandle had suddenly emerged with a 600% growth in WIC coupon redemptions that year, several times greater than any other part of the state. The following year, the state implemented a program so that farmers could directly redeem their WIC coupons at local banks, with no waiting period. This example illustrates how a very small community-based organization was able to play a catalytic role for sustainable change at a statewide level by applying the succession principle with appreciative intelligence, thereby increasing the effectiveness of state and federal resources, while enabling LCDC to redirect its loan funds to other pressing local needs.

FROM FAST-FAIL TO FAST-FORWARD TO ACHIEVE MORE RESILIENT FUTURES

Fast-fail systems in software design provide immediate and visible clues that enable software designers to debug complex software programs quickly and easily to develop robust software (Shore, 2004). Such robust failure design is quickly replacing traditional “slow-fail” approaches that seek to minimize failure and that paradoxically take many times longer and at greater cost to correct. Fast-fail design is also applied among progressive business cultures that encourage rapid prototyping to allow for quick experimentation, fast failure, reporting, evaluation, and redesign to achieve robust systems. For business investors as well as for entrepreneurs, “the key to more efficient innovation is failing faster, not less often” (Sutton, 2002, p. 378). The stewardship design principles enable practitioners to incorporate resilient design elements into their experiments so that they can more quickly learn from the small-scale failures and successes and apply them to large systemic change. A small-scale approach to sustainable development can be the most cost-effective approach to achieving tangible results at the global level (Mann, 1994).

These five BIRDS stewardship design principles, taken individually and as a whole, provide fast-forward tools for supporting sustainable design and appreciative intelligence. The stewardship design principles apply both in the private sector and in the public sector (Smith, 2000a, 2000b). They reaffirm the implicate order of the universe (Bohm, 1980), whereby, for example, the biological indicators of healthy streams enfold the same life-giving principles that govern resilient organizations. They serve as an explanatory and predictive framework for understanding the relative health and resilience of natural and social ecologies. As applies to social systems, the stewardship design principles provide a compass for designing and managing organizations and interorganizational domains to develop and thrive in uncertain times (Smith, 1989). We know that proactive businesses are increasingly applying ecoadvantage strategies to strengthen their competitive advantage (Esty & Winston, 2009; Hawken, Lovins, & Lovins, 1999; Lovins & Lovins, 1977) and to achieve sustainable value (Laszlo, 2008) for their stakeholders.

Future research might further explore how these principles correspond with stewardship principles in spiritual life, spiritual intelligence (Zohar & Marshall, 2000), presence (Senge, Scharmer, Jaworski, & Flowers, 2004) and appreciative intelligence (Thatchenkery & Metzker, 2006). These might

represent useful planks from the seen to the unseen, from objective teleology to theology to organizational ecology.

As social entrepreneurs, we view our life's mission to do well by doing good, and to do good by doing well, with a purpose greater than our own. With these stewardship design principles we add the Anabaptist imperative of using our time more effectively by doing it more quickly, scaling up faster and more effectively, just like the birds flying in V formation.

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FORMS OF GOVERNMENT AND SYSTEMIC SUSTAINABILITY: A POSITIVE DESIGN APPROACH TO THE DESIGN OF INFORMATION SYSTEMS

Kenneth E. Kendall and Julie E. Kendall

ABSTRACT

In order for an information system (IS) to be sustainable, it must create value for its shareholders and for the society at large. We believe it is both possible and recommended that systems designers approach the design of systems thoughtfully, using a positive lens, to develop systems that not only increase profit but also add to the well-being of all. We have also observed that a systems designer can approach an organization with an open mind, accept the organization's set of values, adopt a positive design attitude, and still develop a system that is not sustainable. In this study, we looked to see whether there was an additional factor, one based in the environment created by governments that influenced the sustainability of systems. Since previous research shows that observing the predominant metaphors found in organizations can help explain the success or failure

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 137–155

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003012

of different types of ISs, we attempted to do the same for societal metaphors. We identify the orientation, attitudes, and limits of various forms of government and demonstrate their similarities to the primary organizational metaphors. We then propose that the type of government may influence the sustainability of ISs and further argue that systems designers need to be aware of how forms of government affect the design of ISs and their sustainability.

Metaphors shape thought. Metaphors thus also shape information systems (ISs) development. Positive metaphors can shape, stimulate, and generate positive discourse for the design of ISs (Kendall & Kendall, 1993, 1994) and prepare the ground for sustainable growth. In this study, we use the social construction of technology (SCT), part of social construction theory, to conceptualize how emergent metaphors of governments shape positive design that leads to sustainable value of information, information-based relationships, and ISs. However, we recognize that to an individual, group, organization, or government a particular shared metaphor can be positive, to others it may not be. This paradoxical aspect of metaphors is useful to keep in mind since it informs the reader of important dimensionality and depth of all metaphorical usages (Weaver, 1967).

Using the framework of the SCT, our work links organizational metaphors to governmental characteristics and then maps the likelihood of positive IS design to various governmental types. From that we suggest how IS designers can generate innovative, positive design of ISs through social construction of systems and governments that includes design practitioners, users, and political leaders. In an earlier study, the success and failure of ISs based on the predominant metaphors that were present in an organization was investigated (Kendall & Kendall, 1994).

In a recent article, the authors were able to point to the usefulness of positive metaphors in fostering positive design of ISs (Kendall & Kendall, 2008). We used verbal analysis as an intuitive, reflective, and interpretive approach to explore the narratives of successful systems. We found that introducing positive memes was a largely invisible way to directly affect the design of systems, while embracing positive metaphors was a less visible means for culturally changing the behavior of those who designed systems.

We have since revisited this idea and now examine whether it would be possible to identify societal metaphors and then deconstruct them, so that they would reveal how systems are designed? Would it be possible to predict whether one large project might succeed or another would fail? The positive

design approach informs this endeavor by creating the idea of generative possibilities that reside in predominant metaphors.

We argue that, if forms of government resemble or take on characteristics of the organizational metaphors, and if metaphors can predict the likelihood of sustainability when designing and implementing certain types of ISs, then the existence of one form of government or another may encourage or discourage the design of certain ISs.

Take for example Thomas Jefferson, one of the founding fathers of the United States and the third president, who designed the University of Virginia's campus. He understood all of the rules of classical design, including symmetry. He decided to break the rules, however, and on each side of the central mall he designed buildings with differing facades. Could Jefferson have designed the campus of the University of Virginia without having first pondered the structure of government? Would he have broken the rules of classicism if he were not thinking of breaking the tyranny of a monarchy?

Likewise, would Daniel Burnham have chosen a different style instead of the classical styles of Greece and Rome to rebuild the city of Chicago and the "White City" of the World's Columbian Exposition (the Chicago World's Fair of 1893) after the great fire if he was not living in a republic? And how would Moscow look if were not for the large-scale development plans and mega-projects typical of Stalin's empire style?

THE POSITIVE LENS

Positive design is an emergent viewpoint in the research of individuals and groups that attempts to use a positive outlook and appreciative inquiry (Thatchenkery & Metzker, 2006) to improve organizations and their technologies through use of positive spoken or written words or discourse (Avital et al., 2006).

As we look more deeply into positive design for ISs, we recognize that positive design is a philosophy as well as a behavior. The philosophy is such that a designer encountering a design situation views it as an opportunity for improvement, rather than visualizing it as a problem, or looking for errors produced by the current IS. The philosophy of positive design also embraces the ideal that what humans experience in their daily interactions with information technology truly matters, and that the designer with a positive design approach is careful in their approach even when making the smallest of design decisions.

The concepts of “design attitude” (Boland & Collopy, 2004) and “positive lens” (Avital et al., 2006) are important in shaping our work. Although numerous authors describe systems designers and programmers who adopt a set of values (Armour, 2002; Beck et al., 2001), these values remained passive until Boland and Collopy introduced the concept of design attitude. This implied that designers, including IS designers, needed to be more proactively seeking improvement in social well-being.

Avital et al. (2006) and Avital, Boland, and Lyytinen (2009) extended the concept of design attitude to include earlier phases of the design process by introducing the concept of the positive lens. The lens can be applied not only in the design phase, but also in the problem identification and analysis phases. This opens a dialog that allows the systems analyst/designer of ISs to understand the individual, organizations, and society. It therefore offers a more holistic approach and encourages ethical concentration on human considerations.

Both the design attitude and positive lens concepts complement sustainability.

SUSTAINABILITY

The topic of sustainability in ISs is a research theme that has been taken up sporadically by several researchers over the last two decades (early examples are Feeny & Ives, 1990; Ives & Learmonth, 1984; Neo, 1988). Research into sustainability in IS intensified in the mid-1990s and there is evidence of renewed interest in this kind of sustainability research in the middle of the current decade.

Interestingly, most of the work on sustainability in IS is linked with sustaining a competitive edge through strategic use of information technology to “realize long-term performance gains” (Kettinger, Grover, Guha, & Segars, 1994, p. 31). The work by Kettinger et al. served to underscore the importance of quantitative measures to identify differences among those organizations that could be classified as “sustainers” and those that were “nonsustainers.” The authors found that businesses that established a “technological base” as well as making “substantial capital” available were fulfilling key prerequisites for what they termed “technologically derived sustainability” (p. 31).

Very few authors have tried to break away from the strong linkage between competitiveness and IS strategy. Kumar and van Dissel (1996), however, champion strategic sustainability through collaboration in interorganizational systems. They point out the almost inseparable bond

between business strategy and the war metaphor (p. 296), which they believe is destructive when approaching strategic use of collaborative ISs. Rather, they highlight the need for “an equally attractive and powerful metaphor to develop strategies for building and sustaining collaboration” (p. 296). They recommend, “the antithesis of war ... the concepts of peace and diplomacy,” and the use of terms that they entail, such as “statesmen,” “treaties,” “diplomats,” and “peace monitoring” (p. 296).

In this study, we reflect on how the metaphors embedded in various government types foster or discourage positive design of specific ISs with the intent of illuminating the design space and possibilities for IS designers.

One can also observe that the presence of certain metaphors may imply, indicate, or even predict the sustainability of systems that were designed when the metaphor was included in the written and oral statements. Although the Kendall and Kendall (1994) study looked only at the successful implementation of various types of ISs, it is possible to examine the sustainability of these systems and whether recurring metaphors allowed some systems to survive while others failed.

FRAMEWORK FOR THE SOCIAL CONSTRUCTION OF TECHNOLOGY

We examine the use of metaphors in positive design using the framework afforded by the theory of SCT, which has proved to be a useful approach to understand the interplay among individuals, groups, and technology. Many researchers have developed and use the SCT to gain insights over the last 25 years or so. The work of Pinch and Bijker (1984), MacKenzie and Wajcman (1998), Misa, Feenberg, and Brey, (2003), and more recently Shin (2006), Moisander and Eriksson (2006) have all contributed to its development and use. The four main precepts of the SCT are (1) interpretive flexibility, (2) relevant social groups, (3) closure and stabilization, and (4) technological frames.

The first component of the framework, interpretive flexibility, conceptualizes design of technology as an open process, subject to intergroup negotiations. When groups negotiate, different outcomes are possible, “depending on the social circumstances of development” (Shin, 2006, p. 86).

The second component of the SCT framework refers to the relevance of social groups who by virtue of their association will create the same meaning for artifacts. Groups who work with the technology and each other interact about, and ultimately come to agreement on, its meaning.

The third element of the SCT framework includes the elements of closure, which recognizes the inevitability of conflicts arising when many groups interact during the design of technological artifacts stabilization, and stabilization.

The fourth and final component of the SCT is the concept of technological frames. A frame is a reflection of shared reality that is a result of group interactions about the meaning of a technological artifact. It is a way of seeing the world, or a perspective, that is created by and endorsed by social groupings. An example of the usefulness of frames in IS design can be found in Macedonio, Kendall, and Kendall (2009).

ORGANIZATIONAL INFLUENCE ON IS

The mutually influenced relationship between the IS designer and an institution, and the eventual use of the designed IS that this might engender has been examined by many researchers using the lens of the organizational aspects of information technology (for example, DeSanctis & Poole, 1994; Fountain, 2001; Orlikowski & Baroudi, 1991; Orlikowski, 2000). The influence of forms of government on IS design is not explicitly raised in these studies, but their findings lay useful groundwork for understanding the relationships between users of ISs and the institutions and organizations in which they work or which they are trying to create, reform, or sustain.

For example, in her study Orlikowski (2000) found that a situation of change (which redefined work redistribution, created a shift in type of collaboration, and changed the way of learning under the institutional conditions of being team-focused, cooperative, and learning oriented) could result in a structural consequence of transforming the status quo. This characterization closely resembles what transpires when positive design of IS is influenced by the governmental form under which the designer is working.

We can extend Orlikowski's work by examining positive design of IS as influenced by a form of government. It is possible to see that while positive design is influenced by the enactment of the positive design process, it is also conceivable that the way the IS is used eventually alters the institution or societal form that originally influenced it.

In this work, we reflect on whether a variety of types of government that embody key metaphors enhance the likelihood of positive design of particular types of ISs.

METAPHORS IN INFORMATION SYSTEMS DESIGN

Over the past 20 years or so, metaphors in IS research have become powerful ways to conceptualize design methodologies (Kendall & Kendall, 1993) and useful ways to help explain the likelihood of success or failure of IS designs (Kendall & Kendall, 1994). Other IS researchers have evoked the power of metaphors to symbolize IT artifacts during development (Hirschheim & Newman, 1991) and still others have examined the cultural insights into IT adoption that metaphors afford (Kaarst-Brown & Robey, 1999). Rather than reviewing in detail the now plentiful literature on IS design and metaphors, suffice it to say that research with and about metaphors has become a subtext and research theme of an entire working group of IFIP, known as WG8.2, which has generated and disseminated descriptive and normative knowledge about the development and use of IT in organizational context since its inception in the early 1970s.

The nine metaphors common in organizational users of ISs were first proposed by Kendall and Kendall (1993). In this study we visited 16 organizations in North America and Europe including banks, financial services companies, a large health and life insurance company, hospitals, regional blood centers, franchise grocery stores, manufacturing companies, and, in one U.S. state, the state police. All of these organizations had various types of ISs in place.

While visiting the organizations and talking with employees, from executives to clerical staff, it became apparent that they preferred to describe the problems, opportunities, and successes of various IS projects through stories and tales, often describing a situation in vivid language. We began mapping each of the stories and sayings to the six organizational metaphors first identified by Clancy (1989): society, war, journey, game, organism, and machine. These were confirmed.

We found quickly that these metaphors existed in the organizations studied, but were not sufficient to describe all of the different situations in the organizations visited. Clancy used the texts of speeches given by CEOs along with the books they had written in order to perform a critical/historical analysis of the use of metaphors in business. He therefore ignored the oral stories that were told by organizational members who were not executives. The metaphors contained in these stories tended to be more chaotic, less business-like, or metaphors about short-term survival. We were able to identify an additional three metaphors: family, jungle, and zoo.

During the interview process, it became clear that different individuals within the same organizations often repeated the same metaphors. We then performed Q-sorting (Kerlinger, 1986; Nunnally, 1978; Rawlins, 1968; Stephenson, 1953). The metaphors that were often cited in the Q-sort were identified as the predominant metaphor for each group or subculture within each organization.

METAPHORS AND GOVERNMENTS

While we were reflecting on various governments, we were surprised to see how similar they were to the metaphors we identified in our earlier research. The metaphor of a machine with its absolute creator was similar to an autocracy or even a theocracy. At the other extreme, the chaos of the zoo was similar to that of anarchy. The other metaphors that were present in organizations were found to describe various forms of government. That led us to develop Table 1 as a summary of common forms of governments and matching metaphors found in organizations.

Table 1. Forms of Government, Matching Organizational Metaphors, and Distinguishing Characteristics.

Form of Government	Organizational Metaphor	Attributes that Distinguish One Form of Government from Other Forms
Autocracy	Machine	Self-ruler, who often creates the rules and applies them in an authoritarian manner
Stratocracy	War	Military leadership, dictatorship, or junta is firmly in control
Enlightened absolutism	Journey	The leader is a benevolent dictator who realizes the needs of the people
Bureaucracy	Society	Clearly defined policies, protocols, rules, and regulations are in force
Adhocracy	Game	The leaders realize that the society is more important than an individual
Meritocracy	Organism	Society rewards ability and merit; competition drives social evolution
Republic	Family	Power assumed or given to an individual or individuals
Panarchism	Jungle	Individual has the rights to join or leave; survival or escape are the objectives
Anarchy	Zoo	Absence of a leader; chaos

Autocracy

Autocracy usually implies that a single individual runs a government. Similar forms of government are sometimes labeled despotism, and dictatorship, or absolute monarchy.

The machine often appears in discourse as a positive metaphor, but the machine is the closest organizational metaphor to autocracy. The machine is designed, engineered, or even created (hints of a theocracy appear here as well) by someone who expected that the machine would work as designed. It needs to be adjusted and maintained, but the machine itself does not have the flaws that humans often display. The machine never gets tired and never complains.

“Our business is a well-oiled machine,” is a common way to express the belief that things function as they should or, more to the point, the way the machine was designed to perform. The use of a machine metaphor leads the machine’s designer to think he or she is omniscient, having knowledge about all of the operations and the organization’s potential (Clancy, 1989). The machine’s creator, then, appears as an intellectual, architect, or even a supreme being. An autocracy or even a theocracy may resemble the environment that leads to design of a machine-like system.

Of course, the machine is not always positive, as the classic 1936 Charlie Chaplin film *Modern Times* magnificently demonstrates. Machines break down. They dehumanize individuals and deemphasize creativity. The machine is not perfection.

Military Dictatorship, Military Juntas, or Stratocracy

In a government controlled by the military, control is exercised by an individual or by a committee (junta). On the surface, a military dictatorship by one person would appear to be an autocracy, but the differences are significant.

The scope of a military government remains external. The military solves problems outside of the country; a police force would handle internal problems. In a stratocracy, there is no distinction between civilian and military offices since leaders from the military occupy all positions.

Competition taken to the extreme is war, the most appropriate metaphor for this form of government. In war, there is information/disinformation, trickery, spies, and counter spies. Such governments are not organized on trust. They are organized on ultimate power.

Enlightened Absolutism or Benevolent Dictatorship

A form of absolute monarchy or autocracy in which the rulers adopt some of the principles from the Enlightenment is called “enlightened absolutism.” In modern times the same type of government is referred to as a benevolent dictatorship.

The journey metaphor fits best for this type of government. A strong leader who works with a tightly knit circle or court to reach a destination leads a journey. Entailed in the journey metaphor is a highly unpredictable trip, often a sea-going voyage. The outcome is in doubt, so there is an aura of adventure, which typically entails danger and risk.

An absolute monarchy or autocracy has a goal, which the citizen’s typically accept. However, achievement of that goal may seem distant, out of reach, and not at all predictable.

The journey is the most prevalent metaphor in business prose and speeches. The metaphor alludes to entailments such as the stormy seas of the economy, which can grow rough, and choppy, perhaps damaging the ship (or ship of state) to such an extent that it eventually sinks (becomes defunct). A poorly charted course in the form of a bad strategic plan could have the negative result of running the organizational ship aground.

Bureaucracy

Bureaucracy involves structure, policies, protocols, and rules and regulations that are put in place to manage a country and its citizens. A hierarchy of officials makes up the bureaucracy, responsibilities and powers are clearly defined, and rules determine the actions that take place in the society. The only way an individual can be heard is by influencing the right person in the right position.

The society metaphor appears to be the best one for a bureaucracy. The society is primarily rule-based. It looks inwardly as opposed to looking to the outside, making decisions based on rules that are predetermined. The leader of the bureaucracy is best thought of as someone who heads up the organization, but who does not get directly involved as a leader of the other participants.

Participants in a bureaucracy pursue multiple goals of their own. They focus internally rather than externally. The society metaphor implies that the entity is seeking many alternative goals, rather than one main goal.

Adhocracy

An adhocracy is a flexible government that is the opposite of a bureaucracy. In an adhocracy, anyone (within their area of expertise or specialization) has the ability to make decisions and take actions. Adhocracies consist of social groups where people work in specialized teams where they share values, exhibit mutual care, and help ensure each other's survival. The high cost of communication may be considered to be a drawback. In any case the overarching principle is collectivism, where the good of the social group is more important than the individual.

Ad hoc means "for purpose" which defines an adhocracy as being results oriented. Although the term "adhocracy" was popularized by Alvin Toffler (1971), there are similarities that appear in early-tribal governments where similar traits exist (shared beliefs, nonbureaucratic behavior, organization into small groups, dependence on specialized teams, and loosely defined roles).

Adhocracies are most like the game (contest) metaphor. Competition can lead to innovative thinking, so the metaphor of a sporting contest or game can prove to be a positive metaphor as well. All of the players' reputations rise and fall on the achievements of the team. Even though each player may have a specialized skill, individuals identify with a group, and a coach who persuades them to beat the competition leads the group. Ultimately, the success of an adhocracy depends on the ability of each person working in conjunction with other members toward a common goal.

Meritocracy

Meritocracy is a form of government where key positions are given to people according to their ability and competence. In this form of government, an individual is rewarded by demonstrating merit compared to other individuals. In the society governed by meritocracy, competition is encouraged. An extension of this is Social Darwinism, which suggests that competition among nations and individual citizens drives social evolution in society.

To survive, the meritocracy needs to reinvent itself and keep adapting and changing. The organism is interrelated with its environment, since any new features that are revealed require it to adapt. Intake of energy, often in the form of information, is essential for growth and sustainability.

The mechanical metaphor is replaced by a living metaphor in the organism. An organism is living, growing, and evolving, much like a garden where seeds are planted, nurtured, and blossom. Nurturing furthers development and

growth of an organism. Knowledge of the necessity to adapt can keep the organization evolving into new and different forms.

Republic

A republic (derived from *res publica*, “the public thing”) is simply a form of government where power resides in the people. Over time, the meaning of republic has expanded to mean many different things, from systems in which republicanism is in practice a representative democracy to the Islamic Republic, where Sharia takes precedence over the power of a ruler. Countries prefer to distinguish themselves from others by applying qualifiers such as parliamentary republic, federal republic, people’s republic, and democratic republic, but the main idea of republicanism is that the public has a voice in the affairs of government.

In the family, power resides with age, wealth, and wisdom. However, the family members together agree to the leadership and the rules that are passed down.

Family members influence the head or heads of the family quite effectively. Each individual might have a specialized role to play in the family. While siblings often act in accord, they may still disagree. Sometimes family members vie for the attention of the head of the family.

Members in a corporation often view themselves as belonging to a corporate family. When we interviewed the Egyptian Cabinet, the members of the Cabinet all expressed the same idea – that they all belonged to a family and made decisions as a family. The essence of a family metaphor is the sense of belonging.

Panarchism

Panarchism allows individuals to join and leave the legal authority of any government they choose. People are not forced to remain in the jurisdiction of the authority. This form of government, on the one hand, may foster secessionism, while, on the other hand, may encourage voluntarism. Theories of secessionism rationalize secession only to rectify injustice to the right of secession for any reason at all. Volunteerism assumes that society may prosper only if there is self-interest and self-ownership. Individuals cannot be forced to do anything.

In the jungle metaphor it is “every man for himself.” Even though there is the option of having a guide accompanying one through unknown territory, each person can accept the guide, or might instead prefer to take their chances by striking out on their own.

In the corporate jungle, there are no shared goals. Unpredictability becomes the watchword. Danger is in the air, and decisions that seemed like foregone conclusions now could harbor one’s extinction if executed without proper caution. In the jungle metaphor, organizational members are pitted against harsh and unforgiving nature, where even small missteps could spell the end.

Sometimes this type of government can take on the form of an anticipatory democracy, one in which the group of individuals could make democratic decisions taking into account their predictions of future events and examining the potential consequences. In the jungle, they could face alternatives such as “follow the river,” or “continue on the unmarked jungle path,” and analyze both before making a decision.

Anarchy

Anarchy means that there is no ruler. In other words, there is an absence of government.

In interviewing many employees in organizations across the United States, we have found many instances where employees describe their organization as a zoo. Clearly, they feel that the officials have lost control over the employees and the work is not being done. While there may be a “keeper” who maintains order, or who they can negotiate with for a different space, or more resources, there is no true leader at the zoo.

In the zoo, there is orientation toward internal actions rather than external ones. It is a chaotic way of life, both unpredictable and hectic. Life in a metaphorical zoo lacks meaning.

In a corporation, employees who describe their workplace as a zoo explain that they have no common goal, and hence no real reason for existing as a collectivity. In the absence of a shared vision, the very meaning of being together is called into question.

In Europe, this same scenario was described as a circus. In Southeast Asia, employees described their organization as a fish market; in France, chaos was reflected in the metaphor of the brothel. The meaning was clearly the same as the zoo.

FORMS OF GOVERNMENT, SUSTAINABILITY, AND POSITIVE DESIGN

In a recent study, Laszlo and Cooperrider (2008) argue that a sustainable business is one that creates value for its owners, for the society, and for the environment. This is a valid point, but it is also necessary to realize that all parties need to be receptive to those artifacts that business creates.

If, for example, a business designs the very best, most effective, voting system in a republic, it adds value to all stakeholders. If the same design is applied to an autocracy it fails. The voting system is not sustainable because the society is not receptive given the form of government in place.

The point we make here is that design is only sustainable if society is receptive. Our work is not intended to recommend one system of government over another. We simply state that certain types of IS designs are more likely to be sustainable under specific types of government.

The conclusions drawn from the Kendall and Kendall (1994) study included the concept that designers who studied user metaphors would understand the odds against them when developing new systems. For example, they found that zoo was never a “good” metaphor when attempting to build and introduce any kind of IS.

While the meaning of the zoo metaphor may be obvious to the reader, some of the other findings were not as immediately apparent. The introduction of decision support systems (DSSs), for example, was found to be more likely if any of the following three metaphors were evident to a great extent within the organization: family, society, or organism. The likelihood of success for introducing a DSS diminished if either war or journey were found.

Table 2 maps the form of government to six common types of ISs: (1) traditional ISs, (2) DSSs, (3) expert systems including artificial intelligence, (4) computer-supported collaborative work (CSCW) and group decision support systems (GDSS), (5) competitive systems, and (6) executive information systems (EIS). The ISs in the negative design factors column may not flourish under the respective governmental form, while the ISs in the positive design factors column may benefit from the environment provided by their respective government type. Thus they may be more sustainable.

A bureaucracy, for example, may favor the development of traditional MIS and DSSs, but may not favor collaborative systems (which encourage communication and interaction over defined procedures and rules) or competitive systems (which break the rules).

Table 2. Forms of Government with Negative and Positive Design Factors in the Development of Different Types of Systems.

Form of Government	Negative Design Factors	Positive Design Factors
Autocracy	None	Traditional MIS Expert systems and AI
Stratocracy	Traditional MIS Decision support systems	Competitive systems
Enlightened absolutism	Decision support systems Executive information systems	CSCW and GDSS
Bureaucracy	CSCW and GDSS competitive systems	Traditional MIS Decision support systems
Adhocracy	None	CSCW and GDSS Competitive systems Expert systems and AI Executive IS
Meritocracy	None	CSCW and GDSS Competitive systems Expert systems and AI Decision support systems Executive information systems
Republic	Competitive systems	Traditional MIS Decision support systems
Panarchism	Traditional MIS Expert systems and AI	None
Anarchy	CSCW and GDSS Competitive systems Expert systems and AI Executive information systems	None

Two types of government appear to create positive environments for the development of ISs: (1) adhocracy and (2) meritocracy. A number of free market-based countries are examples of adhocracies, where the development of software has been active. The United States, where the Internet began, is a good example of a meritocracy.

The United States, for example, was originally set up as a republic, one in which white males who were landowners elected proper officials to represent them in New York City (the country's first capital). Today, the

United States is widely recognized as a meritocracy, where governmental positions are awarded on the basis of merit and ability, not race, seniority, or wealth. Accepted as a society without class barriers, where education and hard work will allow an individual to achieve success, it is not surprising that so many advancements in ISs have arisen in this meritocracy.

Two forms of government stand out as negative environments for the development of ISs: (1) panarchism and (2) anarchy. Neither governmental system provides a positive environment for IT development. Pararchism, which allows the freedom to opt in or out of governmental jurisdiction even shows negative factors for structured ISs (traditional MIS) and structured decisions (expert systems). Anarchy, or the absence of government, casts a shadow over the development of many different types of systems.

SUMMARY AND FUTURE RESEARCH

We have used the SCT framework to discuss predominant organizational metaphors created through the discourse of users, which were identified previously as influencing the likelihood of success for particular types of ISs in organizations. We then asked whether those metaphors existed in society and could be used to identify environments favorable to the sustainability of ISs. We observed that the same organizational metaphors we identified earlier were identifiable in the form and structure of governments. We then mapped the original nine metaphors onto various types of government to answer the question of which of them would be more likely to result in the design of sustainable ISs and which would not.

Future research is needed to map newly emergent metaphors resulting from new governmental types (including e-government) that generate positive design approaches to ISs. In addition, an exploration of shifting metaphors would be worthwhile, since metaphors emerge, and then appear to be discarded as their usefulness (or fashionability) ebbs. Is this just because the metaphor becomes so familiar (almost to the point of overuse) that it no longer embodies the power to inspire great designs? Or do metaphors fall out of favor in design because they are in some way intrinsic to the type of government, software, and hardware comprising the system design or the systems design process? Or do they follow some sort of a life cycle? In any case, we believe that knowledge of metaphors helps designers access those elusive variables they must take into consideration if they are to develop effective, meaningful, and sustainable ISs. This interpretive analysis should continue.

CONCLUSION

Effectiveness of a particular design is determined by many different factors. These include completeness, implementation, eventual use, user satisfaction, cost, aesthetics, and the ability to replicate the design, among other factors. Sustainability, however, is determined by the ability to create value for a company's shareholders and also for society.

We posed the question of whether the form of government surrounding the designer influences design and therefore affects sustainability. To do this, we needed to show that different forms of government have unique characteristics. These differences are expressed verbally, sometimes directly, and are often described in metaphors. Since it has been shown that the use of certain metaphors in organizations influences the success or failure of different types of IS projects, we conjecture that types of governments might also influence the design of products and services, most particularly the social construction of ISs.

We argued that certain forms of government create environments that make it possible for IS designers to develop sustainable systems. It is not our intention to propose which form of government is the best for design of ISs or for society as a whole. We leave it to others to decide whether one form of government is superior to another.

Positive design, expressed in the concepts of design attitude and the positive lens, encourages the designer to be open to culture, values, and mindfulness. And yet, if a designer takes into consideration the existing form of government, there is still no guarantee that their design will result in a sustainable system. Sustainability will be judged over time and the form of government might evolve over time as well.

Who is to say, whether the disciplined, symmetrical approach to designing sidewalks on a college campus is superior to "cow paths" blazed by students? Those who value the order of the autocratic government or the rule-based bureaucracy will insist on symmetrical sidewalks, while those who believe in the individual's rights or anarchism, or who appreciate the multiple goals of pluralism might favor the paths blazed by the people.

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THE GENERATIVE POTENTIAL OF PARTICIPATORY GEOGRAPHIC INFORMATION SYSTEMS

Dirk S. Hovorka and Nancy Auerbach

ABSTRACT

An expanded perspective on information system design paradigms reveals that information systems (IS) have a generative capacity that enables reframing and recasting reality based upon alternative values. By synthesizing research in sustainable value, generative capacity, and community-based geographic information systems (GIS), we propose that IS can empower communities to create community sustainable value as they face increasing environmental and growth challenges. This surfaces the opportunity for the design and implementation of GIS to reduce information asymmetry, empower communities, and provide a history of decision-making, thereby enabling monitoring of the components of community sustainable value. Community members may incorporate local data, present alternative development/conservation scenarios, and gain a voice in the planning process. As Web-enabled GIS and low-cost analytic systems become accessible, the system design process itself represents an opportunity for situated social action in the formation of community sustainable values. Synthesizing these perspectives, we put forward the view that GIS development and use at a

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 157–173

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003013

community level is a potentially constructive social process of value formation that can enable communities to envision their own futures.

The map is the game board upon which human destinies are played out, where winning and losing determines the survival of ideas, cultures, and sometimes even entire civilizations. (Hall, 1993, pp. 370–371)

As human communities are faced with significant environmental and human-induced changes to living conditions, and strain is placed on world resources, the need to design for sustainability is increasing. In this chapter, we propose an information systems (IS) design perspective that posits a shift away from the dominant functionalist underpinning of design science research in IS to a focus on design as a means to generate and support *community sustainable value*. As communities seek to adapt to climate disruption, pursue community sustainability and resilience, and acquire empowerment in relevant affairs, researchers are beginning to recognize the need for using IS to create “new ways of being that did not previously exist and a framework for action that would not previously made sense” (Winograd & Flores, 1986). Three streams of literature inform our argument. First, *sustainable value* must be understood as a set of practices and strategies that ultimately contribute to global sustainability. But global sustainability is not solely the provenance of corporate activity. We must also reframe the activities and policies of *communities* to align with sustainable value. Thus sustainable value can be conceptualized as a multidimensional construct at the community level, not merely from a corporate perspective intended to increase shareholder value. The concept of *community sustainable value* requires a theoretical framework that highlights the interdependencies at the community level. First, a framework provided by Tobin (1999) suggests three high-level models that can be mapped onto the extant model of sustainable value (Hart & Milstein, 2003) and provides a conceptual starting point to define community sustainable value. Second, the generative capacity perspective on design (Avital & Te’eni, 2009) represents a shift from the functionalist emphasis on problem-solving, utility, and efficiency, which currently dominate design science research, to a pragmatic emphasis on the potential for human action (Goldkhul, 2004) and a neohumanist highlighting of emancipation from existing social order and the potentiality of change (Hirschheim & Klein, 1989). IS may increase generative capacity by providing the ability to identify new configurations and reframe mental models of sustainable value. Furthermore, there is a widening recognition that sustainability requires decision-making on

dynamic systems over time, not merely events or states. Third, community-based geographic information system (GIS) (Elwood, 2006; Sieber, 2006) provides a collaborative environment in which the communities can engage in a generative process of context- and issue-driven development and planning. This engagement supports the inclusion of local knowledge and divergent views, as well as community values of historic and environmental conservation, risk mitigation and recovery, and ideographic structural factors. In this way, participatory GIS can be used to develop and support community sustainable value.

This chapter presents a conceptual synthesis of these literatures and is not a comprehensive review. By combining perspectives on design, generative capacity, and GIS, with a community-centric view of sustainable value, we generate a new discourse that identifies the connection between IS design and community sustainable value. We propose that designing a participatory GIS encompasses a broad process that itself is a sociotechnical system that can serve as a generative force for emancipatory social activism supporting local definitions of sustainable value (Rattray, 2006). We put forward the view that participatory GIS development and use is a potentially constructive community process and not simply a tool designed to solve the problem of translating spatially referenced information into cartographic representation of patterns and relationships (Obermeyer, 1998).

SUSTAINABLE VALUE

The concept of sustainability has become a goal and an expectation for many modern corporations. Broadly defined, it is the ability to meet present needs without compromising future generations' ability to meet their needs (Brundtland, 1987). This is frequently simplified to a representation of the triple bottom line that becomes a strategic logic of corporations to deliver social and environmental benefits, while simultaneously enhancing shareholder value (Cooperrider, 2008; Figge & Hahn, 2004; Hart & Milstein, 2003). This corporate financial orientation is the fundamental bias of the concept of sustainable value and implies that environmental and social well-being are amenable to the same type of simple utility measures as economic health.

But as argued by Winsor (2001), the predominant discourse around sustainable value constructs the relationship between financial, societal, and environmental values based on *corporate interests*. Communities, on the other hand, have a broader set of interests and concerns not necessarily held by corporate investors. These interests and concerns include mitigation of

environmental risks, community resilience to recover from catastrophic events, preservation of meaningful areas (e.g., heritage buildings and culturally sensitive sites), maintenance of view sheds and auditory directives, quality of life, desired neighborhood characteristics, ecological diversity, community economics, development/conservation ratios, and optimization of environmental services. These interests are value-laden and are influenced by internal practical and ethical considerations, as well as external regulations and interdependencies. Although a growing number of studies demonstrate tight coupling between many of these factors (Folke et al., 2002), we begin by mapping the high-level concepts of sustainability, resilience, structural/social factors, and empowerment into the proposed framework for sustainable value. A preliminary conceptual view of the components of *community sustainable value* (Fig. 1) incorporates the idea that internal and external forces influence communities over time (Hart & Milstein, 2003) and that sustainable value is the result of dynamic complexities and uncertainty. This model emphasizes the recognition that members of communities are situated in specific geophysical and cultural environments that are subject to both human- and environmental-induced

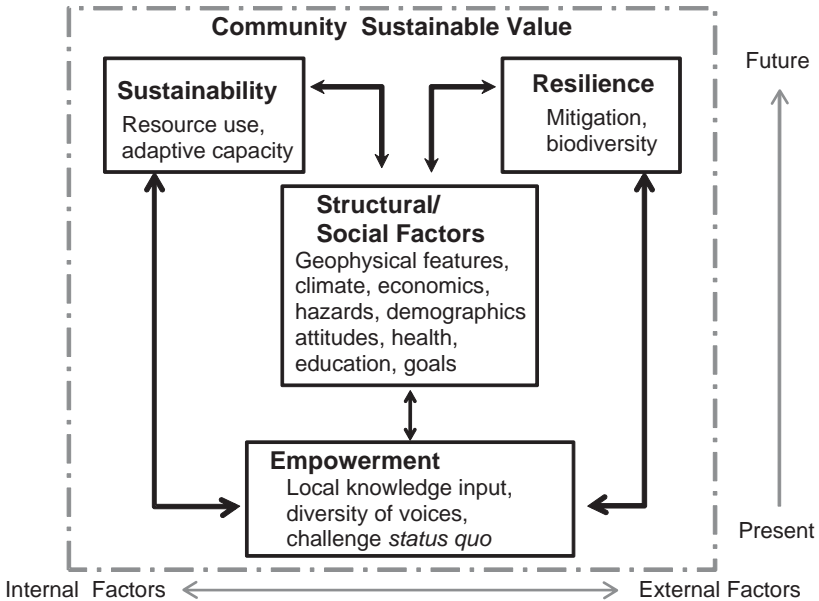


Fig. 1. Community Sustainable Value.

shocks and that the assumption of a local, stable, equilibrium state is unwarranted. As community members become empowered to have input in directing their own future, the specific structural and social factors of the community can be taken into account in the planning process for sustainable resource use and in creating resilience to future shocks.

As we focus on design as a method of reframing ideas and shaping alternative courses of action, we recognize that design of all IS is ultimately teleological – systems are designed for a purpose. The focus here is on IS that will guide decisions to support the factors which contribute to community sustainable value in a dynamic system. Unfortunately, the current discourse about *sustainability* is often quite muddled. In some instances *sustainability* is used to describe sustained (rather than sustainable) markets, sustained housing development, or sustained mining, as if unlimited growth is possible. Meadows (2008) asserts that world leaders and business executives, as well as community planners, know that economic growth is a major factor in sustainability. But she suggests that leaders misunderstand the nature of systems and feedbacks, and make management decisions that are not physically or economically sustainable. Growth per se is not sustainable, and as companies become more efficient users of resources, they tend to grow, resulting in a larger ecological footprint (Fiksel, 2006). The same situation occurs in communities, except that the growth drivers are both economic and population-based. Sustainability in this model refers to the capacity to adapt to changing conditions and needs and to the rate of resource utilization. This simplified concept will suffice for explicating the model and may be further developed in the future to reflect additional factors.

In addition to sustainability, many communities are becoming aware of *resilience* as an asset and are recognizing that resilience is a response to environmental factors. Resilience is the quality of a system to recover from internal or external shocks and to restore and rebuild feedback loops (Meadows, 2008; Tobin, 1999). Recent research (Fiksel, 2006; Folke et al., 2002) has indicated that a key to building resilience is incorporating local knowledge and using structured scenarios to highlight alternatives. Communities with the capacity to learn, self-manage, and adapt to socioeconomic changes and climate variation can achieve a greater degree of resilience.

Additionally, communities may benefit from better comprehending proposed changes to, or implementation and application of, government regulations and their implications for land use, as well as gain from understanding the science behind policy decisions. Communities may also look to move from passive acceptance to *empowerment* gained by leading from within (e.g., Craig & Elwood, 1998) – to better develop their awareness

of local resources and their inherent value; to better understand emergency preparedness; or to develop independence from corporate control of utilities, food, or other life necessities. Climate change awareness has generated desire to reduce local contributions to a carbon footprint (Australian Government, 2007) and to incorporate building practices designed within a regional climactic context (Department of Public Works, 2002). Some communities are looking for a “voice” to communicate local knowledge of place and representation in community decision-making. In addressing some of these concerns, or at least with more awareness of them, communities may feel better equipped to respond to change, while sustaining or maintaining their unique character and the way of life they value.

A major distinction between corporate sustainable value and *community sustainable value* is in the role of the people involved. Corporate shareholders have limited influence on strategic direction, policies, and day-to-day operation of the companies in which they invest. They are largely passive recipients of what corporations deliver to them in terms of societal and environmental benefits. But community members can play a much larger role in enacting the policies and strategies that will create community sustainable value. For example, people may invest in solar energy, clear fire breaks around homes, collect rainwater, and provide habitat on their property. These are very direct actions that reflect both personal and collective values. Thus community members directly create or diminish community sustainable value. Therefore, *structural-social factors* (Tobin, 1999) constrain or enable the available actions necessary for sustainability, resilience, and empowerment. Demographics such as age, culture, education, and wealth, in addition to geophysical factors such as local climate, topography, vegetation, and land use all contribute to actions that serve to create and maintain sustainable community value. Structural changes (e.g., flood control works and fire-preventative tree thinning) support both risk reduction and resilience, but social/cognitive aspects of mitigation are also important. For example, policy objectives must be clear and not undermined by future changes, and the causal mechanisms underlying hazard analysis, sustainable practices, and system interventions must be clearly understood (Meadows, 2008; Tobin, 1999).

Each of these factors, sustainability, resilience, and empowerment, contribute to community sustainable value. Overriding these high-level factors is the recognition that behavior of built and natural systems over time is quite often nonlinear and therefore difficult to predict and control (Folke et al., 2002). Consequently, community sustainable value must include long-term maintenance, monitoring, and adjustment – not merely single interventions or short-term goals.

THE ROLE OF INFORMATION SYSTEM DESIGN

The question now shifts to how information system design can support community sustainable value. The core values of IS design science research as promulgated by Hevner, Ram, March, and Park (2004) revolve around IS design as a functionalist problem-solving paradigm that produces artifacts evaluated in terms of utility and efficiency as determined by business requirements. Recent extensions to this basic framework begin to recognize two philosophical changes driving IS design. First, a perspective on IS through the lens of a pragmatic philosophy focus on interventions that “work” (Goldkhul, 2004) and that provide potential for human concern and action (Winograd & Flores, 1986). These information technologies may also be tailored to fit changing problem domains, task specifications, and user interests (Germonprez, Hovorka, & Callopy, 2007; Hovorka & Germonprez, 2009). Second, a reduction in the emphasis on problem-solving and an increasing focus on generative capacity (Avital & Te’eni, 2009) enables humans to accomplish goals in line with their own values. Design shifts from building artifacts that automate business processes to generative IS as a component embedded in complex social processes that support dynamic adaptations. The information system is not merely an artifact, but is an assemblage of things and people whose selection, configuration, implementation, and use is a generative process mitigating situated social action (Gasson, 1999).

The perspective of generative capacity shifts information system design and evaluation to support community sustainable value and nonfunctionalist ethics and values. In the next section, we introduce the primary functional characteristics of GIS and explicate the generative role it can play in the collection, analysis, and communication of knowledge from multiple sources, and discuss its capability to provide evocative, adaptive, and empowering capacity for generative action.

PARTICIPATORY GIS AND GENERATIVE CAPACITY

GIS Basics

At its most fundamental level, GIS can be envisioned as a collection of independent layers of information about a common location that represent features in the real world. Each layer contains discrete data, which when

combined with other data layers provides a geographic representation of the area of interest. Spatial analysis involves further investigation into the relationships among spatially collocated data, interpretation of the resulting patterns and their significance, and then communication of scenarios that illustrate those patterns. The results of GIS analyses are generally portrayed in maps or 3D visualizations, combined with an interpretation to facilitate understanding. GIS integrates information from disparate sources into a summarized form that is generally more comprehensible than its separate parts, and whereas the majority who encounter GIS typically see only the analytical end-product, GIS provides the mechanism to input, aggregate, derive, and synthesize the totality of information depicted in that visualization analysis.

Hence, GIS is comprised of software and hardware for collecting, storing, transforming, retrieving, and displaying data in the form of spatial locations and associated attributes (Burrough, 1986), although it is recognized there are many social corollaries and interpretations to GIS and its use (see Crisman, 1987; Pickles, 1995, 2006). GIS can thereby assist communication of information by envisaging current, alternate, or future frames of reference based on analysis of the spatial and associated data regarding a particular issue/area of interest. But GIS is not a simple value-free analytical tool. Interpretation and visualization of analytical results may be influenced by values held by the GIS analyst or motivation by guiding pressures. At the same time, the GIS may evoke possible alternative futures through scenario analysis and the ability to provide visualization and communication of multiple data types, and by allowing nonspecialists to provide input and evaluation. It is in this manner that GIS may be used to increase generative capacity.

Generative Capacity

Design of participatory GIS that supports community sustainable value can be informed by the concept of generative capacity (Avital & Te'eni, 2009) and by shifting the emphasis from creating a single solution to a known problem to designing IS that enable creation of contextually new possibilities and configurations. Divergent thinking is necessary for creating multiple models of options that may not have a single optimal solution. Importantly, the design of IS that enable generative capacity is characterized by their ability to evoke new thinking and to be adaptable to multiple use patterns and tasks. Participatory GIS implementations have a strong

congruence between the proposed generative capacity directives of Avital and Te'eni (2009) and the functions of GIS (Table 1). In addition to the evocative features of visualization, simulation, and communication, GIS supports georeferencing of multiple data types, thus allowing a wide range of representations (i.e., text, numerical, graphical, imagery, and videos) of both quantitative and qualitative data. GIS also supports extensive analytic geo-processing and generating new data through logical and numerical manipulation of data. By changing parameters and time horizons, multiple models and "what-if" scenarios may be examined.

Two additional characteristics of generative capacity are supported by participatory GIS. The ability to incorporate local knowledge and user-generated data into multiple layers that can be selectively displayed means the GIS is *nonexclusive* and can be adapted to specific tasks and needs. Furthermore, the ability to incorporate diverse views, contradictions, and disputes democratizes the decision-making process and may potentially lead to increased buy-in of decisions. The rationale underlying alternatives, values, and the decision process can be represented and communicated in the system, thus preserving the history of processes for future reference. This can be a valuable asset as community contexts change and new choices require attention. In addition, the GIS can *empower* users by providing a locus of data, group representation in the planning process, and discourse around which values and goals can be identified. The ability of GIS to include nonofficial voices and empower community members to participate and take responsibility is controversial, but successful instances have been reported in the literature (Sieber, 2006).

GENERATION OF COMMUNITY SUSTAINABLE VALUE IN PARTICIPATORY GIS

This research focuses on participatory community GIS as sociotechnical systems that provide communities capability to identify, reach consensus, and enact activities we identify as leading to community sustainable value. These capabilities include use of structured scenarios to increase cooperation within the community and with governmental agencies, utilization of publicly available geospatial and demographic data to incorporate structural and social factors in community planning (e.g., Elwood, 2006 and Rattray, 2006), and empowerment through reduction in information asymmetry by enabling stakeholders to directly upload and integrate local data.

Table 1. GIS Example of Generative Design Directives.

Generative Design Directives	GIS Feature	Illustrative Example
Evocative (Avital & Te'eni, 2009)	Visualization	Interactive map layers which can be individually displayed and symbolized “What if” scenario simulations for planning 3D visualizations, surface data draped over digital elevation models
	Abstraction	Panning, zooming in/out at multiple scales of detail
	Analytic	Analytic toolkit allows variety of geoprocessing and inclusion/exclusion of features and attributes by distance or characteristic
	Multiple data types	GIS references all data by spatial location, thus allowing any spatially associated data type, image, video, or text to be integrated
	Communication	Support for various output formats (texts, maps, statistics, graphics) as well as links to data archives, countertexts, and diverse media
Adaptive (Avital & Te'eni, 2009)	Component-based architecture and tailorable use	Multiple GIS components and publically Web-enabled GIS functions can be selected and combined Outputs can be redefined to align with user goals rather than functionalist standards of efficiency and utility
	Nonexclusive	Participation by nonspecialists Users with limited expertise can add data and local knowledge to system and create user-defined views of different layer combinations Representation of diverse views with presentation of contradictions and disputes
Empowering	Locus of value recognition/creation	GIS as a social and community building tool to identify and promote shared goals Can promote participation and responsibility in community members in development decisions and planning Can preserve and represent history of development and decisions as community context changes of time

Although GIS use for community planning has expanded dramatically in the past decade, Carver (2003) notes that technical connectivity and a lack of community coordination mechanisms makes it difficult to obtain input from a representative sample of the broad population. Users must

overcome the hurdles of obtaining hardware and software, data access, and required technical expertise. The skills, data, technical hardware/software requirements, and complexity of legislative decision-making have often limited the involvement of community-level stakeholders, leaving the interpretation and planning to government entities (Johnson, Walker, O'Brien, & Cottrell, 1997).

In a countervailing trend, public access to Web-enabled GIS is becoming commonplace (Miller, 2006). The popularity of Google Earth and other Web-accessible spatial technologies have produced "citizen cartographers," whereby spatial data creation by the interested public is proliferating outside of government and privately produced spatial data infrastructures, without the constraint of metadata and quality control (Parsons, 2009). As community-driven data collection and mapping become more prevalent, GIS has the ability to enhance public participation in community planning and to challenge the status quo (Sieber, 2006). Arguments have been put forward that although technical considerations must be addressed, they must remain secondary to the social goals that the technology serves (Crisman, 1987). Examples include use of Google Earth to georeference data from multiple sources, such as the New Orleans community contributing geographically located community announcements after Hurricane Katrina, user-generated maps of invasive pest species sightings, and documentation of local catchment environmental health. Web-enabled GIS is one direction for communities to develop sustainable value representations.

Participatory GIS has the potential of enabling community stakeholders to provide decision alternatives that embody their own intangible values over the traditional profit/efficiency measures. The shift has been driven in part by technological changes that have migrated GIS systems from centralized control by large stakeholders to a distributed and potentially generative environment (Miller, 2006). In the centralized case, community participation provides some input into the process, but information and decisions are controlled by entities situated externally to the community. As GIS tools become Web-enabled and easier to access, information asymmetry is reduced. But a major impetus for the shift has been the desire by communities to have a greater input in the decision-making process and by an increasing interest in community sustainability and intangible values. This allows for the cogeneration of sustainability and resilience strategies within the community and between the community and external entities.

Applications of Participatory GIS

Despite implementation barriers, literature contains multiple examples of successful participatory community GIS projects (e.g., see McCall, 2003; Sawicki & Peterman, 2002). The benefits of these projects cover a wide range of issues including:

- Separating *what is* from *what we want to be*. That is, making a clear distinction between what assets are held by the community versus what we want to do with those assets.
- Visualization and scenario comparison leading to more involved discussion of alternatives and increased sense of ownership of community decisions.
- Transparency and reduction of information asymmetry between stakeholders, thereby empowering communities to challenge plans.
- Effective tool for spatial understanding of government regulations and proposed economic activity. Sensitivity analysis can show areas that will be impacted by development, conservation, and recreation activities.
- Spatial analysis of community impacts from climate disruption such as increased fire hazard, surface and ground water distribution, areas suitable for reclamation with specific vegetation, slope and aspect (both land and built environments) suitable for solar power installations, view shed analysis for sound and visual impacts, and identification of ecosystem services.
- Participatory GIS can help educate communities and empower them to voice concerns challenging market-driven interests.

Two Australian case studies provide examples of the generation of community sustainable values in participatory GIS. In the first case, sugar cane farmers in Queensland use GIS to inform agriculture practices to reduce pollution from petrochemical runoff, improve crop yields, reduce input expenses, and increase water-use efficiency (Tickner, 2008). The Herbert River Catchment is located between the World Heritage designated areas of the Great Barrier Reef Marine Park and the Wet Tropics Rainforest. A map thereby immediately demonstrates the co-occurrence of geographically related community sustainable values – the established livelihood of community agriculture colocated with the stewardship responsibility for ecosystems of world significance – and brings into question the associated effects of one upon the other. GIS data layers include area soil type, nutrient levels, and salinity, drainage based on slope and aspect, and pest activity. Based upon variation in these factors, a GIS model of crop yield assists farmers in garnering location-specific information that leads to sustainable

practices and could quantify pollutant runoff into surrounding ecosystems. Subsequently, rather than a blanket areal application of fertilizer, pesticide and water, application is varied based on need. Illustrating the empowering directive of generative design (Table 1), the farmers use GIS technology to practice precision agriculture, assist in management of the local resources, and gain information about agricultural pollutant input to the World Heritage ecosystems. Thus community members are empowered to participate in the decisions that influence their community and share the responsibility (Bellamy & Johnson, 2000).

Another generative mechanism of participatory GIS is its use for planning support (e.g., CommunityViz and WhatIf? software packages, Klosterman, 1999; Kwartler & Bernard, 2001). Predictive spatial modeling allows users to visualize and assess possible alternate or “What if...?” scenarios. Based upon factors that describe a relatively well-understood situation, a predictive GIS model enables an investigator to modify input values, and thus envisage how the outcome is affected by particular changes. For example, “What if...?” scenario modeling was used to envision three possible patterns of future urban growth and land use, based upon different criteria, for an Australian coastal township experiencing rapid population growth (Pettit, Pullar, & Stimson, 2002). One scenario projected urban growth patterns from a nonintervention approach based upon existing socioeconomic trends. A second scenario modeled for optimized land valuations. A third scenario visualized a “sustainably developed” future derived from an environmental factor emphasis. The scenarios and their underlying models were demonstrated to the community and local government planners, advantages and disadvantages were evaluated, and the decision was made to formulate strategic plans based upon principles of sustainable development. Further iterative refinements of the model incorporated trade-offs in areas of conflicting environmental and economically significant areas of concern (Pettit, 2007). In this planning support case, GIS was used to generate better comprehension of conceptual ideas and models through visualization.

Developing Participatory GIS

The technological landscape of GIS is rapidly changing, as new analysis tools, services, and data become available every year. Evaluation of participatory GIS is not based on economic business performance but is based on a more pragmatic philosophy (Goldkhul, 2004) in which community sustainable value is a social construction situated in context. Therefore, it is incumbent

upon the community to realize and reconcile the competing values that exist and to monitor sustainability indicators such as water quality, vegetation, biodiversity, and hazard mitigation to determine the health of the community environment as an ongoing process. Thus the GIS are part of an ongoing construction of consensus on community values, which may include different degrees of emphasis on sustainability, resilience, empowerment, development, and economics. Furthermore, “when community-based projects have empowerment as part of their mission ... they help people, accomplish existing tasks and also build capacity” (Rattray, 2006, p. 30). Future instantiations of participatory GIS must also include research into the contexts in which *the information process* enabled by the system influences the outcome in a positive direction. IS research frequently naively assumes that an information system implementation will have a positive impact. This type of technical determinism may occur for well-defined problems that are more amenable to “solutions” through automation of ongoing processes, but it has been a source of criticism of participatory GIS as technocratic (Elwood, 2006; Pickles, 1995, 2006; Sieber, 2006). The concept of generative capacity changes our focus from seeking a stable solution to recognition that realizing long-term values is a process of constantly reframing the future. The actual community stakeholders may change, and the stakeholders values may also change as economic conditions, environmental factors, population, and numerous other characteristics are played out against the backdrop of evolving community values. Research in IS design would benefit from bounding the conditions under which GIS helps stakeholders with divergent values arrive at consensus – a generative social process.

DISCUSSION

World events are challenging our assumptions about climate, resource use, and human/environment interactions. In this research we posit community-based sustainable value as a variant to corporate-based models of sustainable value. By synthesizing concepts from sustainable value, generative capacity, and GIS, we suggest that spatially oriented decision support systems have the potential for reframing the way communities view development and recasting the future. This chapter contributes to the discussion in three ways:

First, we put forward the view that IS support a wide range of values beyond utility and efficiency. Participatory GIS has the potential to support long-term sustainability, resilience, and empower communities as they strive to meet the twin challenges of climate disruption and energy/resource

utilization. By reframing design science research to include generative capacity and to look beyond technological artifacts, we include the processes that enable human action. Emphasizing human actions and value-creation over traditional utility and efficiency measures changes the criteria by which sociotechnical systems are designed and evaluated. Participatory GIS can address the historic information asymmetry and power relations between government/developers and stakeholders in the community. Significantly, the use of participatory GIS can preserve both the history of the discussions and the differing viewpoints in collaborative activities. Inclusion and representation of divergent viewpoints are important aspects of empowerment, transparency, and consensus-building that contribute to community sustainable value.

Second, as communities seek a greater voice in their own futures, there is the opportunity for participatory GIS to play a generative role in developing alternatives. The ability to visualize scenarios does not end after a specific set of development/conservation projects are completed. Rather, the long-term goal of community sustainable value can be pursued through continued monitoring of economic, sustainability, resilience, and quality-of-life measures. Monitoring can help a community in determining whether the selected actions are having the desired effect on the dynamics of the community or whether additional interventions are required. The decision process shifts from a one-off event to ongoing evaluation of complex socioeconomic-technical systems.

Finally, we propose that the design, implementation and use of participatory GIS can itself provide mechanisms by which communities can identify, discuss, and reconfigure values and alternatives. Just as traditional requirements elicitation can help identify key assets, issues, and values, the design and use of the participatory GIS provides a language and a focus for empowerment, involvement, and reframing of community sustainable value. Thus, even with a minimum of what we might consider to be system outputs (i.e., maps, charts, and graphs), the *design process* for participatory GIS increases the generative capacity for a community to envision its own future and pursue community sustainable value.

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THE ART MUSEUM AS LABORATORY FOR REIMAGINING A SUSTAINABLE FUTURE

Theresa McNichol

ABSTRACT

The ability to imagine our world being arranged along different lines is the first step to achieving sustainability. This skill comes particularly easily to artists and designers, who have been trained to appreciate the unexpected connections among facts, ideas, and images. It also comes more naturally to young people. As designers and teachers, how can we help others take that first step? I argue that museums offer the right settings and tools for opening eyes to seeing new possibilities. Students' personal accounts of their experiences in an art museum demonstrate that private, focused encounters with artifacts from other periods and cultures can trigger the process of seeing the world from new angles. Providing opportunities for business leaders to replicate such experiences of wonder may offer a path to stimulating the innovative thinking so critical for a sustainable future. This chapter argues that cultivating both the imagination and moral artistry are vital to moving from sustainability to achieving sustainable value.

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 177–193

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003014

The *ability* to imagine the world being arranged along different lines is the first step to sustainability in any arena, whether in business, institutions, communities, or nations. In too many situations, sustainable development has fallen short of the mark because of a failure of the imagination. This chapter proposes cultivating the imagination as a way to move toward sustainable value. This skill comes especially easily to artists and designers, who have been trained to appreciate the unexpected connections among facts, ideas, and images. It also comes more easily to young people. Innovation has unexpected and unpredictable entry points; world-changing ideas often emerge from unlikely persons and places. Indeed, some business leaders are beginning to suspect that students may represent the cutting edge of sustainable design thinking, a key business opportunity for the twenty-first century (Cooperrider et al., 2009). At a recent presentation on energy efficiency strategies, for example, John Conover III, the president of Trane Commercial Systems Business in the Americas, shared his company's interest in input from engineering and science students. At the same conference, Philippe C. Dordai, a foremost professional in LEED accreditation, said that architecture students frequently tell him that their faculty and institutions are not keeping pace with young designers and architects in thinking sustainably.¹ Both leaders agreed that moving forward to a future of sustainable value would require a mind-set based on, and prepared for, transformation.

Seeing students as a potential source for fresh ideas turns the practice of looking into the charismatic leader for solutions on its head. However, students cannot do it on their own. A shift to sustainable value will require change at a deep, systemic level. As Tom Friedman recently put it, "America has lost its ability to think long-term and instead produces 'suboptimal' responses to its biggest problems – education, debt, financial regulation, health care, energy and environment" (2009). The operative question now is how can a much wider range of people – from both the business community and the general citizenry – begin reimagining a more sustainable future? What can we as teachers do to make that possible? How can we help others take that first step?

Over the years, without fail, my students have surpassed my expectations about their capacities to expand their horizons and to arrive at insightful conclusions. As a requirement for a course that I teach on non-Western art history at a community college, students must visit a museum twice in the semester and write a paper on an object of their choice. Although many of the students have visited museums before, hardly any have ever ventured into the Asian and Pre-Columbian art galleries. Their experiences

demonstrate the power of appreciative intelligence (AI), as identified by Tojo Thatchenkery and Carol Metzger: the power of reframing, the appreciation of positive possibility, and the ability to see the future unfold in the present (2006). In this chapter, I use their first-person accounts as a touchstone to demonstrate the important role of museums in unleashing the imagination. My aim here is threefold: to acknowledge AI in every person, to acknowledge the capacity of art to help people think sustainably, and to highlight the role of museums as a resource for tapping into that capacity.

BACKGROUND

My current students represent Generation Y (ages 18–28), the first “native online population”: technologically savvy, raised on video games, famous for short attention spans. Others are returning adults: members of Generation X (ages 29–42), who have been described as self-reliant, focused on life goals rather than work goals, comfortable with technology, and loyal to people, not institutions (Stefaniak, 2007). I have also taught a version of the course at the university level. In my first decade of teaching, the majority of students were majors in the visual arts, design, and art history; over the years, nonwestern elective requirements have resulted in an influx of students with majors outside the arts – business, education, science, mathematics, health, and social sciences.

After several years, I began to see a pattern emerging in the students’ essays. As these students wrote about their encounters with museum artifacts, they were describing insights concerning meaning, recognizing patterns, and making connections that gave them a newfound appreciation for the world around them. The museum became their laboratory, and the papers became, in effect, a set of laboratory notebooks, recording their aesthetic experiments and providing data about their intellectual lives. The students’ papers show that by visiting museums and looking at art, they are reframing and enlarging their vision of the world in ways that seem to change personal action.

Methodologically, the student examples discussed below are a small subset of those produced over the years, but they are representative of a common experience: the transformative power of art to provide a new way of thinking about our world. Although the writing quality varies, all of the accounts are distinguished by their *authenticity*. The accounts, for the most part, are by Gen X and Y students and equally written by male and female students, as well as art and nonart majors.

Both papers are intended to be creative assignments, not research papers. For the first paper, the students are instructed to describe their chosen museum object as well as their personal experience in encountering it. For the second paper, I give them Stephen Greenblatt's definitions of the terms "wonder" and "resonance"² and ask them to discuss whether the object they selected inspires one feeling or the other and, if so, why (1991, p. 45). My approach has been based on the method of appreciative inquiry (Ai), which I have found to be a more satisfying and effective pedagogical technique than traditional art criticism methods. Over two decades ago, Ai pioneer David Cooperrider identified the value of the appreciative framework as a positive methodology applied to organizational development as well as highlighted the ability to move away from problem-solving toward the imagination to explore instead the mystery of possibility (Cooperrider, Whitney, & Stavros, 2008). I soon organized my classroom methods around Ai's four-cycle model of discovery, dream, design, and destiny. However, whereas Ai works best as an approach and methodology for strengthening organizations, AI seemed to capture a mental ability displayed in the students' accounts: discovery of unexpected and new ideas; experiences of wonder; the identification of puzzles to solve; and a confidence in their ability to speculate, strategize, play with details, reach conclusions, and move into profound insights about their own aspired-for futures. Through their dialogical encounter with art objects from the past of nonwestern cultures and through their writings, the students underscore what it means to be human.

For most westerners, the aesthetic is more likely to be associated with a work of art – for example, a painting of a beautiful flower in a vase – than the ongoing process of becoming human. Rathunde and Csikszentmihalyi (2006, p. 489) quote Robert Kegan, who observed the way in which an individual is evolving continually "in an ever progressive motion engaged in giving itself form" (p. 482). Looking at non-Western art requires effort because it does not align with the Western framework of a masterpiece, but one of its rewards is identifying an innovative concept or idea against the backdrop of its tradition of thought (p. 489). The worlds' wisdom traditions, accumulated over several millennia, provide a wealth of information just waiting to be tapped. For the youth Siddartha, better known as the Buddha, leaving the palace in secret late at night brought him in contact with the guru meditating on the meaning of life. The choice to leave behind his familiar palace life for the discipline of an ascetic transformed his experience. On a less grand yet still challenging scale, the students in this study leave behind a personal computer or Xbox to venture into low-lit museum galleries for their encounter with the "ancestors."

GUIDING IDEAS AS SUSTAINABLE VALUE

The heralds of the sustainable design revolution have advocated moving from ideas to objects, by starting with evocative, new, guiding ideas that will transform our practices and ultimately create new artifacts (Senge, 2009). The student assignment – in contrast to this approach – starts with focusing attention on objects and then moves to ideas. Humanity’s artifacts from the past give us a way to recalibrate our guiding ideas and create new practices toward sustainable value. Objects in museums epitomize sustainable value: generations both past and present have seen something worth preserving for future generations in these artifacts.

In the past, organized religion was the primary vehicle for conveying the culture’s symbols to the next generation, thereby providing some guidance as to what is worth preserving. In *The Religions of Man*, Huston Smith (1958) wrote that every generation must find ways to convey their ideas about what is important to the next (p. 91). Human beings are unique in that they live by innovation rather than by instinct. Therefore, the “eons of trial and error” of the ancestors must be passed to future generations in order to preserve the culture. Of all culture’s institutions for transmitting the wisdom of the past, Smith says religion has proven the stronger in conveying culture’s traditions, customs, and rituals (p. 91). Yet today, modern free-market capitalism has largely displaced religion as the arbiter of dominant values, not only in the West but increasingly in the East. What, then, do students make of museum objects, many layered with a religious significance with which they might not be familiar, that have been preserved for hundreds or even thousands of years? Their positive responses suggest that museum objects continue to carry meaning for the astute viewer:

When looking at this piece I felt the need to look at from different perspectives. Not just physically but mentally because I see how different we live from these people. Their beliefs seem so much stronger opposed to the way we portray our own beliefs. It also seems that there is a lot more dedication to their religion than the way we hold religion in our own society today.

This ability of the student to look at different perspectives, physically and mentally, is a key ingredient for reframing as in AI.

Although the viewer is not of the religious tradition represented by the artifact, she still has an appreciation for its wealth of positive possibilities. Students are not only able to see the future unfold in the present, but also exercise the unique ability identified by the geographer, Yi Fu Tuan (1980), “to make the past as palpable as the present” (p. 8). Objects in museums

epitomize sustainable value in that generations both past and present have seen something worth preserving for future generations in these artifacts. In contemplating the values of past societies, students are reaching beyond themselves to begin to think more critically about the values of their own.

MUSEUMS AS WONDER LABORATORIES

Museums have a stewardship role in fulfilling the needs of the world at large, and they do this by providing visitors with vignettes of the past that allow them to contemplate and make connections in the lived present as well as the future. In the words of Timothy Rub, former director of the Cleveland Art Museum, museums are positive institutions with “wonder rooms” that fill us with possibility and living purpose because they guide us into the future.³ Moreover, according to George Hein, by applying universal design, museums endeavor to counter such barriers as “social class, poverty, educational disadvantage, ethnic and cultural background, disability and personal attitudes” to provide equal access to all (Hein, 1998, p. 168).

Museums provide a trusted, safe environment for virtual “think tanks” for design thinking and as “laboratories” for testing visitor ideas against those ideas that have stood the test of time. They allow us to imagine what can be and enable risk taking, encouraging us to take up our charge of future obligation by way of a deep appreciation for the past. Moreover, museums offer what Gallagher (1998) refers to as “islands of humanity” and places of respite to think, reflect, and ponder – opportunities too rarely afforded us in ordinary daily living (p. 139). Philippe de Montebello, the former Executive Director and CEO of the Metropolitan Museum of Art, described the museum’s role as “showcasing mankind’s awe-inspiring ability to surpass itself so that even at the bleakest times one cannot wholly despair of the human condition” (Kamerick, 2005, p. 14). By acknowledging the multidimensionality of humans – we are more than rational beings – museums add value as venues for cultivating the imagination.

Referencing the work of psychologists Mitchel Adler and Nancy Fagley, Thatchenkery and Metzkey have emphasized the role of “awe” in AI (p. 70). Compared with ordinary experience, the experience of awe is heightened in AI. My students have similarly reminded me about the way in which awe or wonder opens one up to a storehouse of ideas, setting off a process of inquiry into the depths of meaning. It is here that, in some ways, the student experience is superior to that of the connoisseur: one can know all about the physical properties of the sun – distance, mass, radius, luminosity, age,

chemical properties – and yet not have experience of the radiance of the sunset (Whitehead, 1956, p. 538). Young people can more readily access a wholly new world through the “eyes of wonder.” As Jerome Miller (1992) puts it, “that toward which wonder directs us is not an object *in* the world, but a world unto itself, and we discover it *as* a world not by observing it but only by surrendering to the throe of wonder which gives us access to it” (p. 175).

Consider, for example, what a student wrote about a Japanese screen painter’s magic-like ability to transform a once solid screen into a “looking glass”:

To invoke wonder through a simple image on a flat surface is an incredible ability. A simple Japanese screen, that was once unmistakably opaque, can be transformed into a clear window, with a view that expands out into a completely different world. It is a great skill that requires only a few brushstrokes, but a lot of discipline and a lifetime of learning.

By allowing the students to be our guides, we too can “see” through what was once solid to new vistas of limitless possibilities. Our ability to see is in direct ratio to the amount of imagination brought to bear upon the experience.

DIMENSIONS OF THE MUSEUM EXPERIENCE

The students initially experienced trepidation at the thought of entering a museum. Fear of the unknown, however, soon gives way to discovery. The students come upon objects similar to those they have seen in class and, more importantly, they begin to perceive relationships and connections as their motor responses now become the instruments to serve consciousness (Dewey, 1934, pp. 24–25). One student described his newfound confidence:

When I was walking around the lower gallery of the museum, I was immediately drawn to a small Indian sculpture. It was one of the simplest in the collection and I was afraid I wouldn’t be able to write a paper on something so uncomplex and understated. As I wandered from exhibit to exhibit, I kept thinking about this small modest sculpture. Inevitably it chose me, because I went back to it again and again. I appreciated it for its aesthetic simplicity as well as for its symbolic complexity. I no longer felt anxious about my paper and enjoyed the sculpture for what it was, realizing the profound connection I had made.

Looking through the eyes of the student, we see that wonder provides an entry into an entirely different world. Philosopher Susanne Langer (1953)

noted that although common sense is looked upon as desirable knowledge because it is prompt and categorical, it is also inexact. That is why art is so important to human beings – we want and need to see what the artist–designer sees – “the unrecorded reality, momentarily recognized, yet often pushed below the surface” (p. 238).

But the museum is more than a destination: it is a threshold not only to a timelines of the world’s cultures but also to the continuum of past and present. In the below example, the student approaches her project like an archaeologist:

Unlike the Metropolitan Museum in New York, the Princeton University Museum is very small and private. There was no one else there while I was walking through the Pre-Columbian exhibit. With the stillness of the museum’s lower level and the dramatic lighting, I became completely absorbed into the art, culture and its people as if part of them were still alive within their art. This created a sense of resonance, and kept me engaged in the collection for quite sometime ... Thinking about it now, I didn’t really feel alone while I was the only person walking around the lower level of the museum. It seemed like the objects in the exhibit spoke to me, like there was something I needed to learn from them, and while I may not be able to explain exactly what it is, I felt as though I received the message.

Here, we see a student relying not on the information supplied on a label by a museum expert, but rather “trusting” in the primary source and “listening” to the idea expressed from within the object itself.

Focusing our attention on an object allows us the ability to see more than meets the eye. The students move beyond simple recognition to perceive the “guiding idea” in the art object and embark on *creating* their own experiences (Dewey, 1934, pp. 53–54). As the artist Paul Klee once explained, “The object grows beyond its appearance through our knowledge of its inner being, through the knowledge that the thing is more than its outward aspect suggests” (Klee, 1879–1940). One student contemplates a small object and penetrates its deeper meaning:

To truly meditate on something, there should be room for thought ... the importance of “The Guardian Lion” is that though it is small in stature, it is still able to capture my attention in the midst of a sea of overpowering artworks. This speaks volumes about the soul of the piece, the strength of it, the character that was captured by the artisan. The qualities that exist are almost infinite in number of creating complexity through simplicity. The Guardian Lion” is a perfect example of what we call “wonder” as it can quell the tides and part the seas for a moment of enlightenment.

The guiding ideas, practices, and artifacts for every age are on display in the world’s museums, yet sometimes even so grand an edifice as a museum

can encompass neither the grandeur of the idea nor the artifacts that embodies it:

The piece of art I am talking about is so monumental, it cannot be contained in a museum. It is the *Pyramid of the Sun* in Teotihuacan, Mexico.⁴ My fascination with pyramids began about six years ago when I visited my home country and saw the Great Pyramid of Giza located in Egypt. Standing next to one of these pyramids makes one realize how insignificant and minuscule human beings are. The massive size, the craftsmanship, and detail put into the pyramids (both in Egypt and Mexico) makes one realize that our technologically advanced culture is still far behind the ancient people in knowledge and skill ... perhaps an even greater accomplishment of the ancients is that they knew how to live and cooperate with nature. They were able to maintain fairly large cities without stripping the land of all its life and resources. That is possibly the biggest struggle mankind must contend with in this current age.

While acknowledging human insignificance, this student also acknowledged the ability of human beings to think big guiding ideas. He allowed his experience in the museum to lead him into contemplation of the challenges of the present and his hopes for the future.

THE PLAYFUL MIND

By looking through the eyes of the students, we are prompted to ask: “Exactly what do they see?” It has been widely that Generations X and Y prefer museums that use advanced technology and interactive exhibitions that mimic video games for their ability to hold their short attention spans. Yet remarkably, the majority of students in my class have chosen to visit traditional museums and the small but rich galleries at a neighboring university museum.

Although the assignment itself is experiential, students taking this course are taught to focus on art objects like art historians. Art historians, although for the most part nonartists, have a keenly developed eye for the design principles inherent in successful works of art and an understanding of the ways artists use their tools. Glen Lowry, director of the Museum of Modern Art, MOMA, described this ability “as a way of looking and an interest in looking that was very powerful” (Kinzer, 2004, p. G10). So powerful, that Lowry himself could not imagine living another kind of life. In describing his own approach to understanding art, Lowry credits his teacher art scholar S. Lane Faison who stressed both history – the context in which a piece was produced – and design, particularly shape (Kinzer, 2004, p. G10). Responding to the elements of design such as color and shape often can set a

viewer on the path of inquiry that will satisfy the intellectual curiosity that an artifact prompts. As this student wrote:

After spending five hours perusing through the Asian Galleries, I finally reached the Bronze Vessels from China and became *instantly* entranced ... The uncluttered simple ornamentation of the Shang (1700–1027 BCE) and Zhou period (1027–221 BCE) [bronzes] combined with the strong basic shapes of the *yu* drove my selections. The unique form, along with the sensuous shape and delicate ornamentation of [this particular] *yu* really intrigued me, and sealed my choice. Since I lacked the three-dimensional vocabulary and historical information I needed to understand this Shang Dynasty bronze *yu* (the shape did not appear on the handout), this *yu* now acquired a special sense of mystery for me. To answer my questions on the physical, historical and aesthetic information for this paper, it lovingly led me on a trail of research and discovery, endearing it to me even more.

This free play of the mind serves the students well in the museum, as they allow themselves to be transported in virtual time to examine artifacts of past civilizations and cultures. One student stood admiring a Chinese landscape painting and imagining himself at its peak looking at the view below, drawing on his experiences skiing in his native Pennsylvania:

When I was looking at the painting (*Summer Mountains* handscroll in ink and light colors by Qu Ding, Northern Song Dynasty 960–1125 CE), I actually started to visualize myself in the mountains and what it would have felt like. It was strange but I found myself get a chill that I would normally get on a midsummer's night in the mountains. I love the mountains and I spend many weekends in the local mountains of Pennsylvania. I think that they are so beautiful and the mountains in this particular piece of art are so amazing. I love to stand on top of a ski slope and feel like I am on top of the world; I could only imagine the powerful feeling of being on top of the mountains in this painting. I think that this is what drew me to this particular masterpiece ... I have always been intrigued by the Asian landscape and how beautiful it is. This painting displays this beauty in a marvelous and precise way.

This kind of appreciative engagement with the art object sparks the imagination to supplement the “data” at hand with the “ideas” that flow from the direct experience with an object (Dewey, 1910 [1933], pp. 104–105). Note in the below example, the viewer trial tests any number of possibilities. He does this through action – not overtly – but in the imagination. When he has “tested” any number of scenarios and is satisfied with them he then forms a judgment that is imbued with meaning and understanding:

When I was walking around the museum, I was waiting to see something mesmerizing to put me in a state of awe ... I looked at the scenes from “The Tale of Genji” and experienced a feeling of resonance ... I immediately imagined myself as a bird flying through the sky because the gold clouds are dominant at first glance. As I examined the piece longer, I was able to imagine myself taking part in the court life of the

Heian Period (794–1185 CE). After I amused myself with several different scenarios, I realized the cultural forces from this period are as dynamic as the composition itself. I was amazed that this screen retained a force strong enough to evoke such a pleasing experience after so many years.

Could looking at art benefit business leaders in the same way as the students? Consider the parallels between the student's comments and this quotation from Sybil Gordon Kantor's (2002) study on Alfred H. Barr, Jr., the founder of MOMA and a noted scholar, connoisseur, and institution builder:

I think of scholarship not only as a matter of facts, but also of criticizing and more importantly as an effort to arrive at broad conclusions and judgments. This is the most difficult I think. In the modern field I have tried to relate the present to the past and art to other activities. (p. 375)

APPRECIATIVE INTELLIGENCE AND CRITICAL THINKING

A recent *New York Times* article on the retooling of the business school curriculum notes a tectonic shift from quantitative analyses and methods to the type of thinking that has been traditionally associated with the liberal arts. Students are now encouraged to “imaginatively frame questions that consider multiple perspectives” (Wallace, 2010, p. BU1). Almost across the board, traditional instruction has focused on separate disciplines such as marketing, strategy, or finance, with its emphasis on quantitative analyses and methods. Even Philip Kotler's book on marketing, which included a chapter devoted to creativity in earlier editions, has been “rationalized” in subsequent editions (McNichol, 2005, p. 240). A dichotomy between right-brain and left-brain thinking relegates the former to the arts and humanities while the rational holds court in all “serious” subjects universally accepted in all domains of knowledge. One student encountered just this attitude on her visit:

“You must deal with this art on a right-brain level. It takes a much greater psychic toll on you than Western art. You cannot rush through it.” I listened as a middle-aged American gentleman guided his female British companion through the Pre-Columbian art gallery. Silently, I agreed that you couldn't rush through it. After all, this was my second trip to view the clay sculpture I have chosen to write about. The right brain processing I am not sure about. I have found myself thinking quite critically about this fascinating two thousand-year-old piece of art.

In the past two decades, the findings of neuroscience – a loose federation of cognitive science, neurobiology and psychology – are contradicting the West’s deeply held notion of the split between the brain and the emotions. Art objects that are initially appreciated for their contextual idea set in motion the cognitive functions that cross multiple frameworks, cultures, and disciplines. Kerry S. Walters (1990) explains that both types of thinking depend on each other; they cannot operate independently:

Critical thinking and creative thinking are not incomparable with one another or mutually exclusive... Logical inference, critical analysis, and problem solving are fundamental qualities of good thinking, but only if they are complemented by the cognitive functions of imagination, insight and intuition – essential components of the pattern of discovery. The latter serve as necessary conditions for innovative speculations, intellectual and artistic creativity, and the discovery of alternative conceptual paradigms and problems. They facilitate flexibility and adaptability of new ideas as well as novel situations and are thereby essential to the nurturing of responsible, free, and reflective adults and citizens. (pp. 456–457)

Aesthetic experiences can reveal a great deal about human potential and may provide ideal conditions for learning (Walters, 1990, p. 467). Accessing the guiding idea in a work of art puts viewers in direct contact with generative ideas that, in turn, encourage the free play of the mind.

Art objects truly come “alive” through the active participation of the viewer. A student viewing a Chinese handscroll, *Poem written in a boat on the Wu River by Mi-fu* (1052–1107 CE) at the Metropolitan Museum of Art, for example, is able to grasp its meaning, despite not being able to read the Chinese calligraphy. He taps into not only the correspondences between the calligraphy’s flowing characters and the flowing river, but also the structure and relationships of the ink strokes to the paper:

Unlike any other alphabet of the world that the viewer has seen, the Chinese written word, also a poem or story, is not only beautiful to the ear but to the eye. The flow and variation of characters gives the viewer a feel of the slow, steady, yet varying movement of the river which the artist was reflecting upon at the time. Opposing, the piece also conveys a sense of structure. The strong, geometrical appearance of the vertical writing along with the near perfect spacing of each column passes on a sense that the artist felt free to be as creative as possible with the characters themselves. But on the other hand, the spatial relationship of the entire piece and the relationships between the characters and the white space portray a strong sense of community and structure.

Like scientists toying with a theorem, the students’ aesthetic wonder allows them to play their minds over the details of the object that mobilized their attention, turning interest, and delight into intellectual alertness.

UNDERSTANDING BY DESIGN

We have seen that museum objects can be sources of generative ideas and AI, but does this experience have application beyond the museum walls? As a parallel, consider a story told by Jonas Salk, the creator of the polio vaccine. In his book *Anatomy of Reality*, he explained that he developed a system of thinking that enabled him to view viruses and the immune systems as objects and to imagine the ways they would interact with each other. Salk (1983) believed that the reframing, or what he referred to as “inverted perspective,” ultimately led him to his scientific breakthroughs. As a young person, he would imagine himself in the position of the object in which he had an interest. Later, as a scientist, he imagined himself in the role of a virus or a cancer cell. He would then imagine himself as an immune system to reconstruct how he, as an immune system, might combat a virus, or cancer cell (p. 7).

Salk used his imagination to assist in solving the problem at hand:

When I had played through a series of such scenarios on a particular problem and had acquired new insights, I would design laboratory experiments accordingly. I soon found myself in dialogue with nature using viruses, immune systems, and other phenomena to ask questions in the form of experiments and then waiting for the answer ... When I observed phenomena in the laboratory that I did not understand, I would also ask questions as if interrogating myself: “Why would I do that if I were a virus or a cancer cell, or the immune system?” Before long, this internal dialogue became second nature to me; I found that my mind worked this way all the time ... when I started to ask larger questions about the human world, it came naturally to me to play the same kind of game. (p. 7)

In his own striving for a different and broader perspective, Salk (1983) developed many perspectives so that he could view things from “outside himself, outside the ‘here and now,’ as well as within” (pp. 7–8). Thinking sustainably will require just this kind of insight, from the individual level to the outside world.

I began by noting a growing interest among business leaders in tapping the vision of students and young designers. Can this experiment with my students be applied to the business sector? Can museums and their objects stimulate innovation and sustainable thinking in the commercial world? When the first Business as an Agent of World Benefit (BAWB) conference brought together industry leaders in 2007, it sought to ignite a “corporate citizenship movement uniting sustainable design and business strategy” (Cooperrider et al., 2009, p. 3). BAWB’s organizers and participants hoped that it would mark the beginning of a “globally inclusive system that

respects and replenishes the health of people, diverse communities and the wealth of nature” (p. 3). The collapse of the global financial markets only a year later challenged that vision.

As a result of my students having transformed my thinking, I am optimistic about the future. My students’ AI and their unique perspective strengthen my hope semester after semester, giving me a glimpse into a future of sustainable value as long as there will always be museums with art objects as guideposts. In the words of one “sage student”:

Humanity is ever seeking its image in remnants of the past. What is human throughout the ages remains identifiable always in its ability to engage the emotions of the seeker by its very presence. All things in art and life resonate when they are perceived to be human as they are. To be one with men across time and cultures requires only an open mind and heart with which to meet them.

Such freedom of spirit makes one naturally pause to wonder at all the world. For eyes that embrace, see in every aspect of their vision a mirror of that familiar, seeking self ... an image of the self to be found in the most seemingly foreign of cultures (where) a gentle humanity resonates ...

Each semester I tell my students that I am grateful for the connection they made with the past about their own lives and allowing me the privilege of a glimpse into their future. My hope for them is that they continue to nurture their own unique abilities and cultivate their imagination, bringing it to bear in the workplace, in their homes and in the community-at-large. I hope also that they spend their careers in workplaces that are “positive institutions” that will replicate their museum experience in that they “elevate, magnify, and refract our highest human strengths (wisdom, courage, humanity, compassion, inspiration, creativity, freedom, hope, joy, integrity, love, and meaning) into the world” (Cooperrider et al., 2009, p. 3).

More than this, I am hopeful that adults, too, can come to experience the transformative sense of wonder offered by the museum experience. Cultivating the imagination attends to our “moral artistry” (Fesmire, 2003, p. 87) as we acquire what Dewey referred to as “intelligent sympathy” (1916, pp. 120–121).⁵ While sympathy is a desirable quality in and of itself, “intelligent sympathy” is a deep, abiding, and sincere benevolence that is never meant to mask a feigned benevolence in an attempt to control another. Rather it is the act of thinking and feeling freely as an individual, while at the same time seeking and humbly allowing others to find whatever they themselves choose (Dewey, 1916, p. 121).

In the final analysis, art is transformative in that it can evoke in the individual a permanent realization of values extending beyond the

individuals' former self (Rader, 1956, p. 540). Cultivating the imagination also helps us reconnect with the capacities of the heart, which for Gallagher (1998) is the central mechanism for society to reconnect with depth in its "strivings for wonder, searching, listening, and receptivity" (p. 139). The student accounts demonstrate that museums are vital centers of value in that they not only affect an individual on a very personal level, but also in a very sustainable way reconnect one with generations both past and future. That is, the appreciation of art objects is in itself an acknowledgment of gratitude to our ancestors for goods we have received. Our appreciation deepens the bonds of continuity with the past by assuming an obligation to pass those goods along to future generations (Fishman & McCarthy, 2007, p. 161). As contemporary Confucian scholar Tu Wei-ming (1985) explains, "If the world is not as it should be, a profound person transforms where he passes and works wonders where he abides. He is in the same stream as Heaven above, and Earth below (p. 103).

NOTES

1. "Proven strategies for making existing buildings energy and operationally efficient." Speaker: John Conover III, President, Trane Commercial Systems Business in the Americas; Philippe C. Dordai, AIA, LEED AP, Principal, RMJM, USGBC-NJ US Green Building. Program sponsored by the Institute of Sustainable Enterprise, Fairleigh Dickinson University Seminar, June 19, 2009.

2. This was my introduction to "Reality in Translation: An Arts and Leadership Evening," an exceptional evening program for conference attendees designed by Nancy J. Adler, Professor of International Management, McGill University, Montreal and visual artist, in conjunction with The Cleveland Art Museum curators and educators, June 3, 2009.

3. "By *resonance* I mean the power of the object displayed to reach out beyond its formal boundaries to a larger world, to evoke in the viewer the complex, dynamic cultural forces from which it has emerged and for which as metaphor or more simply at metonymy it may be taken by a viewer to stand. By *wonder* I mean the power of the object displayed to stop the view in his tracks, to convey an arresting sense of uniqueness. To evoke an exalted attention."

4. Teotihuacan arose around 500 BCE, and quickly became the largest and most populous urban center in the New World flourishing until its mysterious sudden collapse possibly in the seventh century. Little is known about this pyramid, the largest in Mesoamerica, its builders nor the exact meaning of its architectural structure.

5. I am grateful to Professor Emeritus George E. Hein, museum education and Dewey scholar, for pointing this out to me along with Vito Perrone.

ACKNOWLEDGMENTS

I am grateful to all my museum colleagues and Asian studies experts Annette Juliano and Douglas Wile. I am appreciative to the editors of this volume edition and to Lawrence Mansier, Ann L. Morgan, Emlyn Koster, Kelly Corboy, Antonio Damasio, Harris Shettel, Jeana Wirtenberg, and Morgan Arenson for their reading and comments. I would like to thank my Princeton Research Forum colleagues, especially Karen Reeds and my editor, Audra Wolfe. Last but not least, I am honored to have participated in the personal journeys of so many outstanding students over the years and I thank each and every one of them from the bottom of my heart.

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TWO INQUIRY-BASED APPROACHES TO SUSTAINABLE VALUE: POSITIVE DESIGN AND INTEGRATIVE THINKING

David Dunne

ABSTRACT

Because it involves the interests of multiple stakeholders, sustainable value is a “wicked problem” that evades definitive formulation and clear solutions. Traditional approaches to problem-solving emphasize formulation of the problem followed by analysis and solution development. However, these approaches are inadequate for solving such problems because of they are so difficult to define. Two ways of approaching wicked problems are discussed: positive design and integrative thinking. Both are more appropriate than linear “formulate-then-solve” approaches, because they emphasize careful reflection and framing, focus on understanding the system as a whole and the needs of its users, and learning. In design, the focus is on deeply understanding users and attempting trial solutions as a means of framing the problem; in integrative thinking, the focus is on exploring the problem by inquiring into the mental models of stakeholders. Tata Motors’ decision to locate its plant in West Bengal was a wicked problem that involved the interests of many stakeholders,

Positive Design and Appreciative Construction: From Sustainable Development to Sustainable Value

Advances in Appreciative Inquiry, Volume 3, 195–214

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003015

and is presented to illustrate the two methods. The failure of this plant location project was extremely costly to Tata and to West Bengal, and it is argued that the decision process would have benefited from either positive design or integrative thinking.

INTRODUCTION

In May 2009, Tata Motors of India launched the cheapest automobile in the world, the Nano, at a price of Rs. 100,000 (\$2,500); yet, the project had been dogged by obstacles since its unveiling in January 2008. Violent protests by local farmers in the company's original manufacturing site in West Bengal drove the company to scrap this plan and move to Gujarat, uprooting suppliers, delaying the launch and reducing supply. The disruption resulted in severe production shortfalls; Tata was forced to cancel 15% of its orders and allocate cars by lottery. This alienated many customers and allowed competitors such as Maruti Suzuki the opportunity to respond (McGrew, 2009; The New People's Car, 2009; Alfaro, Iyer, & Arora, 2009a, 2009b).

The protests in West Bengal were a wake-up call to Tata management and an illustration of the massive challenges involved in sustainable value. To deliver sustainable value, a company needs to consider the economic, social, and environmental impact on the community (Hart & Milstein, 2003). In this chapter, it is argued that sustainable value is a *wicked problem* (Rittel & Webber, 1973; Conklin, 2005) that demands careful framing and curious, empathetic exploration of stakeholder perspectives. Two inquiry-based approaches to such problems are explored: positive design and integrative thinking. The two models are compared and comments are offered on their potential for dealing with problems such as Tata's plant location decision. The next section provides some background on this problem, and will be revisited as an example throughout the chapter.

THE TATA NANO

In 2003, Ratan Tata, Chairman of Tata Group, announced his vision of a "people's car," the lowest priced vehicle in the world. The Nano, unveiled in January 2008, fulfilled this promise in a four-door hatchback with a 624 cc rear-mounted engine, no radio, no power steering, and no air conditioning.

As Ratan Tata was announcing the car, a group of protesters from Greenpeace demonstrated outside at the environmental impact of making such an inexpensive car available to millions of consumers. Such protests were repeated on several occasions over the ensuing years.

In May 2006, Tata reached a deal with the government of West Bengal to open a manufacturing plant for the Nano. The arrangement involved the acquisition of 997 acres of land in Singur, of which 645 acres were allocated to the mother plant, 290 to a vendor park, and the remaining acreage to state government agencies (West Bengal's Nano Impasse, 2008). Rent would begin at Rs. 1 crore (\$215,000) annually for the first five years, increasing steadily to Rs. 20 crores (\$4.3 million) by the 60th year of operation (West Bengal Industrial Development Corporation, 2008; Alfaro et al., 2009a, 2009b).

Under the policy of Special Economic Zones (SEZs), the Government of West Bengal agreed to provide incentives to Tata in the form of exemptions from Excise Duty and Corporate Tax. Tata would invest Rs. 1,500 crores (\$325 million) and vendors were expected to invest a further Rs. 500 crores (\$110 million). The land was acquired by the government under the Land Acquisition Act and local farmers were paid Rs. 10 lakh (\$18,600) per acre of single-crop land and Rs. 12.5 lakh (\$26,250) for double-crop land.

Just a week after the plant's announcement, protests began over what some viewed as forcible land acquisition. As the project progressed, the value of the land shot up to Rs. 40 lakh (\$87,500) and many farmers felt they had been shortchanged. Mamata Banerjee, head of the opposition Trinamool Congress party, led the protests. In August 2006, the Trinamool Congress began an indefinite protest at the factory gates and blocked access to vehicles. Banerjee staged a 25-day hunger strike in December 2006.

The protesters' demand that some 400 acres be returned to farmers created major problems for Tata. It was not clear that the remaining land would be sufficient for the plant, and even if it was, returning the land would force many of its suppliers to relocate, driving up costs and jeopardizing the Nano's low price. Moreover, the 400 acres were spread across the site and it would not have been possible to carve off a contiguous portion for the plant.

The protest at the Tata plant coincided with opposition elsewhere to SEZs, most notoriously in Nandigram, where 14 people died in a clash with police. In subsequent elections in West Bengal, the Trinamool made significant gains, badly beating the governing Marxists, and the protest was seen as another potential victory for the party (West Bengal's Nano Impasse, 2008).

Tata suspended work on the plant and expressed its distress at the situation; in the view of Ratan Tata, the company had been caught in the cross fire between two political parties. By October 2008, when protracted negotiations between the government, Trinamool Congress, and the farmers reached a standstill, Tata announced that it was relocating its plant to Sanand in Gujarat, acquiring land at Rs. 3 lakh (\$7,000) per acre and writing off its investment in West Bengal.

Soon after the celebrations in Gujarat died down, several of Tata's vendors claimed compensation for losses resulting from the move. Gujarat Congress protested the deal, claiming that the government had sold out the state's interests (Gujarat Cong to Protest over 'Secret' Nano Deal, 2008); petitions were filed by farmers with the Gujarat High Court against the acquisition. The court rejected these in April 2009 and fined the farmers Rs. 10,000 (\$215) as a result of what the judges considered "frivolous, speculative and vexatious" claims (Gujarat HC Rejects Farmers' Petitions on Tata Nano Land, 2009).

The relocation delayed the launch by seven months and restricted the Nano's availability: while the plant was under construction, production was transferred to an existing plant at Patnagar in Northern India, with a capacity of only 50,000 units. As a result, the first 100,000 Nanos were allocated to customers by lottery and 15% of orders were cancelled (The New People's Car, 2009; McGrew, 2009). Meanwhile, competitors such as Maruti Suzuki were working on their own low-priced models, Tata's credit rating was under pressure and controversy about the Nano's environmental sustainability continued to rage.

DEALING WITH WICKED PROBLEMS

Sustainable value is intertwined with sociopolitical, economic, and ideological considerations. Shindler and Cramer (1999) examine the impact of shifting social values on forest management; Hart and Milstein (2003) explore the link between sustainable value and shareholder value; and Ludwig (2001) argues that sustainability cannot be approached in the absence of ideological considerations. Because of their broad reach across stakeholder groups and their diverse implications, sustainable value problems are often *wicked problems* that cannot be solved by traditional methods (Rittel & Webber, 1973; Conklin, 2005).

In their landmark 1973 paper, Horst Rittel and Melvin Webber described social policy problems as wicked problems that cannot be definitively described:

in a pluralistic society there is nothing like the undisputable public good; there is no objective definition of equity; policies that respond to social problems cannot be meaningfully correct or false; and it makes no sense to talk about “optimal solutions” to social problems unless severe qualifications are imposed first. Even worse, there are no “solutions” in the sense of definitive and objective answers. (Rittel & Webber, 1973, Abstract)

Wicked problems, however, are not confined to matters of public policy. Conklin and Weil (1998) related wickedness to the “pain” in organizations that results from frustration at not achieving results in the face of wicked problems. Camillus (2008) studied wicked problems in strategy development in companies in North America, Europe, and Asia. Coyne (2005) argues that wicked problems are not exceptions, but the norm, in an irrational world.

Each solution attempt to a wicked problem may redefine the problem itself. Rosenhead (1996) argues that Operations Research models generally do not fit well with wicked problems, since their goal is often optimization where the existence of multiple perspectives instead demands a systematic search of the solution space; the emphasis shifts from estimating numerical probabilities to identifying relevant possibilities. Similarly, Ludwig (2001) argues that because wicked problems in sustainability are affected by conflicting ideologies, scientists and managers cannot be “disinterested experts” but must consult with a wide range of stakeholders.

Wicked problems may give the initial appearance of tameness. For Tata, the development of the Nano was a tame, if difficult, problem: while it was certainly not easy to develop a \$2,500 car, the end goal was at least clear. However, because of its impact on the local community, the manufacturing decision became one of sustainable value, a wicked problem that involved the company in a host of issues around social and economic development, environmental concerns, political rivalry, and interdependency with its suppliers.

The SEZ Act, passed in 2005, allowed SEZs to act as islands of economic activity, offering firms tax, regulatory and infrastructure incentives to locate in these zones. In practice, SEZs often had to acquire land from local farmers and this raised concerns about the impact of industrialization on

traditional farmers. In some cases, farmers felt their land had been stolen from them and protests ensued. The Tata plant was one of several proposals that floundered because of these concerns.

To come up with a workable (but, by definition, not an optimal) solution, Tata management would have to recognize the wicked nature of the problem and consult broadly, taking into account views that were divergent from its own and expressed in terms to which it was not accustomed. To accomplish this, it would have needed a solution process with the following qualities:

Empathy: The ability to identify with the feelings, thoughts, or attitudes of others (Rogers, 1959). Since wicked problems are essentially social problems, any approach will necessarily require an ability to understand intimately the experience of those affected.

Multiple data forms: Since diverse stakeholders will have differing levels of ability or preparedness to communicate in different media, a method of dealing with wicked problems must be capable of admitting information in a variety of forms, including qualitative information and value judgments.

Multiple modes of reasoning: Wicked problems can be approached from a number of different perspectives, and each different perspective may yield a different set of answers. Hence, there is a need to accommodate several different ways of processing the data and synthesize them into coherent arguments.

The terms “inductive” and “deductive” reasoning are widely understood: *inductive* reasoning moves from specific observations to general interpretations, while *deductive* reasoning refers to conclusions drawn from a logical chain of reasoning. Other forms of reasoning include *transformational* reasoning (Simon, 1996), generated by inquiry into how a system works, and *abductive* reasoning (Peirce, 1903), dealing with what could be: using both general rules and specific examples, it builds on these to develop new hypotheses.

Suspension of closure on the nature/scope of the problem: Because wicked problems are not fully understood until a solution has been developed (Conklin, 2005), there needs to be a recognition, throughout the process, that the problem is not fully understood, nor will it ever be. The indeterminacy of wicked problems makes it impossible to know *ex ante* for what objective function one is optimizing; and since wicked problems have no stopping rule (Rittel & Webber, 1973), there is no point at which it can be said that the problem is fully specified.

Appreciation of system effects: Because wicked problems are characterized by complex interactions with other problems, there is no “correct” specification in the sense that one may choose to define the problem narrowly or broadly. Narrower definitions, while more tractable, run the risk of ignoring the effects of a solution on other parts; the problem solver needs to think about the system as a whole, its component parts and the interactions between them (Ackoff, 1974).

Trial, error, and learning: The indeterminacy of wicked problems means that any proposed solution will necessarily be flawed in some respect. Yet understanding the flaws can be a route to understanding the problem: by understanding what may work in some respects but have undesirable effects in other parts of the system, the problem solver explores the boundaries of the system itself (Courtney, 2001).

With these considerations in mind, two problem-solving approaches are described in the following sections: positive design and integrative thinking, and comments are offered on how they might have made a difference to Tata’s wicked problem.

POSITIVE DESIGN AND WICKED PROBLEMS

Since Herbert Simon (1969) called for new management curriculum based on design, several authors have argued that managers can learn a great deal from the approach taken by designers (e.g., Senge, 1990; Boland & Collopy, 2004; Dunne & Martin, 2006). *Positive design* (Avital et al., 2006) is an approach to design that emphasizes the pursuit of the possible as opposed to the known, according to a human-centered, iterative process that emphasizes appreciative thinking (focus on building strong systems) over deficit thinking (focus on correcting the weakest links in the systems). Thus Kelley and Littman (2001), describing the process at design firm IDEO, emphasizes deep understanding of users, group brainstorming and prototyping. Schön (1983) describes design as “a reflective conversation with the situation”, a fluid, iterative, active, and thoughtful process whose sequence and shape can vary according to need. To illustrate the approach, two processes from the design literature are described later.

Dorst and Cross (2001) conducted a set of “think aloud” protocol studies to identify the role of creativity in the design process. Dorst and Cross found, as have others (e.g., Christiaans, 1992; Buchanan, 1992), that framing of the problem is critical in the design process. However, the process

itself did not proceed directly from “correct” framing to an optimal solution. Instead, the designers worked simultaneously in the problem space and the solution space, using solution attempts to reframe the problem:

It seems that creative design is not a matter of first fixing the problem and then searching for a satisfactory solution concept. Creative design seems more to be a matter of developing and refining together both the formulation of a problem and ideas for a solution, with constant iteration of analysis, synthesis and evaluation processes between the two notional design ‘spaces’-problem space and solution space. (p. 11)

Dorst and Cross’ Model is shown in Fig. 1. Following the initial brief or problem statement at $P(t)$, the designers began by exploring the problem further and developing an initial frame [$P(t+1)$]. From this frame, they developed initial design concepts [$S(t+1)$], which they used to structure the solution space at $S(t+2)$ and used these to explore the dimensions of the problem further at $P(t+2)$, and so on.

Kumar (2004) provides a more detailed model of the design process, arguing that, for innovation to be effective, discipline and rigor are essential.

Kumar’s process for innovation comprises eight modes: sense intent, know people, know context, frame insights, explore concepts, make plans, realize offerings (prototype, pilot, and launch), and foster uptake. In keeping with

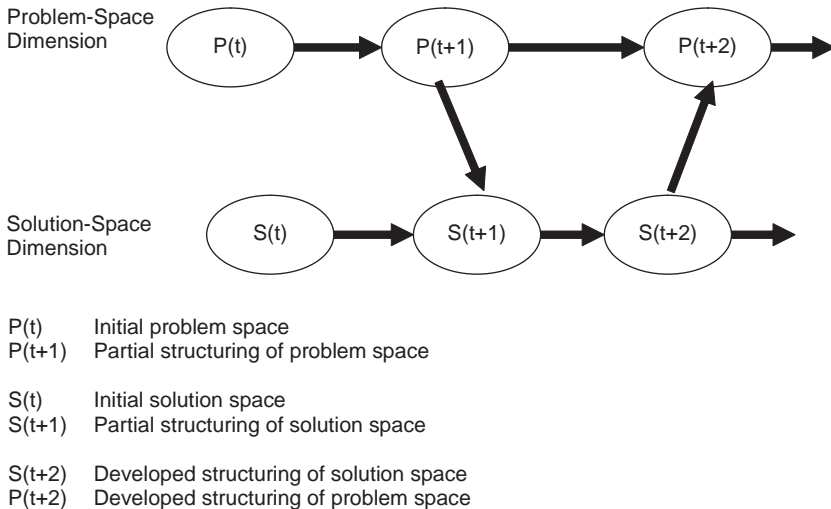


Fig. 1. The Design Process. Source: The original figure/table is by Dorst and Cross (1999) and is reproduced with kind permission of Elsevier.

Dorst and Cross' model, the process is not linear, and innovators may move from mode to mode in no particular order. Each mode is associated with a set of tools: for example, the "know people" mode incorporates collection of data through ethnographic fieldwork, and analysis through the use of models and frameworks developed for this purpose.

Kumar's process is similar to the seven-stage method described by Simon (1969): define, research, ideate, prototype, choose, implement, and learn. Simon also stresses that the steps are not necessarily sequential, but can occur simultaneously and be repeated.

The Role of Inquiry in Positive Design

For a designer, it is critical to develop a deep understanding of at least two perspectives: that of the client and that of the user (Dunne, 2010). The initial mode of communication is usually the design brief, a statement of the problem as seen from the perspective of the client. However, the design brief is often inadequate because the designer may see the problem or the solution space differently: he or she may not see all the implications the client sees, or on the other hand may see implications that are not yet apparent to the client (Cross, 1999).

To develop a deeper understanding, the designer inquires into the problem and the client's understanding of it. This may take the form of questioning techniques such as the "Five Why's," the Ladder of Inference (Argyris, 1982) or Dunne and Moldoveanu's (2009) method of using questioning to generate new models. In all cases, two key qualities are required of the designer: *empathy* with the client's perspective and the *curiosity* to dig deeply into the evidence.

The user's perspective has become central to a great deal of design since the emergence of *user-centered design* in the 1980s (Dunne, 2010). User-centered designers go to great lengths not merely to solicit users' opinions on the problem and potential solutions, but also to appreciate needs they may not even be aware of (Leonard & Rayport, 1997). Some engage users in the design process itself in *participatory design* (Asaro, 2000; Prahalad & Ramaswamy, 2004).

Surveys and focus groups often do not provide rich enough information, as the designer needs to reframe the problem in ways that cannot readily be envisaged by users (Mariampolski, 2006). For this reason, design inquiry often includes ethnographic methods such as user observation, diaries, disposable camera studies, and so on, in which behavior is observed and interpreted from critical and creative perspectives.

The designer may also attempt to understand other stakeholders who are not actual users but are affected by the design: nurses in a hospital setting, retailers in consumer goods, and so on. Since stakeholders, like users, will have idiosyncratic ways of framing problems, research methods that do not rely wholly on stakeholders' ability to frame and articulate the problem are often used.

INTEGRATIVE THINKING

Moldoveanu and Martin (2008) argue that we are in an era of "postmodern" management, in which the sociocultural landscape has changed and managers need to act, think, and experiment in ways that challenge traditional forms of reasoning. To accomplish this, he or she needs to incorporate disparate worldviews and modes of reasoning.

Successful leaders are skilled in *integrative thinking*, which Martin (2007) defines as the "ability to face constructively the tension of opposing ideas and, instead of choosing one at the expense of the other, generate a creative resolution of the tension in the form of a new idea that contains elements of the opposing ideas but is superior to each" (p. 15).

Martin bases his claim on a 15-year study of successful business leaders. In developing the integrative thinking model further, he argues that there are four stages to decision-making:

Salience: the initial decision to include or exclude specific factors in the decision;

Causality: the perceived set of relationships between the factors;

Architecture: the construction of an overall model of the situation, based on salience and causality; and

Resolution: the adoption of a final decision based on the model.

Martin argues that integrative thinkers approach these four stages differently from nonintegrative thinkers: they see more factors as salient, consider a broader range of causal factors including multidimensional and nonlinear relationships, are able to keep the entire model in mind while working on its parts, and find creative resolutions to tensions within the model's structure.

Martin also introduces the idea of "personal knowledge systems" consisting of *stance*, *tools*, and *experiences*, where stance comprises one's attitude to the world and one's role in it; tools are the methods the decision maker uses to understand and solve problems; and experiences are the

outcomes of the decision maker's thinking. Integrative thinkers' starting point is that existing models of the situation, including their own, are necessarily flawed (Sterman, 2002) and they see their task as one of seeking out better models. Martin's tools include *generative reasoning* to build new models from a synthesis of existing ones, *causal modeling* to understand the underlying relationships and the nuanced conditions under which they apply, and *assertive inquiry*, curiosity-driven analysis of opposing models.

The Role of Inquiry in Integrative Thinking

Argyris (1982) argues that a great deal of discourse in management consists of declarative statements in which interlocutors do little to explore opposing points of view, instead promoting their own. Integrative thinkers, however, explore models that oppose their own through assertive inquiry, a sincere and curious search for the views of others.

Moldoveanu and Martin (2008) contend that modern managers instead need to engage with diverse experts who have different standards of argumentation. Integration across these perspectives is a critical management function, and to accomplish it, a manager needs to be capable of understanding multiple perspectives, or models, of a situation. The integrative manager attempts to understand alternative models in depth, while proposing his/her own, in the understanding that it is necessarily incomplete.

Martin (2007) proposes *assertive inquiry* as a method of analyzing the perspective of another by seeking to understand the logic that underpins it, while stating (asserting) one's own point of view in a way that lends itself to analysis by one's counterpart:

Assertive inquiry isn't a form of challenge, but it is pointed ... Its aim is to learn about the salient data and causal maps baked into another person's model, then use the insight gained to fashion a creative resolution of the conflict between that person's model and your own. (p. 157)

THE POSITIVE DESIGN MINDSET AND INTEGRATIVE THINKING

While the positive design and integrative thinking models are based on similar principles, they have differences of approach and emphasis. In this section, the mindset of designers – their cognition, attitude, and practice – is

described, and comments are provided on how it compares with integrative thinking.

Semistructured interviews were conducted with designers, design educators, and design consultants in the USA and Canada. Respondents were questioned about their approach to design and what made designers distinctive. Respondents were encouraged to develop their own themes and later interviews probed themes that had emerged in earlier sessions. Transcripts were analyzed for recurring themes and developed into a model of the design approach to problems as shown in Fig. 2.

Designers seek outcomes that are *desirable* for users, *viable* for the client and *feasible* within technical and design constraints. To accomplish this,

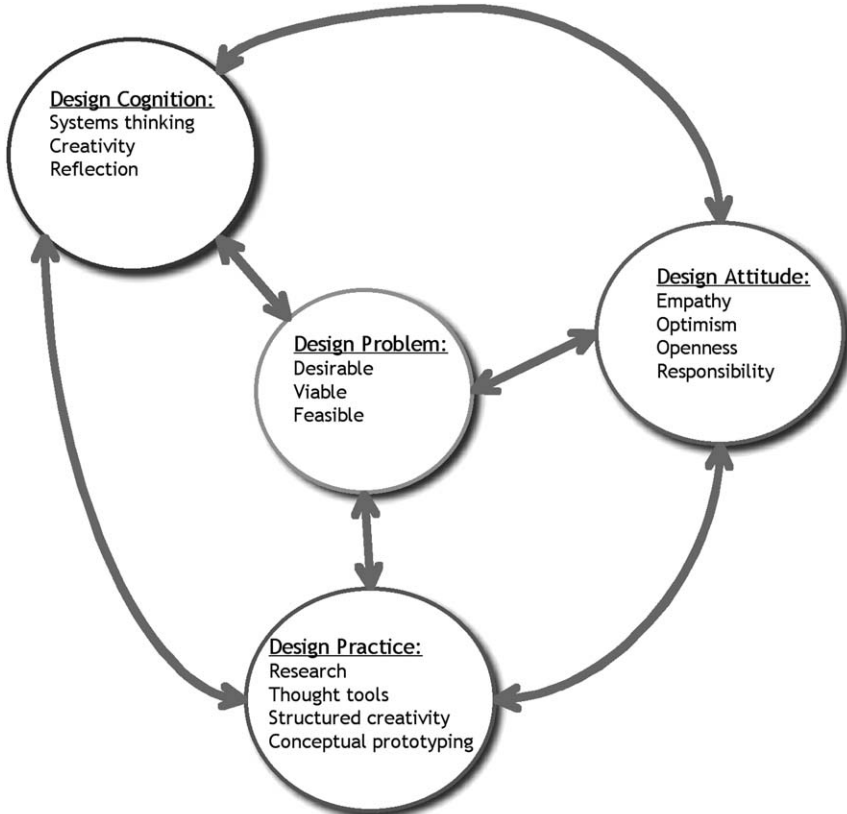


Fig. 2. The Design Mindset.

they attempt to understand the context surrounding the design problem from various perspectives; they think in certain ways (cognitive aspects), have certain attitudes, and have various practices that help this process.

Cognitive aspects include systems thinking, creativity, and reflection. *Systems thinking* means taking a broader view by looking at the problem in its context (Forrester, 1994). One designer saw the system from two perspectives: that of the company's value chain and that of the customer:

What if I looked at [the system] from the customer's point of view: what's the customer's system? Where does this fit into his or her total culinary arsenal or where does it fit into his or her life? That's a whole different can of soup [from the value chain]. (Designer, Personal Communication, September 2006)

User research is not an explicit element of the integrative thinking approach, yet it is consistent with its emphasis on inquiry into the models of others. In positive design, observation plays a strong role, dating from the user-centered design movement of the 1980s (Dunne, 2010).

Creativity is commonly associated with design; yet, as the comments of one design educator suggest, ideas do not come out of thin air but are the result of the application of structures and tools:

One common way of thinking of creativity and imagination is that it's free play and unstructured. I think it can be dramatically enhanced by structure – for example, by consciously looking at things from different points of view. (Design Educator, Personal Communication, June 2006)

In integrative thinking as in design, existing models are the source of new ideas: integrative thinkers deeply investigate alternative models and, through generative reasoning, build models that are stronger than existing ones.

Beyond the ability to think broadly about systems, a requirement of the design process is *reflection* on the problem while postponing closure on a final frame. Dorst and Cross' (2001) description of the process of redefining the problem while attempting to solve it echoes Donald Schön's (1983) description of "reflection-in-action" in which the practitioner employs action as a form of thinking.

In particular, the purpose of reflection is to take into account multiple perspectives from within the organization as well as that of the market and the user. As one designer put it:

We frequently use a phrase called "re-framing" the problem ... there is an opportunity for organizations to create things that are more meaningful to people's lives if they reframe the problem without throwing out the frameworks of production, market segmentation and channels of delivery, but add a dimension to do with the [customer's] experience of daily life. (Design Educator, Personal Communication, June 2006)

In designing the Acela train, for example, design firm IDEO took a broader view of the user's experience that had been envisaged by the client: the design project was expanded to take account of all stages of the passenger's journey from making a reservation to arriving at the final destination (Corporate Design Foundation @Issue, 2009).

Both designers and integrative thinkers reframe by inquiring about other models and through reflection. Integrative thinkers use the tools of assertive inquiry and causal modeling to understand the underlying logic behind others' models and compare it with their own. User-centered designers attempt to develop a deep understanding of users, both through open inquiry with the client and users, and through ethnographic research. Design, however, relies more on trial and error than integrative thinking; designers reframe the problem through successive solution attempts and reflection on the results.

Attitudinal aspects are the set of attitudes the problem solver brings to the task: empathy, optimism, openness, and responsibility. Designers need to have *empathy* to appreciate how a design problem appears from users' perspective. The other three qualities of design attitude were described by one designer as follows:

It's a way of approaching problems in the world that begins from a point of optimism, that there is a solution, and it's a matter of us reaching it. It builds on that with this idea of "mind of a child", this ability to be open to whatever the world is going to tell you; and coupling that with an attitude of wisdom, being able to recognize evidence for what it is and acting upon it. (Designer, Personal Communication, September 2006)

Optimism, the belief that the design team will arrive at a solution, is essential so that the team can be open to new, different ideas: if the team knows that the problem will ultimately be solved, it can remain open to suggestions that might otherwise be dismissed too early. While optimism and openness allow the design team to develop radical new ideas, *responsibility*, or wisdom, focuses the team on the available evidence.

In the integrative thinking approach, the concept of *stance* encompasses the decision maker's attitude to the world, that existing models are imperfect and can be improved upon; and to oneself, that one is capable of finding a better model (Martin, 2007). In assertive inquiry, the integrative thinker openly explores alternative models.

Practical aspects are the tools designers use to help solve problems: *research* such as ethnographic methods that allow them to observe users as they interact with products, services, and experiences; *thought tools* that help cluster ideas and structure thinking¹; *structured creativity*, a set of methods

to develop original solutions; and *conceptual prototyping*, developing models of potential solutions early, repeatedly, and rapidly.

Conceptual prototypes are distinguished from traditional manufacturing prototypes: these are developed late in the design process and are intended as highly finished mock-ups of the final product for testing in plants or research. For designers, conceptual prototypes have an entirely different purpose, as a means of exploring the problem through physical or virtual media:

What we call “building to think” is making stuff in order to reiterate your ideas. Whether you make them two dimensional or three dimensional, or make them in virtual space, it’s all the same thing; but it’s about this very rapid iteration that goes on when you create something tangible, then you can evaluate it and move on. When designers are working at the beginning of the process they’re doing that incredibly quickly. (Designer, Personal Communication, September 2006)

Interviewees characterized the design process as rapid, physical and engaged. While inquiry had its place, it was twinned with physical exploration and speculation:

[Design includes] this ability to actually build things, or make things real, as a way to figure out how things work, or just to create evidence to feed into the process. That’s why design thinking at some point translates into action. It’s a way to feed the thinking process. (Designer, Personal Communication, September 2006)

It is on this last aspect, trial and error through prototyping, that the difference between integrative thinking and positive design seems most apparent: the former has been characterized in the literature as a cognitive process, while interviews with designers and the design literature suggest a much bigger role for physical engagement.

In summary, while there is a great deal of common ground between positive design and integrative thinking, the two approaches are different in character. Where integrative thinkers use assertive inquiry and causal modeling to understand the models of others, positive designers work by questioning and observing users, and using trial solutions to reframe the problem.

OVERVIEW AND CONCLUSION

A sustainable enterprise is one that delivers the “triple bottom line” of economic, social, and environmental benefits (Hart & Milstein, 2003). While delivering the single bottom line of shareholder value is by no means a

simple task, delivering a triple bottom line is infinitely more complex. As wicked problems, issues of sustainable value evade clear formulation and involve multiple perspectives – sometimes, as in the case of the Nano, in an atmosphere of high drama.

In emphasizing appreciative thinking over deficit thinking, positive design demands that the designer avoid the tendency to “tame” the problem by selecting only its best-defined parts, but instead must think broadly and openly about the system as a whole with the needs of users foremost in mind. It demands collaboration within and across organizations, and as a result requires the ability, empathy, and curiosity to appreciate the perspectives of others.

The major tool of inquiry about the models of users is ethnographic research (Dunne, 2010). In addition, designers use experimentation to reframe the problem space and test solutions. In the case of integrative thinking, the techniques of causal modeling, assertive inquiry, and generative reasoning are used to understand the perspectives of others.

Returning to the criteria given in the section “Dealing with Wicked Problems” of this chapter, positive design and integrative thinking are both capable of dealing with wicked problems. Both use empathy: in the case of design, for the client and for users (Leonard & Rayport, 1997); in the case of integrative thinking, for those who hold opposing models to one’s own (Martin, 2007). Both are amenable to multiple data forms: designers regularly use both qualitative and quantitative research, while integrative thinkers seek to understand alternative models in any data form. Both employ deductive, inductive, and abductive reasoning and are open to other types of reasoning (Moldoveanu & Martin, 2008; Cross, 2001).

Suspension of closure is achieved in design through the establishment of an initial, temporary frame, and successive attempts to reframe the problem; since integrative thinkers actively seek opposing models, they must also resist an excessively tight problem frame at the outset. Designers take account of system effects for both the client’s value chain and the user’s context; integrative thinkers, in modeling causality in broad terms, take account of system effects, and while inquiry into users’ models is not an explicit element of the process, neither is it excluded.

Interviewees and the design literature distinguish design by its quality of trial, error, and learning, which is an explicit element of the process through conceptual prototyping and reframing. Double-loop learning is fundamental to integrative thinking and is similar in concept to transformative reasoning, reasoning that is grounded into inquiry into how things work.

However, the physical aspect of learning through prototyping is more strongly emphasized in design than in integrative thinking.

Returning to the Tata Nano, a positive designer might have sought to understand farmers and other stakeholders, not merely by talking to them, but through observation as a “participant–observer” to gain a deep appreciation of the context of their lives. The designer would have sought some insight that could yield a product, service, experience, or strategy that satisfied both Tata and the affected farmers. The designer would work in a nonlinear fashion, rapidly moving from problem to potential solution and back again, redefining the problem as she or he went along. Throughout the process, the designer would have developed small-scale trial solutions, prototypes that helped reveal new aspects of the issue.

Through assertive inquiry and causal modeling, an integrative thinker would have sought to understand the mental models of the various stakeholders: farmers, customers, environmentalists, politicians, etc. The integrative thinker would have proposed his/her model of the problem, but would have regarded it as one of several possible interpretations. By developing a deep understanding of different models and applying generative reasoning, a superior model would have been developed.

Either design or integrative thinking would have stood a good chance of coming up with a better solution to Tata’s problem. In their 1999 commentary in *Nature*, “How to restore public trust in science,” Greenpeace’s Benny Haerlin and Doug Parr state that “the relationship between the scientific community and the general public has never been worse in living memory.” They comment further as follows:

Instead of rethinking their research and development strategies and looking at the alternatives, most companies and governments still treat public acceptance as just another challenge to be overcome ... they are out of touch with the values of society, and that cannot be overcome by means of any scientific risk assessment.

Both integrative thinking and design emphasize consultation as opposed to persuasion; inquiry as opposed to imposition; and creativity as opposed to linear thinking. Had either approach been applied early in the process, passions might not have risen so high, and the crisis might have been defused before it began.

Tata’s wicked plant location problem embodies many of the challenges of sustainable value, its multifaceted and difficult nature and its place in broader economic and social systems. Solving such problems requires a deep understanding of all stakeholders’ mental models, and creative thinking

about satisfactory solutions. In different ways, both integrative thinking and positive design can offer a way forward.

NOTE

1. The Institute of Design at the Illinois Institute of Technology boasts over 100 such tools.

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SUSTAINABILITY AND ORGANIZATIONAL CHANGE: EMPLOYEES' PERSPECTIVE ON THE CASE OF STREAMLINE MANUFACTURING

Hilary Bradbury-Huang

ABSTRACT

This case is based on 30 interviews with participants in a seven-year sustainability project at a leading North American manufacturer. The project enhanced financial value and positively impacted the natural and organizational environments. The case draws attention to innovative methods to increase non-executive employee engagement in technical innovation for sustainability. In particular, many interviewees noted how eco-action learning had motivated them to persevere. However, their intense commitment also exacted a cost, most significantly in time away from family. The process by which these results were achieved is discussed as an example of "appreciative intelligence" to suggest how leaders and employees can reframe business, connect elevated personal purpose to day-to-day business tasks, and consequently create a more sustainable future.

Positive Design and Appreciative Construction: From Sustainable Development to Sustainable Value

Advances in Appreciative Inquiry, Volume 3, 215–235

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003016

“Before I started on the Streamline project I had been saying to my husband, “I went to school to do *this*, make these stinking machines.” It felt like a big let down from when I was starting out after college and had so wanted to make a great contribution to the world. But then once on Streamline there was a shift for me, not just on a work but on a personal level. I finally came to a conclusion about what I could do to make a difference here. I would have an impact on industry standards and on the world my kids would inherit. I began to feel very committed, responsible, engaged.” (Engineer, Streamline Project)

That is how an employee of one of North America’s brand name manufacturing corporations described her experience on the seven-year project that reset industry standards for both technology and sustainability. While to date more attention has been paid to the technical breakthroughs from sustainability efforts, the sociotechnical focus (Pasmore, 1988) of this case aims to rebalance attention by examining social and organizational conditions that can nurture those technical innovations. Positive employee engagement, cultivated through positive cognition and emotions, appears as a causal force that provides for sustainable, i.e., financial, social, and environmental, benefit.

The case highlights the central role of non-executive employees in creating successful sustainability efforts. I discuss the process they experienced on Streamline as an example of “appreciative intelligence” (Thatchenkery & Metzker, 2006), a concept that explains how, as leaders and employees succeed in reframing business as usual, they are enabled to see opportunities for innovation.

The chapter proceeds by providing organizational context for the case, followed by a review of the link between positive organizational change and sustainability efforts. Then interview data from a cross sample of employees are presented. A process model is offered to highlight the reinforcing dynamic of employee engagement and sustainable organizational and environmental results – i.e., appreciative intelligence at work. The chapter closes with a discussion that includes practical application of findings regarding the critical role of pro-social activity in sustainable development efforts.

THE STREAMLINE PROJECT

In the 1990s, a brand name office machine company authorized a “cleansheet”¹ effort to develop their first digital platform. The new “Streamline” products were to be “zero-to-landfill,” meaning that neither machines nor support systems, such as service, would generate waste.

Project specifications also required that the machines could be remanufactured “as new.”

The Streamline project was successful by many measures. By 2000, the new platform had realized \$3.7 billion in profit, with a \$13 billion revenue stream demonstrating an internal rate of return of 22%. The machine is capable of 99% recyclability and 95% remanufacturability. The remanufacturing alone had resulted in \$3 billion in revenue, turning in around an 80% profit margin. At the time of writing, 150 of these sophisticated, expensive machines are built daily retaining highly paid, highly skilled jobs in the United States. Between 20% and 25% of corporate revenue is generated through Streamline. The new platform has also won national and international environmental awards.

SUSTAINABILITY AND ORGANIZATIONAL CHANGE

Change toward Sustainability

The term “sustainability” is often used as shorthand for a broader business mandate that integrates concerns for financial, environmental, and social well-being.² Whether labeled as green environmentalism, social justice, corporate social responsibility, or sustainability, corporate leaders are feeling pressure to address social and environmental concerns along with financial performance (Holliday, 2001; Livesey & Kearins, 2002; Luke, 2001). Some seek ways to avoid change by meeting external pressures with symbolic gestures. Others are finding opportunities to create new institutional forms that reflect deeply held values while simultaneously serving their shareholders.

Certainly, the imperatives for the latter response are compelling in the face of troubling scientific reports about the unsustainable state of our environment and economy. For example, scientific consensus finds that major life systems are in decline (WRI, Vital Signs, 2008) and there are strong warnings from the union of concern scientists about global warming in particular (cf., <http://www.ucsusa.org>).

At the same time, economic dynamics, such as emphasis on quarterly returns, may impede long-range change. The broader business mandate, with its multiple foci on ethics, environmental concern, safety, and community investment (Hart & Milstein, 2003; Paine, 2003; Shrivastava, 1995; Shrivastava & Hart, 1992, 1995) makes attending to this new mandate more complex than the traditional tasks of running a business; moreover,

it is beyond the training and experience of most business leaders (Paine, 2003).

Although Gallup polls suggest that a majority of citizens, both national and international, are concerned about environmental issues that are understood to portend significant impact on our lives, yet educators in the field of sustainability (e.g., Macy & Brown, 1998) find that people can become overwhelmed and paralyzed by information about the negative impact of human activity on natural systems. The emotional stress that the information brings may therefore inhibit the very innovation, sense of ownership, and experience of elevation that could be conducive to meeting the complex challenges of creating more sustainable business products and processes.

A sustainable business operates in harmony with nature's processes, so that it meets present needs without hindering future generations' opportunities to meet their needs (WCED Brundtland Report, 1987).³

Positive Organizational Change

Maslow and other psychologists of the 1960s characterized the dominant assumptions at the foundation of then current psychology as "deficit" assumptions, meaning they highlighted what was wrong rather than what was right. Taking the opposite approach, they created a field of psychology that focuses primarily on positive emotions and states such as love, generosity, generativity, the so-called higher human capacities. Cooperrider and Srivastva (1988) and Cooperrider (1999) similarly noted the preponderance of deficit assumptions in the field of organizational change and introduced a more "appreciative" stance to the practice and scholarship of organizational development.

A more recent stream of positive organizational scholarship enjoined adherents with the publication of a special issue of *American Behavioral Scientist* in 2004. Cameron and Caza (2004) clarify that positive organizational scholarship is a new focus rather than a new phenomenon; that it is concerned with understanding the integration of positive and negative, and not simply the absence of the negative.

In the field of empirical psychology, Frederickson's (1998, 2000) and Frederickson and Joiner's (2002) studies indicate that positive emotions build resilience and broaden cognitive repertoires. Referred to as the "build and broaden theory of positive emotions," the work vividly describes the link between positive emotions, such as love, and desired outcomes, such as

higher capacity for learning. Individuals who are experiencing positive emotions are more capable of action aimed at benefiting the whole, not just limited individual interests; such pro-social action is also a form of enlightened self-interest. Looking to organizational life, we see many instances of this; e.g., Kahn (1993), studying caretaking in organizations, noted that study participants who reported feeling affirmed were more capable of affirming others. The flipside is also true; Kanov et al. (2004) have pointed out the great social costs of stress, as has Frost's (2003) study of toxicity at work. Positivity, which was found to characterize many of the Streamline interviewees, is therefore beneficial both to individuals and to the larger contexts they influence, including, most importantly, their organizational life.

Appreciative intelligence links individual level positivity with organizational processes; it describes the ability to perceive positive generative potential within the present. It describes how people use new or challenging circumstances, such as in the Streamline project, to create technological breakthroughs as a result of turning the challenges into opportunities and enriching experiences. Thatchenkery and Metzker (2006) describe three components of appreciative intelligence: (1) reframing, (2) seeing the positive, and (3) imagining the future unfolding from the present. Their work helps conceptualize processes of change over time, which create a positive future anchored in the present.

Focus of inquiry. Social conditions that foster technical innovation include (1) positive sense-giving by leaders/role models; (2) employees' elevated meaning-making about the significance of their work; and (3) organizational management of positivity for competitive advantage.

FIELD STUDY METHODS

The interview was aimed at eliciting narratives from interviewees about their experience of engagement. Specific narrative prompts were prepared (see the appendix for the questions).

Interview Protocol Development

Reasoning that asking directly about positive aspects and emotions would focus attention on the interviewer's rather than the interviewees' concerns,

a more neutral approach was adopted. The interview protocol asked people to speak about their involvement generally with the project.

Archive, Time line, and Interview Roster

After gaining permission to do the study from the chief engineer of Streamline, I spent two days with a graduate assistant reading the voluminous project archive. Detailed memos helped us see how the project had unfolded. We developed a list of all people hired as the project team expanded beyond the original “blue ribbon” team around the chief engineer to, eventually, around 300 people. We also transcribed a handful of videos created for internal marketing, which showed the way the project had been presented. The chief engineer was a voluble commentator upon all we found. Together, we created a time line on flipcharts that described the project in terms of significant events and people.

Semistructured Interviews

Because the project was a “cleansheet,” half of our interviewees were invited from the upper ranks, with the reasoning that these people designed conditions that the others joined as well as the new technology itself. The other half of the interviewees came from the rest of the names, down through clerks. We selected interviewees who had stayed with Streamline through the project’s end so as to be ensured a rich picture of the project through time.

All interviews, which averaged 100 min, occurred in a company meeting room decorated with the reader-friendly time line we had created and pinned around the walls. After rapport building, the interviewee was asked to silently read over the time line and to add anything using post-it notes. All interviewees agreed that it was sufficiently correct and comprehensive.

Following Isabella (1990), the interviewees were asked to reflect separately on different stages of the project. Likert scales were used to assess engagement on a scale of 1–4 at the closing questions about each phase of the project (i.e., early, middle, and later) ending with questions about the entire experience.

Analysis began with 40 transcripts, each around 70 pages (i.e., 30 interviewees plus 10 transcripts of official interviews for TV and articles written from the archive). The average degree of engagement, using a

four-point scale, was 3.62 in the early stages and 3.48 at the finishing stages of the seven-year project.

- $N = 17$: Those who described themselves as deeply engaged (4 out of maximum 4 at both early and late stages)
- $N = 6$: Those who described themselves simply as engaged (3 out of 4).
- $N = 4$: Those who were only slightly or not at all engaged (1, 2 out of 4).

Six interviewees reported change over time: Two indicated an increase in their engagement and four a decrease. A large majority, however, used the same number to describe their level of engagement during all phases of the project.

Grounded Analysis

Wishing to understand the process that lay behind the high and sustained levels of engagement, I undertook a grounded analysis of the transcripts following the suggestions of Locke (2001) for inducing grounded theory (Glaser & Strauss, 1967).

I refined broad categories to capture and name the process. The categories were assigned a color for highlighting on computer using ATLAS© qualitative coding software. A brief explanation and illustrative indicators from the interviews explained them so that two research assistants could additionally code the interviews, allowing for a speedy comparison and clarity. The categories subsequently fit into three agreed superordinate categories and were labeled as follows:

- *Distributing leadership*: Leadership-oriented thought and action that goes beyond administrative authority.
- *Elevating meaning-making*: Development of new ways of thinking about one's work that allows for increased contribution to the goals of the project.
- *Pro-social activity*: Sense of self as growing increasingly capable of caring for more than her/his immediate, conventional concerns.

Data are summarized in a table and included in Table 1. In it, the interviewee's self-reported engagement level at earlier (T_1) and later times (T_2) of the project are reported.

Table 1. Self Reported Engagement Scores for Early (T_1) and Later (T_2) Phases of the Project.

Interviewee	Engagement (T_1)	Engagement (T_2)
040	4	4
039	4	4
038	4	4
037	4	4
036	3	4
035	4	2
034	4	3
033	4	4
032	3	3
031	2	4
030	3	3
022	3.5	3.5
021	3	3
020	4	4
019	4	4
018	4	2
017	4	4
016	4	4
015	3	3
011	4	4
010	4	4
009	2	4
008	4	4
007	4	4
006	4	4
005	4	3.5
004	4	4
003	2	1
002	4	4
001	4	4

DISTRIBUTING LEADERSHIP

Interviewees explained that they learned how to act as leaders by following the lead of those above them; in effect, they were “distributing leadership” among project participants. The phrase describes leadership efforts that include all involved, rather than the smaller number of those with administrative responsibility (Fletcher & Kaeufer, 2001).

Employees did not simply mimic their boss; instead, they endeavored to act as good managers of themselves and others in their self-managed team environment. Interviewees used the terms “empowerment” and “feeling empowered” in explaining how they enacted leadership behaviors such as decision-making and coordination with others.

The practice of distributing leadership was originally modeled and engaged in by the chief engineer. Early on he felt overworked and sought to delegate. His self-described “empowerment” of employees came, reportedly, as a necessity given the resource constraints. As he more consciously considered his leadership style (in response to his own superior’s invitations to leadership development seminars), he enacted the philosophy and behaviors of his own boss. That boss, himself responsible for 70,000 employees, had suggested that his subordinates delegate, as he did, thereby establishing a form of top-down empowerment.

When speaking of distributed leadership, interviewees referred to themselves as leaders, regardless of position, showing active engagement with the challenge of the project:

“Well there were the obvious leaders, [the chief engineer] of course, and a handful around him, but, I consider myself a leader too.” Levels of distributed leadership among the engaged and highly engaged (reporting 3 or 4 on the Likert scale) were higher than among those who reported less engagement (reporting 1 or 2 on the Likert scale) and who, when asked a number of open-ended questions about leadership throughout the interview, referred only to those at the hierarchical top. Less engaged people also reported feeling “drafted” (as opposed to choosing to join the project) and seeing little challenge in their work, in spite of what one might call objective indicators of the project’s uniqueness as measured by the amount of money allocated to it and the visible support of the most senior executives. Their experiences were of being in an “out group,” a status they passively accepted. They also reported relatively more negative experiences with the chief engineer, Jake:

If Jake wasn’t there Streamline would never have happened. And I think intellectually, there’s no comparison ... But when he’s directing people, he’s making them put their job on the line. He’d yell at me and never came back to change that.

The less engaged therefore differ from the more engaged in that they did not, themselves, become agents of distributed leadership; they experienced themselves as acted upon by authority figures they did not much like.

ELEVATED MEANING-MAKING IN ACTION LEARNING

The chief engineer had been inspired by his environmentalist daughter to offer a voluntary vision quest opportunity to all on the project. Loosely based on practices by some native American tribes, this “vision quest” offered questers the opportunity to go to a secluded wilderness area and spend at least 24 h alone, carrying with them only water and a personal journal to a secluded spot. Afterwards the questers returned to the group where all shared their experiences.

The chief engineer knew that organizing his staff for the vision quest was controversial both because the budget was so tight and because to many he was offering an experience that was, as interviewees expressed, “downright weird” and most notably so in the context of an otherwise straight-laced organization. The majority of the questers, however, had a memorable and even transformative experience of this new employee training. These interviewees described their work life as divided into a *before* the training and *after*. The training empowered them to better imagine how personal priorities could inform their professional work.

The vision quest was voluntary. Overall, two-thirds chose to go, a similar percentage as in my interview sample. Employees ($N = 17$) who did the quest reported a shift in their deepening engagement with the project as a movement from experiencing themselves as outer directed to experiencing their inner voice. With two exceptions, they reported hearing their own voice in an area where “distractions” were elemental had been a powerful experience. A marketing manager remarked:

I had simply never been alone a whole 24 hours like that, ever. You start hearing your inner voice which you don't hear when you're totally wrapped in everything, consumed and bombarded by stimulation. By about 5 in the morning I was writing like crazy in my journal, it was all so clear about some things that I personally had. That was the most refreshing experience. Perhaps secondary to the purpose they sent us.

Interviewees reported being “reawakened,” “rebalanced,” “released,” “refreshed.” In addition to the effects of personal release, teambuilding and environmental consciousness raising were also reported as effects:

It was a unique experience. I don't know what to say. My mother said I was way more relaxed when I got home. I really bonded with people I would never have spent time with. Some of us, we found a dying bird there and we tried to save it, but the poor bird died. So our last act was to bury our little feathered friend. We still have lunch, me and these five (senior) guys I met there with the bird.

A senior engineer who was in his fifties when he went described the profound change that permeated his life in small and major ways since:

I went on the vision quest very left brained and came out right brained. ... It's because I looked at me and saw how much of the world I had been missing with my logical engineer mind ...

Two of the twenty-two interviewees who went on the vision quest did not find it to be a particularly positive experience. One said that he found not eating for 24h very difficult and thought consuming, and the other found himself only engaged by the lecture portion on environmental issues.

The majority positivity contrasts most sharply with the view of one employee whose engagement was low. While others declined to go for various reasons (from being too busy on the project to not wanting to use precious personal time away from family) he declined from cynicism:

That vision quest stuff was a bunch of crap. If you [to the interviewer] are so impressionable like the ones who went on it, you'll believe it made a big difference. [The trainers] were a bunch of old hippies who made a lot of money.

Teams Reinforced the Personal

There was almost unanimity both among those who went and those who did not that the vision quest positively impacted team members' capacity to work well together. The quest group explained that they formed "an oasis" for each other upon return, so they could revitalize the transformative experience when back in the ordinary world of design and manufacturing. The oasis grew over the early years when as many as two-thirds had attended:

People rallied together, the ones who shared your excitement. But I think people just had to realize that nothing was going to change overnight and that they had a responsibility to do something. It wasn't just going to happen.

Some practices from the vision quest were used at project headquarters to keep the spirit alive. An important one was the use of a "talking stick" during team meetings, which promoted more listening and less of the mainstream culture's telling, arguing, and grandstanding. Having others listening more was widely recalled as significant.

On all vision quest trips, participants received environmental education that included visiting a landfill. On the first trip, involving the small band of managers closest to the chief engineer, a reportedly serendipitous event

occurred: A machine from the previous major project line was sitting in the pile of trash (one of the disengaged claims it was intentionally placed). This led to the team coining the aspirational slogan “zero-to-landfill.” This motto was later revised to “zero-to-landfill – for the sake of our children.” The chief engineer stated that he had not been an instigator of the slogan making: “[I] needed people to get on board the environmental cause of their own accord, or it would never happen.” The chief engineer’s boss explained this further: “Employees have got to internalize environmental leadership, it’s got to be in the bones, you can’t legislate it. People have to feel it and know they want it.”

Most who went on the quest got on board and came to feel the imperative of Streamline in their bones often with a view that the project was a “win–win.” One summarized many coworkers’ sentiments: “I realized that Streamline would be good for people, the culture and for nature.”

The vision quest also helped support those with the unenviable task of explaining the radical redesign to suppliers, internal and external, all of whom were used to a more traditional, environmentally polluting process. One interviewee recalled internal suppliers (inside the company but outside the specific project) who simply laughed at the notion of zero-waste and replied to the request for new supplies with “yea, right, beam me up Scotty.” But the questers had their eco-learning to support their changed views:

The thing that I really learned on Streamline is the interdependency with the environment. You sit in a riparian zone, near the edge where water comes to land, and that’s probably the most active animal, plant zone right there within that one meter. And just to watch what goes on there where you’ve got the frogs sitting there depending upon the insects for food, and then you have the blue heron come along and eat the frog. And it’s all the interdependency of those plants and animals. Total interdependence for their survival. That also means us, our interdependence for our survival.

Those who were highly engaged, in contrast to those who were not, had a greater capacity for using their understanding of others to market the sustainability concept. They extended themselves to others, often out of a pragmatic concern with building “buy-in” beyond the Streamline project. As one person (named frequently by others as a leader, though he did not have such an official status) explained:

You don’t approach those hard core middle engineer types with stuff about sustainability principles, you tell them about driving down unit manufacturing price. You don’t approach a party animal and tell him that this machine is great because it’s zero to landfill. No you tell him about the great team work.

Many engaged participants noted changes in their personal behavior, everything from recycling and bringing their kids to the woods to learn about nature, to being able to make sometimes tough decisions on the project to stick with the goal of “zero-to-landfill.” One man explained that he had given up eating red meat and drinking coffee, both of which were staples of his previous quest diet, and the absence of which was a daily reminder of what was important to him. Another explained that his friends have gotten used to his new “peculiar” ways:

There is always a tailgate, always beers in the cooler. With beer comes ice. And rather than do what everyone else does, and what I had done prior to Streamline – dump the water onto the parking lot – I take the cooler and dump the water on plants that are growing nearby. The little things that are not so little, come automatic ever since.

In contrast, when asked about how they talked up the project outside the team, the less engaged responded that they rarely talked about it.

PRO-SOCIAL ACTIVITY

The combination of taking an active role in distributed leadership, along with the opportunity to clarify how one wanted to offer a personal contribution to the project, gave rise to *pro-social activity*. This term identifies how individuals’ self-interest intersects wider concerns for others, not just those nearer, such as team mates and other organizational members, but also future generations or nature itself. Confusing the issue of what is self some described nature both as outside but also deeply a part of themselves. Growing out of the roots of engagement that lay in the experience of *reawakening* after the vision quest, a sense of self as connected to a larger world perhaps began with the increased concern for others on one’s team. This concern included many project team members, both questers and nonquesters, over time, reframing personal sacrifice as worthwhile and developing a consciousness about environmental issues. Interviewees explained that the richness of interpersonal relationships that evolved is helpful for making work and broader personal life seem less in conflict.

Designing in the Environmental Concerns

All interviewees agreed that sustainability objectives remained central throughout the project. On the whole ($N = 27$), the feeling was strong that the sustainability objectives were a good idea because sustainability was

more than just about the environment. In fact, concern for sustainability was a driver of employee engagement. The importance of sustainability objectives was always clear, for they were designed into all product and process specifications:

The environmental stuff is all over the specs, and the ability to make money at it. It's throughout design specs because it relates to the equation I put together based on environmentally friendly indices. We have environmentally friendly indices and you can change the weighting factors. See the recyclability of this little [machine] you can use at home are different from than the big machine like I am working on now. That's where you can do remanufacturing. That little one you must dispose of, recyclability is more important and so I must change the factors and look at the material choices because different material choices are needed.

Shadowside: Personal Sacrifice

The positivity was not without sacrifice, what we might term a downside. Male engineers used the metaphor of the project as “seeing a child grow up,” e.g., “the greatest thing was seeing the product go from a bunch of designs on paper to something real. It was like seeing a child grow up.” (The few women engineers, on the other hand, did not use this metaphor.) There was poignancy for some as they talked with the interviewer. Because the project had lasted almost 8 years, and involved voluntary long work hours some men reported missing the experience of their actual children growing. But all in this group who were highly engaged believed they had made the right decision and would do so again. Many reported working without overtime and losing vacations. The extremity of this interviewee's experience is unique; however, his theme of no regrets was entirely common:

Streamline caused my divorce. My wife divorced me and said it was because of the time I spent here. Now that I am off the project she has remarried me. I got my family back [... and] yes, I would do it again. [Interviewer: Really?!] Yes, I would, but I would come in at 3 a.m., and not take the time away from my family like I did. Yes, it was worth the time I devoted to it. I could say because I met my objectives, but it's really about self-satisfaction. My take is you don't work for anybody but yourself. I don't care if somebody else is paying you or not.

Surprising as these views may seem, they point to the power of organizational experience to override what might be seen as self-interest and, therefore, to the role of organizations in managing, cultivating, and reinforcing project positive emotional appeal. Indeed, for some one effect of Streamline was to reduce a perceived split between life and work:

I sacrificed a lot of family time, but in a funny way I am better now as a family man, more there when I am there. Before I was burned out going home, on Streamline I was awake and alive.

DISCUSSION

The above-presented themes exhibit several dynamic aspects. The chief engineer reframed the challenge of unsustainable practices as an opportunity to reposition the company for a new era in which internet technology could be harnessed to the demand for reducing environmental footprints. He believed this reframed mission necessitated a “cleansheet” or breakthrough technology project.

Given resource constraints, distributed leadership became the norm. Indeed, distributed leadership is an element of more general transformational leadership (Ashkanasy & Tse, 2000).

Our respondents reflected respect for and increasing identification with the project, which Albert, Ashforth, and Dutton (2000) suggest is an important element in employees’ psychological needs. For many, the vision quest helped them connect their work with a broader mission and moral purpose. Their experience allowed them to experientially locate the array of identities that were important for conceptualizing their work (Kahn, 1992; Whetten & Godfrey, 1998); these included the roles of parent, team mate, employee, and part of the natural environment. This location of a broader self and its application to the work ignited a *dynamic of personal renewal* that day-to-day membership in self-managed teams with others who had similar experience reinforced. Motivated by the principles that they came to believe were important (but would not have articulated without the experience of personal renewal), they implemented a new, technically robust design that both reset industry standards and allowed them to feel they made positive contributions to all the stakeholders they held dear, including their children.

Isolating core variables in this dynamic led to Fig. 1. The “+” in the diagram means that one variable causes the next. The “R” at the center implies a reinforcing dynamic. Fig. 1 then depicts the dynamics by which a sense of positive engagement brought about a reinforcing dynamic that brought tangible benefit to employees, organization, customers, and the natural environment.

To read the figure note that the leader offers a vision for a new product architecture that makes business sense. Employees – invited and self-selecting – accept this as a challenge and flesh it out as “zero-to-landfill for the sake of our children.” Through the dynamics of distributed leadership, employees have opportunities to make personally meaningful contributions to product design and manufacturing. Following the self-reflection afforded by the off-site training, employees understand how their contribution can be personally meaningful, so that the work is positioned not just as a business

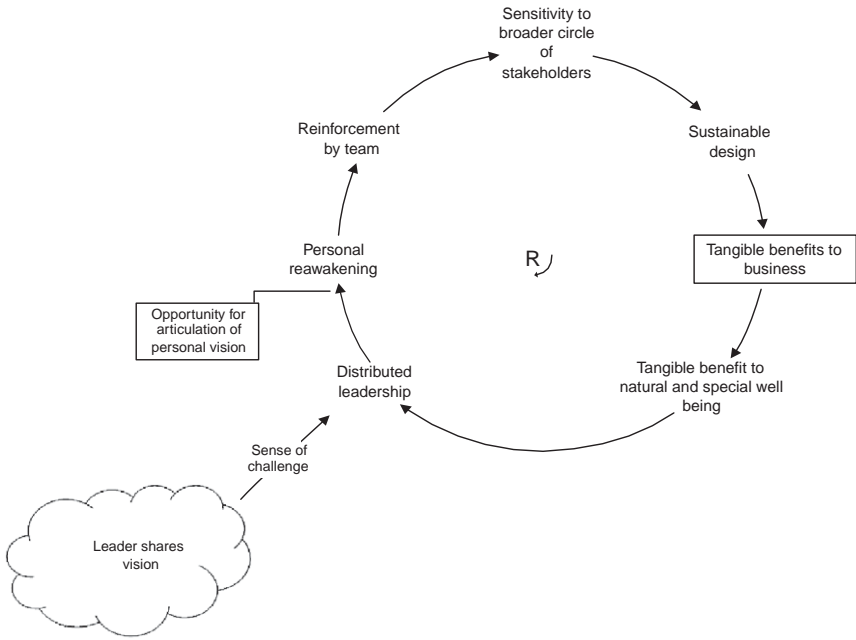


Fig. 1. Dynamics of Sustained Renewal.

case, but as a vehicle for the manifestation of these multiple, and in time aligned, aspirations. The alignment occurs through highlighting the pro-social aspects among those who self-select in. The organizational structure of self-managed teams allows for personal aspirations to be shared and reinforced by team mates, creating an “oasis” of support that nurtures engagement. A broader sense of contribution emerges, so that employees understand their work as serving multiple stakeholders, or internal and external customers. The environment comes to be treated as a customer of the closed loop “zero-to-landfill” systems design. In turn, this leads to sustainable benefits, financial (profit, jobs to the region, etc.), environmental (zero-to-landfill), and social (employee engagement).

The theory of system dynamics (Forrester, 1987) finds reinforcing loops in relationship to balancing loops, and vice versa, over time. The reinforcing dynamic represented in Fig. 1 shows no balance, therefore suggesting that the dynamic relationship could change over time to more balance. It would be likely, then, that the level of engagement would moderate over time should the project team stay together. In this case, the dispersion of the

Streamline team after the product launch tells us little about how experiences of positivity can be sustained.

Limitations and Research Implications

The Streamline case offers a single case study. It is unclear how much can be generalized beyond the particular participants and context, however mainstream the corporation it represents (Eisenhardt, 1989). As in all unique contexts, generalizability is inherently ambiguous (Numagami, 1998). That said, what can be generalized, perhaps, is that contexts, particularly those in which organizations strive to address complex problems such as sustainability, must be made conducive to the transformative work that is required.

Further research is needed to examine a wide range of human responses to the implementation of a sustainability strategy. To date, researchers with a sensitivity to issues of organizational development and change processes have noted that “most groups predominantly focus on product or content of their activities and paid little attention to the process” (Wildemeersch, Jansen, Vandenabeele, & Jans, 1998). Therefore, further research in such environments offers key opportunities to develop our theories of sustained engagement, innovation, and change. Complex activities invite researchers to move beyond rationalistic frameworks to include aspirational moral purpose, relationships, and emotions.

CONCLUSION

Sustainability portends innovation both in what we produce and how we produce it. The past decade has yielded numerous advances in the arena of sustainability-motivated business practices. In the early days, governmental regulation and increasing demand for ISO 14001 certification compelled companies to look for cost-effective and innovative means of compliance with external sustainability requirements (Hart, 1997). More recently, some companies are beginning to realize the competitive advantages of voluntarily adopting sustainable business practices (Hawken, Lovins, & Lovins, 1999; Waage, 2003). Despite the growing availability of technologies and tools for achieving sustainability, and numerous case studies about the increased competitiveness that sustainability can afford, many other organizations have been slow to implement specific practices. The need for addressing the human elements of innovation, if technical innovations are to succeed,

suggests that the insights of the sociotechnical perspective (Pasmore, 1988) remain particularly relevant in sustainability change efforts.

The extraordinary complexity of sustainability issues calls for a holistic approach to technical and behavioral components of innovation and change. Meadows, in her article “Nine places to intervene in a system,” lists “the mindset or paradigm out of which the goals, rules, feedback structure arise” as the most high-leverage place to accelerate change (Meadows, 1997). Allowing for elevation of employee meaning-making may be considered a helpful intervention in the fast-paced flow of modern work life. It allows for people to examine mindsets about shared responsibility toward societal level goals. Indeed, this project challenges a more broadly held belief that business to be profitable must incur trade-off depletion, i.e., for business to make money, people and natural resources must be “used up.” To the contrary, as this project intriguingly suggests, embracing a pro-social mandate can allow business to flourish in the short and longer terms.

NOTES

1. “Cleansheet” is an industry term and implies that all parts of a project can be designed from scratch. Such projects are relatively rare in large companies where current product architecture is usually updated rather than entirely redesigned.

2. The term “sustainability” has grown in popularity since 1987, when it was first defined in the Brundtland report from the UN’s World Commission on Business Development. Sustainability was defined there as “meeting the needs of the present generation without reducing the capacity of the future generation to meet their own needs.”

3. We may operationalize this definition, according to the framework of the Natural Step (Robert, 2002), which defines a sustainable system as one that does not lead to systematically increasing:

- i) concentrations of substances extracted from the earth’s crust (e.g., fossil fuels),
- ii) concentrations of substances produced by society (e.g., nonbiodegradables),
- iii) degradation by physical means (e.g., loss of productive green spaces), and, in which,
- iv) human needs are met (e.g., leadership and community development).

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APPENDIX. THE INTERVIEW PROTOCOL

Please take a look at the project time line we have prepared as background. Please

1. add any significant event to the time line that is absent and
2. note for us any material (picture, document) that you think we ought to have so as to better understand a certain event.

Introductory questions

1. Please tell me a little about your history here.
2. Try to imagine yourself once again “being engaged with your *Streamline* work.” Can you describe that picture to me? What is the feeling you have?

Interview on time line phases

3. What kind of work were you engaged in during that *early* time period?

4. What were you most engaged with during that beginning time period? Why?
 - a. When were you least engaged? Why?
5. Tell me about your experience of the leadership inside *Streamline* in this stage?
6. What stands out for you in this period as personally fulfilling?
 - a. What stands out for you as frustrating or demoralizing?
7. Compare your engagement during this early period with the early time period of another project? How is it similar, different? Why?
8. On a scale of 1–4, where 1 is disengaged, 2 somewhat engaged, 3 is quite engaged, and 4 is deeply engaged, how engaged would you describe yourself as being overall in this “beginning period” of *Streamline*?

Now let us move to a *later period* of your work with the project. I would like you to think about this later period as we review the same questions.

End of interview

9. In your life outside work, did you feel as though you sometimes represented your company? If so what were you proud to represent?
 - a. What part of the project work did you prefer not to identify with?
10. What was it, if anything, that made the project different from others you worked on?
11. We notice that you rarely/frequently mentioned the “sustainability” component of project that is related to its being “zero-to-landfill.” Could you say more about what that component meant to you? What it means to you today?
12. Is there anything I did not ask you that you think is important?

Thank you.

APPRECIATIVE INTELLIGENCE IN ACTION – A CASE STUDY OF SUSTAINABLE VALUE CREATION BY IRUPANA ORGANIC FOOD OF BOLIVIA

Michael Daniel Metzger, Héctor Martínez and
Miguel Ángel López

ABSTRACT

For decades, the Altiplano farmers of Bolivia had been marginalized by the remoteness of their home and exploitation by the private sector and injustices inflicted by the government. The notion that this impoverished region could sustain economic development might correctly have been described as hopeless. The Altiplano farmers' inability to develop a sustainable source of income threatened their very cultural identity. The only manner in which the farmers' culture might be sustained was through charitable donations from international NGOs. But it is exactly in this situation, when obstacles are stacked against success, where appreciative intelligence can provide an avenue to overcome despair. After years of working with NGOs, Javier Hurtado was able to identify a source of value

Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value

Advances in Appreciative Inquiry, Volume 3, 237–256

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003017

that could provide hope and a path to sustainable development for the Altiplano farmers. This is the story of the impact that one individual's application of appreciative intelligence can have on a community. The Irupana story illustrates how our destinies are shaped by our ability to discover that which is best within ourselves and the communities in which we live. This is the story of Javier Hurtado and Martha Cordero, founders of Irupana Organic Foods located in the Bolivian Altiplano, as they discover the unique potential in the harsh Bolivian landscape and the impoverished peasant farmers that inhabit this setting. Through the framework of appreciative intelligence, the researchers observed the entrepreneurs reframe their circumstances around the positive potential that is within the Altiplano-farming community and its unique natural resources, and create a successful organic foods company.

INTRODUCTION

Bolivia is a nation that has lived through a very difficult history of poverty and political struggle. This history has been marked by a very damaging class gap that has divided the nation and has elicited considerable distrust toward the business sector (Lora, 2009). In the documentary *The corporation* (Achbar & Abbott (Producer and Director), 2003), the anger of the Bolivian citizens toward the recently privatized water service company produces some of the most poignant and emotional images of the film that documents Bolivians general distrust of Western capitalism. This distrust of the private sector, whether warranted or not, has limited the avenues of development for a great number of Bolivia's citizens. Included in this general distrust of capitalism in disproportionate numbers have been the Quechuan farmers of the Bolivia's Altiplano. Because of the remoteness of their land, this community of farmers has little contact with the rest of Bolivia. For most of the last decade they have subsided on international aid and the vegetables and grains they produce and sell in small rural markets. Unfortunately, the small markets do not provide a path out of poverty. Instead buyers frequently alter produce scales such that they pay farmers considerably less for their produce, further deepening their distrust for private business and market capitalism. Bolivia's own government has seen the Altiplano farmers distrust of capitalism as a barrier to development. International aid has only further hindered entrepreneurial initiative as farmers have become more and more dependent on those funds.

Javier Hurtado and his wife Martha Cordero, after years spent working for NGOs with Quechuan farmers in the Altiplano, became convinced that only private enterprise could salvage the impoverished Quechuan community. They recognized the inherent strengths in the Altiplano ecosystem and its naturally organic grains and produce that possessed fabulous nutritional value. These grains and produce sold in international markets would demand a much greater price for the farmers than nonorganic produce. Where others saw the farmers as poor and helpless and their lands unproductive, Javier and Martha saw potential, if they could just reach other markets, and bring recognition to the Quechuan products. The couple's innate appreciative intelligence (Thatchenkery & Metzker, 2006) helped them reframe the situation from a problem to a possibility, by identifying the inherent positives this destitute community possessed in its highly nutritious produce and traditional organic farming methods. Javier and Martha worked to make their vision a reality, overcoming barrier after barrier, displaying persistence, conviction that one's actions matter, tolerance for uncertainty and irrepressible resilience (Thatchenkery & Metzker, 2006), while overcoming the distrust of the farmers themselves toward business endeavors and providing the stakeholders of that community with a means to develop sustainable value (Laszlo, Sherman, Whalen, & Ellison, 2005). The following sections describe these concepts of appreciative intelligence and sustainable value observed in the Irupana story in more detail.

APPRECIATIVE INTELLIGENCE

Appreciative intelligence is the ability to reframe and perceive the generative potential in challenging situations and to engage in purposive action to transform the potential to positive outcomes, or metaphorically to see the mighty oak from the small and undeveloped acorn (Thatchenkery & Metzker, 2006). It is the capacity to appreciate the positive within an object, organization, individual, or opportunity, where it is not easily perceived. The application of appreciative intelligence involves three components: reframing; appreciating the positive; and seeing how the future unfolds from the present (Thatchenkery & Metzker, 2006).

The capacity to reframe a situation, recognize the potential, and develop a vision to make that potential realizable is an intelligence applied by entrepreneurs in the business world. However, this intelligence is different from that measured by IQ tests, in that it is linked to humans' need for

meaning, vision, and value (Thatchenkery & Metzker, 2006). It requires intentionality and the creation of new possibilities where possibilities were previously perceived to be limited. Those with high AI have a capacity to produce a sense of purpose to even the most mundane activities. These high AI individuals lead organizations to higher incidence of innovation and creativity, more productive members and greater ability to adapt in changing and challenging environments (Thatchenkery & Metzker, 2006). The identification of AI has far-reaching implications for individuals, organizations, and our society.

SUSTAINABLE VALUE

The subject of sustainable value is of enormous importance for businesses all over the world, as sustainable value incorporates environmental and social impacts in the corporate decision-making. The interests of multiple stakeholders are brought into the Board Room, adding social and environmental considerations to the development of business strategy. However, the importance of SV has not facilitated its application and incorporation in traditional business strategy to the extent warranted (Laszlo, Sherman, & Whalen, 2003). Rather, the creation of shareholder value has dominated traditional business strategy, for without the support of the shareholders, a CEO will not have the opportunity to run a business. However, companies that overlook the opportunity to create sustainable value are increasingly feeling the backlash of socially and environmentally conscious stakeholders and missing significant business opportunities.

Value is sustainable when it is positive for both shareholders and multiple stakeholders. In such circumstances shareholder value is created, not merely transferred from stakeholders (Laszlo et al., 2003). In this chapter we are using Laszlo, Sherman, Whalen, and Ellison's framework (Laszlo et al., 2005) that provides both corporations and their stakeholders a way to understand and support sustainable value creation, shifting the discussion from win/lose to win/win, from either/or to both/and. It reframes stakeholders from problems to be managed to partners and resources to engage in creative dialogue. This reframing mirrors AI, and offers a means for companies to tap sources of hidden value and create new products and services, new markets, and even new business models that can fuel growth and help ensure sustainable returns to shareholders (Laszlo et al., 2003).

SUSTAINABLE VALUE FRAMEWORK

As the perspective of businesses moves from shareholder priority to stakeholder inclusion, managers require an “outside-in thinking,” which reframes business decisions from the perspective of the stakeholders (Laszlo et al., 2005). The sustainable value framework provides managers with a disciplined model on which to diagnose a company’s situation, strategically integrate shareholder and stakeholder priorities, and create value for the stakeholders and capture that value. The sustainable value framework includes two axes: shareholder value and stakeholder value (Fig. 1), whose alignment produces Sustainable Value opportunities for a company. These sustainable value opportunities may include enhancing company reputation, establishing product differentiation, motivating employees, reducing costs, or providing entry to a new market (Table 1).

To be able to successfully apply the model, the CEO and leaders with P&L responsibility need to see stakeholder value as essential to the growth of the company. The sustainable value framework has three phases: diagnosis; value creation; and value capture (Table 2). The initial phase requires an analysis of how the firm currently creates or destroys

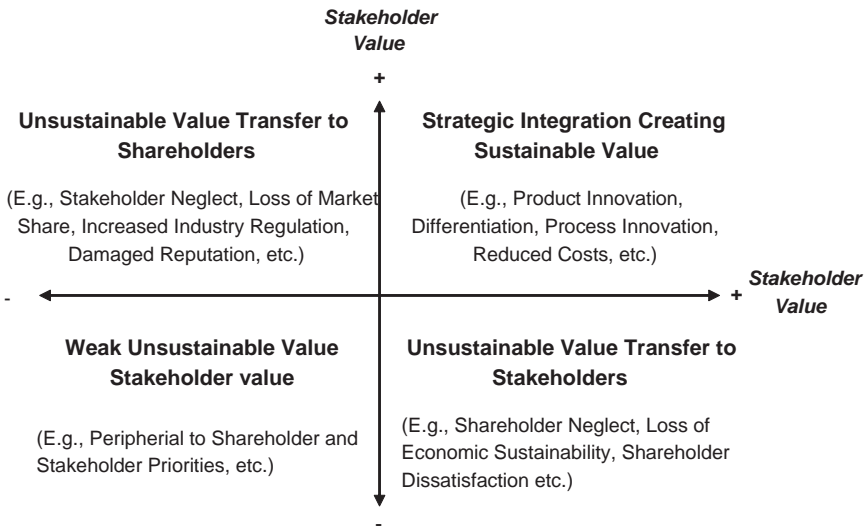


Fig. 1. Shareholder and Stakeholder Value 1 Adapted with Permission from Laszlo et al. (2005, p. 67).

Table 1. Sustainable Value Opportunities.

Level of Focus	Sources of Sustainable Value
Industry context	Sustainable innovation that drives industry standards and thereby creates competitive advantage
Company reputation	Sustainable value creation that enhances brand recognition, positive associations, and preference among consumers and employees
Market entry	Sustainable value creation that opens new markets by addressing societal problems and creating customer demand
Product innovation	Sustainable value creation that incorporates technical features meeting sustainability challenges
Process innovation	Sustainable value creation through improved processes that reduces energy consumption, raw material waste, and process costs

Source: Adapted with permission from Laszlo et al. (2005, p. 73).

Table 2. Diagnosis, Creation, and Capture of Sustainable Value.

Diagnosis	Value Creation	Value Capture
– Identify stakeholders	– What are the company actions that will naturally integrate shareholder and stakeholder value?	– What products, processes, or programs must be adapted to include the stakeholder concerns?
– Describe stakeholder interests and concerns	– What level of focus will value be created: industry context, company reputation, product innovation, process innovation?	– What is the appropriate way to align stakeholder and shareholder concerns?
– Describe how the company is neglecting stakeholder interests and destroying value	– What shareholder value may result: market share growth, improved profitability, reduced cost of capital, company brand?	– What additional resources are required: financial, human, technical?
– Describe how the company might address stakeholder interests and create value	– What factors are critical for integrated value creation?	– What additional training is required to deliver on integrated value creation?
– What are the risks associated with continued value destruction?		– How will results be measured, progress tracked, and learning documented and disseminated?
– What are the risks associated with new value creation?		

Source: Adapted with permission from Laszlo et al. (2005, p. 75).

stakeholder value, as well as an assessment of risks and the issues associated with stakeholder impact. In the next phase, a firm determines the actions that will create or reduce stakeholder value, as well as look to leverage strategic partnerships with key stakeholders, building a business case for

action and obtaining the needed resource. The third and final phase is when the firm determines the requirements for execution, as well as measures and validates stakeholder value (Laszlo et al., 2005).

The following section reviews the research methodology employed in the analysis of the Irupana Organic Foods.

METHODOLOGY

While the publication of case studies in business journals has been in decline (Eden, Hermann, & Li, 2005), the methodology of a descriptive and holistic single-case study (Yin, 1994) remains ideal for in-depth research for phenomena that has been little investigated or previously not accessible for observation. The descriptive information provided by a case study, when guided by a descriptive theory, as detailed in the introduction to this study (Thatchenkery & Metzker, 2006), can contribute to the understanding of phenomena through the wealth of qualitative data made available. When possible, the interpretations made and conclusions drawn from our observations and interviews with Irupana founders and employees and the Altiplano farmers have been triangulated with third party sources.

This chapter draws from a qualitative study for the Irupana case study for the Social Enterprise Knowledge Network (SEKN) project. SEKN was established in 2001 by leading Latin American business schools, the Harvard University Graduate School of Business Administration, and the Avina Foundation. Its research focuses on high-priority areas in the field of social enterprise. The primary data collection method was personal interview and participant observation (Yin, 1994). The data was collected over several months, which included three separate trips to Bolivia's Altiplano by three different researchers, each trip lasting approximately one week. In total, three weeks were spent in the Bolivian Altiplano interviewing the company founders, the executive team and employees, as well as six different suppliers to the company and the Board of Directors of the Association of Real Quinoa farmers of the Bolivian Altiplano. Additional interviews were made with NGO executives that interfaced with both the company and its suppliers. The interviews were tape recorded and some encounters were videotaped. Tape recordings and video recordings were transcribed and transcriptions were reviewed by the research team to compare findings and conclusions.

The objective of this chapter is to apply the appreciative intelligence (Thatchenkery & Metzker, 2006) and sustainable value framework (Laszlo et al., 2005) models to the analysis of Irupana, to bring further understanding of how appreciative intelligence can provide the means through which social and economic development can be achieved. The following is an account of the authors' observations of appreciative intelligence manifest in Irupana and its suppliers.

THE IRUPANA STORY

In the 1970s, Bolivian student Javier Hurtado was forced to leave his country for his political activism and communist party affiliations, activities stemming largely from his desire to help rural Bolivian farmers escape extreme poverty. While exiled in Germany, Javier obtained a Ph.D. in sociology, writing his dissertation on the organization of rural farmers. He later returned to Bolivia to continue to fight rural poverty and help the Bolivian farmers to organize to that end. However, Javier became disenchanted after years of working with NGOs to address the issues that caused the Quechuan people of the Bolivian Altiplano to be mired in poverty. He came to suspect that the very organizations in which he had made a successful career were creating a cycle of economic dependency on the part of the very people they professed to help. Bolivia had become populated with so many NGOs that Javier pejoratively referred to his country as the "nonprofit nation."

After more than 20 years of working for NGOs and experiencing growing disillusionment, Javier became convinced that the only way for Quechuan farmers to leave the humiliating cycle of dependency and regain their dignity and sense of self-efficacy as a community was through private enterprise. However, Javier did not envision the typical agribusiness enterprise model from the West, such as had been promoted for years by Bolivia's own government. The models being promoted at the time included large industrial crop production aided by genetically modified seeds and excessive use of fertilizers and pesticides. Instead, Javier dreamed of creating a private enterprise that rediscovered what was truly unique and extraordinary about the Bolivian Altiplano and its people, and had allowed them to exist for thousands of years as a community with a unique culture and language. Javier Hurtado and his wife and business partner Martha Cordero possessed the gifts of appreciative intelligence.

THE COMPONENTS OF APPRECIATIVE INTELLIGENCE AT IRUPANA

Appreciative intelligence, like one of the varied multiple intelligences found in the theory formed by Howard Gardner, has come to be understood as the ability to reframe and perceive the generative potential in challenging situations and to engage in purposive action to transform the potential to positive outcomes (Thatchenkery & Metzker, 2006). Its principal components are the ability to: (1) reframe situations or circumstances, (2) appreciate the positive within a given situation or circumstance, and (3) to act in such a way that the future can unfold, i.e., engage in the necessary actions so that the desired outcomes may unfold from the generative aspects of the current situation (Thatchenkery & Metzker, 2006). Each of these components of appreciative intelligence is evident in the Irupana story and explained below.

Reframing the Potential in the Poverty of the Bolivian Altiplano

Bolivia is an astonishingly ecologically diverse region within Latin America. For years, the reports from the National Research Council (1989) emphasized the potential for Andean agriculture:

The Andean region is one of the few areas of the planet with inhabited land at altitudes from 800 meters to 4,500 meters above sea level, and with highly diversified farming practices. There is a real ecological mosaic throughout the Andes, with countless microclimates, from the driest to the wettest, coldest of the warmest, from the lowest to the highest. Perhaps no other region in the world holds such a broad range of environments where rainfall, vegetation, ice, sunlight and soil type can vary in distances as short as only a few meters.¹

Unfortunately, the potential for leveraging Bolivia's biodiversity has contrasted greatly with the harsh economic reality of the country. In 1987, 35 years after Bolivia's land reform, the Andean highlands and valleys had been divided into small landholdings, but the inhabitants of those farms had no technical or financial resources to take advantage of the land's potential. The residents in those rural areas represented 55 percent of Bolivia's inhabitants, with nearly 95 percent of them living in poverty.² For these peasant farmers, agriculture was the only economic activity available. They were a marginalized population, unable to participate in the highly competitive globalized markets of the world, where most competitors had access to superior technology and received government subsidies.

The immense ecological and biological diversity of the Bolivian Altiplano was not lost on Javier and Martha. It was their deep knowledge of the Andean culture of the Bolivian Altiplano and the indigenous foods that came from the tremendous biodiversity found in the Bolivian Altiplano that allowed them to see the positive potential that lay before them and the Quechuan people. Martha was a nutritionist and held a degree in pedagogy. Javier was a political activist and held a Ph.D. in sociology, with particular expertise in organizing rural farmers of Bolivia. Both were students of the ancient Quechuan religions that emphasized man's symbiotic relationship with nature, or *Mama Pacha*, as it was referred to in their native language. The ancient means by which the Andean farmers cultivated this tremendous biodiversity of the Altiplano would be the basis for an economically, environmentally, and socioculturally sustainable business model that would be called *Irupana*.³

The highly nutritious Quechuan foods, particularly Real Quinoa, are found only in this Andean region of Latin America, and have been cultivated for hundreds of years without the use of pesticides, as the poor Bolivian farmers of the Altiplano could never afford them. This meant that not only were the foods highly nutritious, they were pesticide free, and thus organic. The demand for organic food from an increasingly health conscious developed world was also experiencing tremendous growth. Javier and Martha saw that this growth in health consciousness and Bolivia's unique and highly nutritious crops could turn a negative situation for Andean farmers into a potentially profitable market opportunity.

Appreciating the Positive in the Bolivian Altiplano

In the early 1990s, world produce markets began to fulfill the vision held by Javier Hurtado and Martha Cordero and demand began to grow for organic foods produced without genetic modification or the use of chemicals. As the world became increasingly hungry for healthy organic food, *Irupana* understood the opportunity for Bolivia, and concluded that the country's greatest competitive advantage was not the agriculture grown on large industrial farms with genetically modified seeds, fertilizers, and pesticides, but agriculture grown in small indigenous communities in the Andean region using ancient methods of cultivation practiced for centuries by the remote Quechuan communities. In this context, *Irupana* could also exercise its own competitive advantage: its deep knowledge of regional biodiversity and the sociology of those indigenous farming communities. Their

knowledge of indigenous foods and the communities that cultivated them along with relatively simple and inexpensive technology could produce quality organic products perfect for the growing middle-class nutrition-conscious niche market. However, Irupana's plans depended on its ability to initiate and maintain mutually beneficial relationships with its Quechuan suppliers, the indigenous farmers in Bolivia's Andean region.

The growing demand for organic food also offered enviable profit margins for those growing pesticide free crops. Furthermore, converting chemical-intensive agriculture into organic agriculture required enormous investments in the land, along with considerable changes in the methods used by large professional farmers, industrialists, and traders, thus providing the family farmers in the Bolivian Altiplano a tremendous comparative advantage in the cultivation of their historically pesticide free organic crops and natural barriers to entry for the competition. Javier and Martha were among the first entrepreneurs to recognize that this change in Western consumer preferences was a great opportunity for Bolivian farmers, whose land did not require transformation to produce organic crops. The cultural heritage of the Altiplan farmers, their respect for nature, their extreme poverty, and traditional farming methods were perfectly compatible with organic production.

Javier intuitively rejected the West's definition of Bolivia's developmental problems as well as its solutions to his country's poverty – more aid from NGOs and development agencies and modern technologies for developing the agricultural potential of the mountainous region of Latin America. The proposed technologies were in the form of government-promoted industrial crops, such as the corn, wheat, and soybean products grown in the West, enhanced with pesticides, herbicides, and genetically modified seeds. Rather, Javier reframed Bolivia's potential and thereby rediscovered the inherent value of Bolivia's biodiversity and the inherent value of the simple means by which these crops were cultivated by the impoverished Andean farmers.

Seeing the Future Unfold from the Present at Irupana

In the politically tumultuous year of 1987, with only US\$4,000, a storefront, a single employee, a used Toyota truck, and a leased roaster to produce organic coffee, Javier Hurtado founded Irupana in the city of La Paz. One of Hurtado's first steps was to identify and organize the coffee producers in the rural communities in the South Yungas region. The land these farmers owned did not exceed one-fourth of a hectare, and because the farmers only

had access to informal markets, they had little incentive to increase their production or improve the quality of their product. This, however, would change when Irupana began working with them. It was from its relationships with its suppliers that Irupana sold the first 100 percent organically roasted coffee in Bolivia. Soon after, Irupana began to diversify its product line, selling nearly 80 different types of products, all organically harvested, using Andean grains (quinoa, amaranth, and cañawa), soy, honey, coffee, wheat, and fruit. Appendix 1 provides a list of the main products offered by the company today.

Irupana began its agro-industrial activities with the goal of providing farmers in the small indigenous communities of Bolivia access to formal markets where they could sell their products. Irupana identified with the Andean way of life, whose main premise was the reciprocity between nature and its inhabitants. According to the Corporación Andina de Fomento (CAF), Bolivia is the world's main producer of quinoa, producing 46 percent of the world's grain (of which Irupana is a major supplier), followed by Peru, which produces 42 percent. Appendix 2 provides a table of Bolivia's organic product export growth.

THE ENSUING QUALITIES OF APPRECIATIVE INTELLIGENCE

Appreciative intelligence seen in the founders of Irupana gives rise to four qualities that may be leveraged and may lead to extraordinary results for those pursuing visionary change. These qualities are persistence, conviction that one's actions matter, tolerance for uncertainty, and irrepressible resilience. Each quality was necessary for Irupana's success and may be observed in its founders in abundance.

Persistence

There were several times when Javier and Martha thought Irupana would not continue as a viable business. If not for their *persistence*, which at times seemed to defy reason, Javier and Martha would have abandoned the idea of Irupana in its early years. The promise held by those possessing appreciation for the good and potential in the most difficult situations is a requisite for a successful business in Latin America. Bolivia being among the most impoverished and politically unstable countries within Latin America,

it may be said that Javier and Martha belonged to a class of the most persistent of Latin American entrepreneurs.

Conviction

Javier and Martha were never content with their administrative positions within NGOs fighting rural Bolivian poverty. They grew to believe that their actions as NGO executives did little to reduce poverty, and even worse, suspected these very organizations were contributing to a cycle of dependency on the part of the very people they professed they were trying to help. Javier and Martha placed their *convictions* above personal comfort and felt their actions as private entrepreneurs would matter more in the fight against rural poverty than as NGO administrators, and hence they were moved to begin Irupana.

Tolerance of Uncertainty and Irrepressible Resilience

In Latin America, and Bolivia in particular, the uncertain economic and political climate accentuates the many uncontrollable and unpredictable variables the most careful planners try to account for in their business models. Javier and Martha confronted *uncertainty* at every turn as Irupana was launched, from hyper inflation of the 1980s, to ever present political unrest. Their *irrepressible resilience* was tested time and again and not found wanting, for more than 20 years after its founding Irupana continues to grow its markets in both Europe and the United States in a climate of continued economic and political unrest.

In every instance, Javier and Martha's persistence, conviction, tolerance for ambiguity, and resilience did not come from a failure to fully understand the obstacles facing them, but rather their appreciation for the unique potential found within the Bolivian Altiplano and the Quechuan people that inhabit this region. Their appreciation for the unique potential has sustained them both, and Irupana, in these seemingly impossible circumstances.

BUILDING APPRECIATIVE INTELLIGENCE

Perhaps, one of the true indicators of the presence of appreciative intelligence is the ability of those who possess this quality to successfully

and convincingly communicate their vision of the positive to others. This successful communication of the possible becomes embedded in the organizational culture that over time can change the very environment in which the organization operates. Successful communication of the possible helps others increase their appreciative intelligence and thereby create further successes, ever expanding their vision and influence. This is accomplished through the use of positive generative language and appreciation and reward shown to those who share in the collaboration to make the vision of the possible a reality.

Generative Language

Irupana began its agro-industrial activities with the goal of providing farmers in the small indigenous communities of Bolivia with access to formal markets where they could sell their products. Important to fulfilling this goal was Irupana's identification with the Andean way of life, whose main premise was the reciprocity between nature and its inhabitants.

Irupana's business model integrated environmental, sociocultural, and economic sustainability in its strategy. Irupana's mission statement as posted at the La Paz plant read:

To recover the agriculture potential of natural ecological and culinary culture of all the peoples of Bolivia; its raw material; applications and customs, and in an industrialized process, return to the country the best diet possible, while promoting a sustainable development of people and the environment.

Irupana's role in the environment, society, and economy, thoughtfully designed by the directors of the company, promoted the strong alignment between Irupana's mission and the most recent developments in sustainable value creation. In recent years, these roles have driven Irupana's business decisions and have contributed to its goal of achieving ecological, social, and economic sustainability. Today, Irupana's goals include the following:

- Lead a change in society from inhumane and predatory consumerism into life-generating, sustainable, and environmentally conscious stewardship of the environment.
- Take responsibility for protecting and promoting the cultural heritage of Bolivia's indigenous people, whose knowledge of ancient technology allows them to live in reciprocity with nature.
- Reestablish the market as an arena for competition, with fluid exchange of talents, products, and services that benefit the community.

For Irupana, this generative language embodied in their mission statement was not mere idle words, but backed by genuine appreciation and reward for those farmers who collaborated with them in its fulfillment.

Appreciation, Reward, and Success

Irupana accomplished its goals by purchasing its raw materials from its Andean suppliers, almost always paying prices that were above market value, rewarding for quality, cleanliness, and punctuality. So that farmers did not sell their products at informal communal markets, where they are normally taken advantage of by purchasers, Irupana paid a 20 percent premium⁴ on their products. This practice created trust and a foundation for greater collaborative efforts on the part of the Andean farmers and Irupana. Today, its supplier base has grown to almost 1,000 families, all farmers located in the Andes, the Amazon, and the Chaco Boliviano. Irupana works with them and provides advice on the production of organic and conventional crops. Over the years, Irupana's distribution channels have increased from 18 to 300 retail stores, including small neighborhood stores, as well as large supermarkets in Bolivia's three main cities: La Paz, Cochabamba, and Santa Cruz.

In 2002, Irupana's social impact in the Bolivian Altiplano was itself recognized by the Schwab Foundation of Switzerland. Javier Hurtado was chosen to be one of its 20 members, and was awarded recognition as one of the "Outstanding Social Entrepreneurs in the World." This was one of many such awards conferred to Irupana.

Culture of the Possible

Perhaps, the more compelling benefit of the appreciative intelligence observed in the actions of Javier Hurtado and Martha Cordero is the infectious effect such intelligence creates in those with whom it comes in contact. For example, the Andean farmers gained not only fair prices for their produce by collaborating with Irupana, but also the positive experience of doing business with a private company, for many farmers their first such experience. These experiences with Irupana have resulted in a transformation of the mind-set of the indigenous farmers; where before they had depended on charity for self-improvement, personal development, and community prosperity, now they strived for these through commerce.

More specifically, the Andean farmers supplying Irupana with its raw materials themselves began to behave more entrepreneurially. Irupana's Purchasing Manager explained that where farmers initially resisted the incorporation of new technology in their farms, many now recognize the benefits in reducing production costs, in both labor and capital. Once they recognized the benefits, the farmers quickly adopted and invested in the technology. For example, when they understood that the only way to expand their crops would be through the use of tractors, they quickly began to acquire them. According to the Purchasing Manager, this proactive attitude has come to replace the inertia that had trapped them in the cycle of depending on donations from international organizations.

The authors of this chapter had similarly experienced this entrepreneurial drive of the farmers when interviewing the Board of Aproquillacas, which is made up of the quinoa farmers that have participated in Irupana's Suppliers Program. When we first met with these rather dignified elders in the offices of Irupana, they inquired if we represented an NGO or foundation and began to speak to their need for technical assistance and financing. When we explained that we were professors studying Irupana's business model, the board members changed the subject of our conversation to economics and the higher prices for their raw materials offered by an Irupana competitor, and the purpose for their visit was to talk with Javier about improving their margins. While we waited in the offices of Irupana for Javier to finish a client meeting, these farmers used the time to share competitive bids with us and ask our opinion. In a few minutes, they had changed their tone from need for charity to one of business and enlightened self-interest; tangible evidence of a proactive attitude which had come to replace that of inertia and dependence. The President of the Association even expressed the farming community's larger ambitions to supply quinoa to the world, not just Irupana:

This is our dream. Right now we lack a processing plant, but when we get it, we will start processing organic quinoa, clean and natural. Then we will export all of our production of quinoa, and get a better price for it. Working is expensive. We buy natural fertilizers, which we bring from afar, and are expensive. This is why we care so much for our product.

The purpose of the Board is to modernize the production in all of our fields; we do not have that right now, sometimes we still have to use the yoke. We hope that God will allow us to have more machinery to produce more quinoa and to meet the demand of our brethren from abroad. Right now, Irupana is helping us with that, but our dream is to reach them directly as producers.

These were the words of an empowered people that now saw beyond the inadequacies of doing business from one of the poorest, remote, and land-locked countries in Latin America, but saw an unlimited potential made possible by their unique circumstances. They had acquired vicariously through their interactions with Irupana an appreciative intelligence and all the qualities that accompany it.

CONCLUSIONS

Javier Hurtado and Martha Cordero intuitively rejected the West's definition of Bolivia's developmental problems as well as its solutions to his country's poverty – more aid from NGOs and development agencies and modern technologies for developing the agricultural potential of the mountainous region of Latin America. The proposed technologies were in the form of government-promoted large industrial crops, such as the corn, wheat, and soybean products grown in the West, enhanced with pesticides, herbicides, and genetically modified seeds. Rather, Javier reframed Bolivia's potential and thereby rediscovered the inherent value of Bolivia's biodiversity and the inherent value of the simple means by which these crops were cultivated by the impoverished Andean farmers. They communicated their vision to their supplier partners using the power of positive generative language, supported by policies which rewarded collaboration that helped fulfill what became a shared vision.

The story of Irupana gained international fame and an award from the prestigious Schwab Foundation, but more importantly the ears of the community it had intended to benefit most, the Andean farmers of the Altiplano. The farming community had previously relied on its poverty as a competitive advantage to securing charity from the NGO community, but it now is a community as entrepreneurial as the company it supplies.

This chapter has explored the value of appreciative intelligence in reframing the positive potential in a given situation, and its ability to open the door to opportunities for positive transformation of entrepreneurs, organizations, and entire communities. This chapter has also demonstrated the genius of nature's design in diversity, and the necessity of this diversity (biodiversity in the case of Irupana) for maintaining healthy, sustainable ecosystems. The story of Irupana is a metaphor for the need for all ecosystems, whether communities, organizations, or families, to value their unique inherent diversity as strengths, appreciate what is best in these diverse and complex systems in our lives, and aspire to a reality where

uniqueness is celebrated and purposefully designed into the system for positive sustainable value creation.

NOTES

1. Adapted from the National Research Council, “Lost Crops of the Incas: Little-Known Plants of the Andes with Promise for Worldwide Cultivation”, National Academies Press, September 1989.

2. Figures from Instituto Nacional de Estadística de Bolivia, which measured the poverty threshold using the Unmet Basic Needs Method: household, basic services and goods, education, and health.

3. Irupana is the colonial town found in the remote mountainous regions of the Bolivian Altiplano where Javier Hurtado was raised.

4. Independently documented and verified by PRORURAL NGO.

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APPENDIX 1. PRINCIPAL PRODUCT FROM IRUPANA

Line of Products	Sub-Products	Products
Cereals	Breakfast cereals	Granola Super granola Granola with honey
	Whole wheat grains	Brown rice Wheat
	Andean grains	Quinoa, amaranth and cañawa
	Andean grain popcorn	Amaranth Cañawa
	Andean grains flakes	Flakes of quinoa, amaranth, and cañawa
	Energy bars	Quinoa, amaranth, and cañawa
	Flours	Wheat, quinoa, amaranth, and cañawa
Honey		Honey Porpolio liquid Bee's honey with porpolio Pollen
Coffees		Organic Toasted with sugar Barley coffee
Breads		Whole wheat Loaf Flat Special Unleavened Quinoa crackers
Solfruit	Dehydrated fruit Teas Marmalade	Pineapple, mango, and banana Orange tea and pineapple tea Pineapple, orange, and strawberry

Source: Irupana Andean Organic Food.

APPENDIX 2. PRODUCTION AND EXPORT OF ORGANIC PRODUCTS IN BOLIVIA

Year	Producers	Hectares	Metric Tons	Metric Tons Exports	Divisas Generadas USD
1991–1994	675	3.375	NA	NA	NA
1995	2.308	12.369	602,50	513	932.121
1996	2.500	15.800	908,70	773	1.404.541
1997	2.978	22.509	1.442,30	1.226	2.227.642
1998	3.152	22.800	1.877,70	1.596	2.899.932
2000	5.240	31.025	6.503,14	5.528	10.044.376
2002	6.500	364.100 ^a	7.950,00	6.758	12.280.000

Source: Asociación de Productores Ecológicos de Bolivia.

^aApproximately increase of 200.000 hectares of organic Chestnut.

SOCIAL ENTREPRENEURSHIP: A MODEL FOR SUSTAINABLE VALUE CREATION

Michael Pirson

ABSTRACT

“Business as usual” has come under heavy scrutiny. The financial crisis has caused many to question the basic premises of the current business system. In the following chapter, I will examine how organizations can cope with the current crisis by creating sustainable value. I propose that businesses learn from a newly emerging field called social entrepreneurship. The concept of social entrepreneurship is discussed and examined for its potential to support for sustainable value creation. A detailed case study of bracNet provides an example of shared-value creation. bracNet is a for-profit enterprise in Bangladesh aiming to close the digital divide globally and regionally. New business models and cross-sectoral partnerships allow bracNet to implement a social and financial value creation strategy. Key for success seems to be the shared ownership of bracNet, by BRAC, a nonprofit organization, and various for-profit entities (including VCs, industrial conglomerates, and hedge funds).

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 259–274

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003018

“Business as usual” has come under heavy scrutiny. The financial crisis has caused many to question the basic premises of the current business system. But even before the crisis hit, public outrage over excessive bonus payments, crooked corporate officers, the looting of pension funds, the defrauding of stockholders, and the wholesale firings of hardworking employees had reached very substantial levels (see, e.g., Jackson & Nelson, 2004; Pirson, 2007). Not only the antiglobalization movement of the far left but also more traditional thinkers have felt increasingly uncomfortable with corporate power and influence. In September 2000 (even before Enron’s collapse), more than 70% of Americans surveyed said that business had too much power over too many aspects of their lives and too much political influence. Only 4% agreed that companies should have only one purpose, namely, to make the most profit for shareholders. Ninety-five percent agreed that American corporations should have more than one purpose and additionally, that they owe something to their workers and the communities in which they operate (Bernstein, 2000; Sharp Paine, 2003). International surveys on trust in corporations also demonstrate that trust in big business continues to decrease. According to GlobeScan (Forum, 2006), in 2006, trust in multinational and global companies reached its all time low. In the aftermath of the financial crisis, the level of mistrust in business is only increasing. In brief, current capitalism fails to be life-conducive as it is insufficiently set up to create sustainable value and fulfill authentic human needs (Diener & Seligman, 2004). As a result current business organizations are facing a predicament that Jackson and Nelson (2004, p. 19) compare to a “perfect storm.” They argue that “despite the ongoing pressures of relentless competition and the need to deliver short-term financial performance, no major company can ignore and fail to respond to the following threats to long-term corporate success and viability:

- the crisis of trust,
- the crisis of inequality, and
- the crisis of sustainability.”

In the following chapter, I will examine how organizations can weather the “perfect storm” by creating sustainable value. I propose that businesses learn from a newly emerging field called social entrepreneurship. Thus, I will first present the concept of social entrepreneurship and provide a classification of various models of social entrepreneurship. I will then outline a specific case of social entrepreneurship to discuss how business can redefine itself and create long lasting world benefit.

THE EVOLUTION OF SOCIAL ENTREPRENEURSHIP

Anticipating the crises of the private and public sectors, Etzioni (1973) suggested that a new form of organization would be needed to provide necessary innovations. That third alternative would combine the efficiency of the market and the welfare orientation of the state. Since the 1980s the so-called third sector grew faster than any other sector now providing up to 10% of employment in the United States alone. Many scholars credit a new breed of entrepreneurs, the social entrepreneurs with the fast growth of that sector.

Social entrepreneurs are similar to business entrepreneurs in the methods they use, but different as they are motivated by social goals rather than material profits. As Leadbeater (1997) observes: “(T)heir great skill is that they often make something from nothing, creating innovative forms of active welfare, health care, and housing which are both cheaper and more effective than the traditional services provided by the government.” In that sense social entrepreneurs deploy a substantial amount of what is called appreciative intelligence, the ability to reframe and perceive the generative potential in challenging situations and to engage in purposive action to transform the potential to positive outcomes (see, e.g., Thatchenkery & Metzker, 2006).

Social entrepreneurship has many facets and represents an umbrella term for a considerable range of innovative, dynamic, social value creating ventures. Social enterprises usually borrow and mix approaches from business, charity, and social movements and represent a new force in the social and environmental sectors. Common to them is the implicit use of appreciative intelligence, the constant reframing of social problems into opportunities, the appreciation of the potential for positive change, and the envisioning of a world without those problems combined with a practical and pragmatic approach to implementing possible solutions. Social entrepreneurs aim to solve societal problems, not only to alleviate them, to deliver sustainable value. As such they could present an interesting alternative model for businesses as well, as they create sustainable value, help alleviate inequity and environmental problems, and build trust with stakeholders on a larger scale.

Social Entrepreneurship: A Model for Sustainable Value Creation?

So, does social entrepreneurship serve as a promising model for human centered, life-conducive business organizations? Could it be a concept for

sustainable value creation? While many proponents such as Bill Drayton would claim that it does, other observers (e.g., Dart, 2004) view social entrepreneurship critically as a manifestation of the usurping supremacy of business across all aspects of life. To answer the question of whether and when social enterprises serve as a model for sustainable value creation, we need to look into the definitions of sustainable value creation and the constitutive elements of social entrepreneurship.

Figge and Hahn (2004) argue that the concept of sustainable value creation centers on the goal of increasing or at least stabilizing the per capita well-being or utility over time without leaving present or future generations worse off. Employing the capital theory approach to sustainability which often comprises man-made capital (such as produced goods), human capital (such as knowledge and skills), natural capital (such as natural resources), and social capital (relationships between individuals and institutions), they posit that value creation can be called sustainable, if constant capital stocks or at least constant capital services over time are ensured. For social entrepreneurship to contribute to sustainable value creation it must adhere to that rule, by creating either of these forms of capital without depleting the other.

Nicholls and Cho (2006) argue that social entrepreneurship comprises three main elements: market orientation, innovation, and sociality. *Market orientation* is a key feature that differentiates social entrepreneurship ventures from other social organizations such as not-for-profit social service delivery or advocacy. Even though many social purpose organizations are located in dysfunctional or non-existent markets, social entrepreneurs nevertheless give primacy to the most effective deployment of resources toward achieving a social goal (cf. Nicholls & Cho, 2006).

Innovation is another major distinguishing feature of social entrepreneurship. It is the pattern-breaking change, the disruptive creation of new models and techniques, that differentiates the social entrepreneur from other social actors (Nicholls & Cho, 2006).

The real difference between social entrepreneurs and classic business entrepreneurs is the domain in which they operate. Both employ market orientation and innovation, but social entrepreneurs apply them in the areas traditionally considered to be public goods. The qualification of entrepreneurship as “social” raises two issues (Nicholls, & Cho, 2006). The first is conceptual and deals with the “what kind of objectives” can legitimately be called social. Social objectives are not necessarily homogenous and can be deeply contested (see the pro-life/pro-choice struggle with regard to abortion). The heterogeneity of social interests depends on societal values,

culture, religion, and ideology. The question of what is *social* is as difficult to determine as what is *good*. It can never be conclusively answered and has to be continuously negotiated. The more a goal is universally applicable the more support it is likely to garner. That support, however, can only be gauged through an appreciative and discursive process, which includes all stakeholders, and thus securing the legitimacy of the endeavor.

The second issue is operational and deals with the measurement of success. To determine how much an innovative, market-oriented solution is actually advancing a social objective sophisticated measurements are necessary. Many researchers are currently struggling to conceive useful social impact metrics. These metrics will have to enable everyone interested to better evaluate whether a social entrepreneurial venture makes society indeed better off. Financial metrics alone have proven to be inadequate (see also Diener & Seligman, 2004).

Overall social entrepreneurship seeks to create new solutions to societal problems. It aims to bolster social and human capital, while not depleting financial capital and is therefore aiming at sustainable value creation. This broader approach to value creation is better suited to address the problem of inequity, environmental sustainability, and public mistrust than the narrow approach to financial value creation. However, in itself the broader approach does not guarantee sustainable value creation. The market and the participation of many stakeholders, however, can help to determine which solution is the most sustainable over time.

MODELS OF SOCIAL ENTREPRENEURSHIP

The hallmark of social entrepreneurship lies in its ability to combine social interests with business practices to effect social change (Alter, 2006). The crux of the individual social enterprise lies in the specifics of its dual objectives – the depth and breadth of social impact to be realized and the amount of money to be earned. In the social enterprise, money and mission are intertwined like DNA. Even though a wide range of social enterprises has emerged, Alter (2006) suggests there are three main categories defined by the emphasis and priority given to its financial and social objectives: external, integrated, and embedded social enterprises (cf. Alter, 2006). All of these can be models for current financially driven businesses.

External social enterprise. In external social enterprises social value creating programs are distinct from profit-oriented business activities. The business enterprise activities are “external” from the organization’s

social operations and programs. Businesses can partner with not-for-profit organizations to create external enterprises that fund respective social programs and/or operating costs. This stage represents an incremental adoption of social value creation objectives. Examples for external social enterprises are partnership programs such as Product Red or licensing partnerships with the WWF. The relationship between the business activities and social programs is supportive, oftentimes providing financial and non-financial resources to the external program. Many businesses already engage in such partnerships (see the alliance of Timberland and City Year), but there seems to be much more potential (Austin, 2000).

Integrated social enterprises. In integrated social enterprises, social programs overlap with business activities, but are not synonymous. Social and financial programs often share costs, assets, and program attributes. The social enterprise activities are thus “integrated” even as they are separate from the organization’s profit-oriented operations. This type of social enterprise often leverages organizational assets such as expertise, content, relationships, brand, or infrastructure as the foundation for its business (Alter, 2006). The Aravind Eye Hospital in Madurai, India, is an example of an integrated social enterprise. It serves cataract patients in a main hospital, where wealthy patients pay a market fee for their surgery. The profit surplus created by these fees is then used to pay for the surgery of poor patients in the free hospital (Rangan, 1993). The relationship between the business activities and the social programs is hence synergistic, adding financial and social value to one another. These mixed or shared-value models have largely been unexplored by traditional businesses but could serve well as a blueprint for future shared-value creation.

Embedded social enterprise. In the embedded social enterprise, business activities and social programs are synonymous. Social programs are self-financed through enterprise revenues and thus, the embedded social enterprise can also be a stand-alone sustainable program. The relationship between business activities and social programs is comprehensive, financial and social benefits are achieved simultaneously. The Grameen Bank model of microloans serves as an example for an embedded social enterprise. In this model microloans are paid back by the borrowers with a somewhat high interest rate, but still serve the poorest of the poor who do not have access to normal credit, as they are lacking collateral. Other models that serve the Bottom of the Pyramid (see Prahalad, 2005) could also be valid approaches. Below I will explore one of these organizations, bracNet, in more detail to demonstrate how an embedded social enterprise could look like and how it could be a model for sustainable value creation in the future.

bracNet: A Business as Agent for World Benefit

bracNet is a venture to reduce the digital divide by bringing wireless broadband Internet to all of Bangladesh, including regions that do not have access to running water. bracNet is a for-profit business venture that aims to tackle an important social problem and by providing an innovative solution that can contribute to reduced inequity (Ebrahim, Pirson, & Mangas, 2009). bracNet is an example of an embedded social enterprise that could easily serve as a blueprint for sustainable value creation in the 21st century.

THE PROBLEM: THE DIGITAL DIVIDE

Nobel laureate economist Joseph Stiglitz singles out the digital divide as main driver for increased global inequity. According to the non-governmental action group Digital Divide.org, the world's most affluent 20% of citizens were garnering 85% of the wealth in 1990. By 2000, that figure had doubled (10% now owned 85% of the wealth), while the percentage of wealth held by the poor was cut in half from 8% to 4%. By 2010, the inequity gap is estimated to double again. While Internet access has become a mere commodity in the developed world, the digital divide is threatening developing nations with further exclusion from global trends and global trade, crucial in the fight against poverty and terrorism. Those without the appropriate tools (in terms of PCs and Internet connectivity) and applicable skills are disadvantaged in terms of fewer employment opportunities, restricted access to information, and general support. E-services, such as electronically supported health care delivery (e-health), Internet-based education (e-learning), technology based agricultural sourcing, marketing, and learning (e-agriculture) are just a few of the services that are deemed to impact poverty reduction. Bridging the digital divide creates social inclusion, which can, in turn, empower people to participate in the global, regional, and local communities much more effectively. Many experts thus consider closing the digital divide a precondition for reducing poverty and terrorism as well as achieving sustainable world markets.

Despite all the efforts on behalf of governments (see, e.g., US Telecommunications Act passed in 1996) and international NGOs (such as the Open Society Institute) the digital divide continues to increase, however. The big multinational IT companies poured \$2 billion a year into such philanthropic efforts in the late 1990s as their way of allaying the public's concerns and assuring wary government officials of their concern.

Few such projects survived the dot-com bust of 1999. A different approach was taken by a new breed of entrepreneurs that applied their managerial skills to addressing the digital divide problems systematically. One of the best-known stories is that of GrameenPhone, which dramatically increased telephony access for people in Bangladesh from less than 1% (landline usage) to 25%. GrameenPhone had relied on leapfrog wireless cell-phone technology and innovative ways to bring it to the rural markets (e.g., phone ladies). However, Internet access was still a luxury for most Bangladeshis.

The Context: Bangladesh

Bangladesh is located between India and Burma, has a population of more than 158 million (2008), and a land area of 144,000 square kilometers, making it the ninth most populous nation in the world with one of the highest population densities at 1,000 people per square kilometer. Approximately 25% of the country's population lives in urban areas, a figure expected to increase to 40% within 20 years. Despite continuous domestic and international efforts to improve economic and demographic prospects, Bangladesh remains a developing nation. Total GDP was estimated at US \$299.9 billion and GDP per capita was ranked 175th out of 232 countries as per 2006 data. Approximately half of the population lives below the poverty line, which makes traditional business seem very unattractive. One of the major problems business is facing in Bangladesh is the continuing political instability and recurring natural disasters. It is unsurprising that Bangladesh is also one of the countries severely affected by the digital divide. With regard to Internet services, there were only 500,000 Internet users in Bangladesh by March 2008 which corresponds to 0.3% of the population (CIA, 2008).

The Social Entrepreneur: Khalid Quadir

All in all, Bangladesh does not seem attractive to most businesses, and only a few people, those with substantial appreciative intelligence, would put up with the challenges, specifically aiming at bridging the digital divide. One of these social entrepreneurs was Khalid Quadir, born and raised in Dhaka, the capital of Bangladesh. After finishing high school in Bangladesh he moved to the United States to receive his college education. Thereafter he went to work on Wall Street and later gained expertise in private equity in

the telecommunication sector. In 1997 he joined his brother, Iqbal Quadir, to start what is now known as GrameenPhone,¹ the largest mobile phone operator in Bangladesh, serving over 22 million of its 150 million inhabitants. In 2003, Khalid left the board of GrameenPhone and took a two-year time-out at Stanford University. Khalid was committed to search for ways to provide Bangladesh with leapfrog technology to close the digital divide further. Doing business in Bangladesh was no easy task, but it was something to which he had committed himself to.

bracNet's Beginnings: The Shared-Value Creation Strategy

Khalid Quadir knew that creating sustainable value at the base of the pyramid was challenging but could be done. When growing up, he had the feeling that his country was always depicted as on the receiving end, depending on outside aid and benevolence. He was bothered by that and always felt the need to demonstrate the capacity of his people to sustain themselves, without depending on benevolent donations. He felt doing business profitably was in itself an act of empowerment, and when business approaches could be used to promote general well-being it should be done. While at Stanford he encountered a technology called WiMAX² and thought it could be a good solution for a country like Bangladesh that has a very flat topography and a dearth of landlines. In his own words:

Knowing that wireless is a way to go for Bangladesh and broadband will be the means of any communication, I realized that WiMAX could be the ultimate modern communication solution to Bangladesh to lift it and connect it to the worldwide information super highway. (Personal communication, November 8, 2007)

Even though WiMAX networks at this point had not been installed anywhere except for testing purposes, Khalid was inspired by their potential for Bangladesh. It was clear to him that his venture needed to address both social and financial needs, otherwise it would not work. First, the goal of his new organization needed to be the inclusion of the entire country to successfully bridge the digital divide. This would have to include all rural areas of Bangladesh, some of which did not even have access to running water and canalization. Second, he did not want his venture to be a government or NGO-based venture. He believed in business' ability to provide real value to people. He viewed the financial sustainability a key factor for his success. Thus, he put together a business plan for a venture he dubbed gNet. The plan should convince traditional investors as well as

potential local partners he needed to implement the social part of the agenda. It was a proposal for shared-value creation, not only shareholder value creation.

bracNet's Sustainable Business Model

Quadir saw his task as economic and social development work, but he wanted to demonstrate a new model for development, one that was marked by cross-sector collaborations and for-profit opportunities. If bracNet was only about building communications infrastructure, he argued that government should be in charge. However, if his only target had been the rural population, perhaps bracNet should have been a nonprofit organization. He explained:

bracNet has a social component which is a plus, but it is a clear for-profit venture. The idea is to have a viable project for development which is not based on charity or begging, where people from Bangladesh and others meet eye-to-eye not as dependent receivers. (Personal communication, November 8, 2007)

The decision to be for-profit was also driven by concerns of financial sustainability. Quadir knew that he wanted to bring the most advanced technology to some of the most impoverished areas of the world in a way that would be financially sustainable. It was a social development task, something that was usually done by government or international development institutions such as the World Bank. While he was confident that there was a market in rural areas, he counted on the urban clients to fund the expansion to rural areas until they achieved financial sustainability themselves. Therefore, the target market for bracNet was both urban and rural. Pondering his motivations for seeking such a broad market, Quadir explained:

[W]ith the rural clients the social component enters the scene. Building infrastructure and thus developing the country, bracNet can also make profit – so it is a double-edge business. (Personal communication, November 8, 2007)

Partnering for Social Impact

The project seemed very ambitious, but Quadir was looking at BRAC, a large NGO in Bangladesh, as a potential partner that could support his endeavor. BRAC's Executive Director Abdul-Muyeed Chowdhury had a

grasp of technology and immediately understood the vision behind the project. He championed a collaboration and convinced BRAC's management to engage with Quadir. When reflecting on the importance of being connected to BRAC Quadir mused:

Having BRAC as a partner is extremely important. First for business reason[s], it is a very well regarded brand name in the country. It has a reach almost all over Bangladesh. All together it has 2,500 local offices which would help the new venture to deploy its network. It is a clean organization with institutional integrity and transparency. Lastly and most importantly, the vision and mission of gNet partners matched with BRAC. We both wanted to build a financially sustainable and viable enterprise with a social development objective. (Personal communication, November 8, 2007)

Before fully entering into a partnership, however, BRAC's leadership wanted to know more about how Internet connectivity could be rolled out to the rural areas.

Creating Sustainable Social Value: The E-hut Concept

To connect the rural population, Quadir created the concept of Internet-enabled kiosks. He aimed at creating small information and communication technologies centers that could be run by local entrepreneurs in the countryside. He named these centers "e-huts":

"E-huts" are little centers in rural areas that can be compared to KINKOs in the United States. They provide technological solutions for small businesses and local people. (Personal communication, February 12, 2008)

Quadir had the support of Greg Wolff, Vice President of Ricoh Innovation, to develop the first E-hut prototypes. Together with Stanford computer science professor, Terry Winograd, and a design school partnership between Stanford and Berkeley (the "D-school"), they built the "e-huts," which were then tested in the San Francisco Bay Area and in Bangladesh. After a successful test, Khalid and BRAC's management team were confident that these e-huts could work in a rural environment, with the potential to become precursors of a dynamic domestic economy.

The main goal of partnering with BRAC was to bring leapfrog technology, such as broadband Internet, to Bangladesh. bracNet's overall mission, however, would go beyond technological advancement to focus

on empowering people through access to information and entrepreneurship. In the words of Quadir:

My view of empowerment is to provide wealth for the local entrepreneurs and their community. With the e-hut they become part of the productive sector. (Personal communication, February 12, 2008)

In addition, local e-huts have the power to support various rural communities through e-services. The e-huts provide computer training to all interested which in turn will support e-health, e-agriculture, e-government, e-business, and most of all e-learning opportunities. Many of those opportunities will be provided by BRAC directly, which was looking for a convenient way to reach out to even more people. The broadband Internet infrastructure would be crucial to bring higher levels of education, health care, and economic development to the poverty stricken areas.

Financing Business at the Base of the Pyramid

With the local partnership secured, Quadir focused on getting financial partners on board. DEFTA partners, an international Venture Capital firm decided to sign up as lead investor in early 2005. Marubeni Corporation, a Japanese trading conglomerate, which had already invested in Grameen-Phone followed. Calvert, a socially responsible mutual fund based in the United States, as well as Brummer & Partners, a Scandinavian hedge-fund, signed on later. Thirty percent of the shares were bought by a range of private Japanese and American investors, and BRAC itself bought 40% of the shares. It is important to understand the governance implications of this move. An NGO now owned a major share of the business. This way the social goal of bridging the digital divide was structurally supported by the governance and ownership structure. Khalid Quadir calls this a new way of leveraging cross-sectoral partnerships to solve some of the most pressing problems.

By September 2005, Khalid was able to close the first round of financing and bracNet began its communication operations in November 2005 in Dhaka and Chittagong with services to corporate clients and home users. The e-huts were launched in April 2006. By December 2007 its operations covered the three main cities of Bangladesh (Dhaka, Chittagong, and Shylet), where it also serviced part of BRAC's infrastructure of 10 libraries and 20 offices, and established 35 e-huts in Dhaka, Norshingdi,

Gazipur, Comilla, Munshigonj, and some other districts. By May 2008, 50 e-huts had been established and a total of 200 were to be set up by the end of 2008.

Challenges for Business at the Base of the Pyramid

Despite some early successes the rollout was moving far more slowly than expected mainly because of the government collapse. In January 2007 an army backed caretaker government took over after riots erupted that contested the election results. Prior contracts were therefore up for renegotiation. From August 2007 until early 2008 the government effectively halted the addition of wireless communication towers, because it planned a revision of the wireless broadband infrastructure code. bracNet's leadership and its investors had to drastically reconsider their business plan and focus on growing in the existing urban areas.

While operational profitability had been achieved, overall breakeven has not yet been attained. One of the questions was if and how bracNet could influence any of the governmental decisions yet to be made. Especially with regard to the corrupt environment, this seemed a tricky issue. Much of bracNet's success depended on the credibility and trustworthiness of the brand. The reputation of integrity is therefore crucial, and could hurt bracNet in the short term, as other competitors could benefit from bribery. Since BRAC owns 40% of bracNet and their name is a visible part of the venture, any kind of unethical behavior could hurt all of BRAC.

In addition, even though the first round investors had already multiplied their investment on paper (the initial investment was US\$6 million), more funds were needed to secure the rural rollout. To push the rural expansion, new funders were needed. Strategic partners, such as Telecom companies, were also required to push the operational rollout. Bringing on new powerful partners could change that. However, any new partner needed to be in line with the dual value creation strategy, otherwise BRAC could opt out.

How can Social Entrepreneurship Serve as Model for Sustainable Value Creation?

Milton Friedman's paradigm of "the business of business is business," meaning creating the highest shareholder value can only hold when financial

value creation will not exacerbate the sustainability crisis, the inequity crisis, and the trust crisis. Mohammad Yunus claims that the separation of economic and social dimensions has always been nonsensical. The managing partner of McKinsey & Co, Ian Davis, agrees that the continued separation of the social and the economic is strategically unsustainable for big business (Nicholls, 2006, p. 24). Good businesses understand that a proactive reduction of the sustainability, inequity, and trust crises is also good strategy.

While traditionally businesses were responsible for financial value creation, and NGOs or the government for social value creation, social entrepreneurship allows the conceptualization of new value propositions to effectively deal with the sustainability and inequity crises. Shared-value propositions are much more likely to instill public trust, as simple profit maximization is seen as opportunistic (Pirson, 2007). bracNet offers an interesting perspective on how such shared value can be created. bracNet's strategy was informed by societal problems rather than profit maximization. bracNet is still a profitable venture and views profit as an important element for social impact. What is important to note is that profit serves as a means to a social end and not an end in itself.

As Porter and Kramer (2006) say with regard to corporate social responsibility: financial and social value creation need to be aligned to make strategic sense. BracNet serves as a model for companies concerned with strategic corporate social responsibility. As such there are several take aways for managers:

- (1) Business at the base of the pyramid is a viable business option that lends itself very well to strategic corporate responsibility.
- (2) Social entrepreneurship focuses on creating social value and uses financial value creation as its driver. Profit is the means to achieving a higher purpose.
- (3) Creating partnerships that make strategic sense is important. Having BRAC as a partner on board ensures the social mission is fulfilled, while the various other investors bring in their respective expertise. Creating the right partnerships and governance structures is important to keep priorities right. Creating partnerships across the three sectors also seems a very important aspect of creating a dual value business organization.
- (4) Having a higher purpose helps a company generate societal trust that translates into customer preferences. bracNet is a strong market player, because of BRAC's name recognition and trust.

CONCLUSION

As Porter and Kramer (2006) argue, corporations are not responsible for all the world's problems, nor do they have the resources to solve them all; governments and citizens will have to do their share. That, however, does not excuse businesses from acting responsibly or having a co-responsibility to act. In fact, businesses will actively have to address social and environmental needs, not only for the benefit of society but also for their own benefit. Social entrepreneurship and its dual value objective can serve as an interesting model for traditional corporations to create sustainable value and thus fulfill increasing societal expectations (see Sharp Paine, 2003). It also serves as a blueprint for organizations that actively want to serve authentic human needs. By reducing the inequities and decreasing their environmental impact such organizations can become more life-conducive and better enable our system to address issues relevant to human survival.

NOTES

1. Grameen phone has been providing mobile communications in Bangladesh since 1997 and covers nearly 98% of the country's population with its network. The village-phone (VP) program, administered by Grameen Telecom Corporation, enables rural people who normally cannot afford to own a telephone to avail the service while providing the VP operators an opportunity to earn a living.

2. WiMAX is a telecommunications technology that provides wireless transmission of data using various transmission modes, from point-to-multipoint links to portable and fully mobile Internet access. The technology provides up to 72 Mbit/s symmetric broadband speed without the need for cables. The technology is based on the IEEE 802.16 standard (also called Broadband Wireless Access). The name "WiMAX" was created by the WiMAX Forum, which was formed in June 2001 to promote conformity and interoperability of the standard. The forum describes WiMAX as "a standards-based technology enabling the delivery of last mile wireless broadband access as an alternative to cable and DSL" (<http://www.wimax.com/education>, accessed on February 16, 2009).

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SUSTAINABILITY AND IMPACT OF MICROFINANCE INSTITUTIONS: A CASE STUDY OF ACCION SAN DIEGO

Kokila Doshi

ABSTRACT

Microfinance is an effective tool for poverty alleviation. The sustainability of microfinance institutions is essential to create desired social impact. The chapter provides insight into how microfinance organizations create sustainable value, using a case study of ACCION San Diego (ACCION SD). The evolution of and progress of ACCION SD is studied through the lens of Appreciative Intelligence framework. A conceptual framework of the appreciative approach to sustainable microfinance is developed and applied to ACCION SD, describing sustaining cycles of success. ACCION SD emerges as an organization with a vision of possibilities, continuously reframing and expanding what is successful. The Appreciative Intelligence of its leadership and innovative programs has led to competitive advantage and sustainable value. The Appreciative Intelligence of its clients reinforces ACCION SD's sustainability. The case study shows that building upon positive possibilities and ability to reframe are important success factors for both clients and microfinance organizations.

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 275–295

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003019

Microfinance is as an effective tool for poverty alleviation (Burrus, 2005). More than 3,500 microfinance institutions worldwide are changing the lives of millions of small business owners, by meeting their unmet need for credit and economic opportunity. With credit and related support, microentrepreneurs are able to expand their businesses, generate income, build credit, and chart their own path out of poverty. Thus, sustainability built into the microfinance mission is capable of bringing about a generative social change. Sustainability of organizations providing microfinance is essential for achieving desired scales and lasting change in terms of poverty alleviation and wealth creation.

The social innovation of microfinance pioneered by Mohammed Yunus is a classic example of reframing. Traditionally, the poor are viewed as people lacking skills and entrepreneurship and as a disadvantaged group of people who cannot sustain themselves. The microfinance movement challenges this traditional view, considering them as people possessing the power of entrepreneurship and the potential to become productive members of the society.

This chapter provides insight into the issues of sustainability of microfinance organizations in the United States. How do microfinance organizations create sustainable value? What barriers do they face? What kinds of models, processes, and innovations will generate envisioned outcomes? This chapter explores these issues with a case study of ACCION San Diego (SD) – one of the largest and most successful microfinance organizations in California. The study is based on personal interviews with key personnel of ACCION SD and secondary sources of information.

The evolution and progress of ACCION SD is studied using the lens of Appreciative Intelligence framework (Thatchenkery & Metzker, 2006). Although ACCION SD was not formally guided by Appreciative Intelligence principles, one can see these principles unfolding in its programs and initiatives. This chapter develops a conceptual framework for sustainable microfinance, using the construct of Appreciative Intelligence and applies it to studying ACCION SD. It concludes with a discussion of lessons learned from the application.

CREATING SUSTAINABLE VALUE

Sustainability is a multidimensional concept representing both a challenge and an opportunity. Viewing global problems as opportunities, private businesses today extend their reach to embrace a diverse group of

stakeholders and strive to achieve social and environmental goals, while creating value for the shareholders. Recently, the concept of sustainability has been reframed by firms facing such societal issues. Sustainability is seen as an opportunity, not a burden. "A few firms have begun to frame sustainability as a business opportunity, offering avenues for lowering cost and risk, or even growing revenues and market share through innovation" (Hart & Milstein, 2003, p. 56). Sustainable value is the value that is positive for both shareholders and stakeholders. It forms an integral part of firms' core strategy rather than a peripheral problem (Laszlo, 2003, 2008). Laszlo's sustainable value map helps firms assess opportunities and risks associated with stakeholder issues, while developing sustainable business strategies.

The concept of "sustainable value" assumes a different meaning in the context of nonprofit microfinance institutions. Social purpose enterprises pursue a dual bottom line of creating social value and attaining financial sustainability (Foosse & Greenberg, 2008). Social programs are fully embedded in the business activities of microfinance organizations. Social change is the *raison d'être* of such organizations. In the case of a nonprofit microfinance organization, financial performance is seen "not as an end in itself but as a means to achieving social results, namely, welfare improvements for clients" (Rosenberg, 2009, p. 2). Consequently, mission fulfillment becomes the most important criteria to judge these organizations' effectiveness. However, it is difficult to measure social value or social change using standard performance metrics. Traditional measures need to be reengineered to include outcomes in terms of enhancing clients' socio-economic conditions and the social impact attributable to microfinance institutions. Additionally, asset structures of social enterprises must include social capital and intangible assets in the form of knowledge, relationship building, trust, networking, and alliances.

The term sustainability assumes a variety of meanings in the field of microfinance (Pollinger, Outhwaite & Cordero-Guzman, 2007; Edgcomb, Klein, & Thetford, 2007; Rosenberg, 2009; Schreiner, 2000). There are three levels of sustainability: financial sustainability, organizational sustainability, and benefits sustainability. Financial sustainability implies that the operational costs of lending programs are recovered by a combination of earned income and external sources of funding such as grants, subsidies, and donations. However, the long-term objective of microfinance institutions is to achieve self-sufficiency. Organizational sustainability refers to the capabilities to support programs that create social value. For this study, the most important form of sustainability is the sustainability of benefits available to the clients in the form of income generation.

Sustainability implies the potential to continue as a self-generating system in a closed reinforcing loop. It helps microfinance organizations to balance social value with financial goals and reach the scales necessary to achieve the goal of poverty alleviation. It is also a challenge, as it requires innovative strategies and solutions to create both social impact and business value.

METHODOLOGY/APPROACHES

We use the framework of Appreciative Intelligence (Thatchenkery & Metzker, 2006) and the broad principles of Appreciative Inquiry to study how microfinance institutions, particularly ACCION SD, create sustainable value.

The pioneering work of Cooperrider and Srivastva (1987) followed by Cooperrider, Sorenson, Whitney, and Yeager (2001), Cooperrider and Whitney (2005), and Cooperrider, Whitney, and Stavros (2008) provides a new framework of Appreciative Inquiry for positive change and organizational transformation. The Appreciative Inquiry framework shows how organizations can create a positive future focusing on their strengths and a positive core, rather than problem or deficit. The authors Cooperrider and Whitney (2005) describe the strength-based change on a 4D model. Discovering what works and what gives life to the organization is the first step of the inquiry. It relates to appreciating and valuing the “best of what is.” This stage “mobilizes the whole system by engaging all stakeholders in the articulation of strength and best practices” (Cooperrider & Whitney, 2005, p. 16). The Dream Stage is about “what might be” – developing a clear, results-oriented vision in relation to the strengths discovered during the Discovery Stage and to the questions of higher purpose. In the Design Stage of “how can it be,” the organization’s social architecture is designed based on the organization’s positive past and on-grounded examples. The final phase of Destiny – “what will be” – is about strengthening the affirmative capability of the organization to sustain the positive change. Continuous learning, adjusting, and improvisation characterize this phase. The positive core of the organization is interwoven throughout the 4D cycle. The future builds on the best from the past, using positive energy across the whole organization. The Appreciative Inquiry process is thus inclusive and generative. It is a grounded approach linking the future to the present.

Designing attitude allows one to see problems as opportunities. Positive design to achieve desired outcomes requires “reframing” – a key component of Appreciative Intelligence. Thatchenkery and Metzker (2006) developed a

new model, Appreciative Intelligence, which explores the role of the unique mental ability of an individual leading to success and a sustainable future. They define it as the ability to reframe, to perceive the positive inherent and generative potential within the present, and to act purposefully to realize the potential. It is the ability to see the mighty oak in the acorn. There are three components of Appreciative Intelligence:

- *Reframing*: The conscious or unconscious process of changing how one sees what is in the present to a new view of reality that leads to a new outcome.
- *Appreciating the positive*: The “process of selectivity and judgment of something’s positive worth.”
- *Seeing how the future unfolds from the present*: Ability to see possibilities that already exist in the present moment, but that must be revealed, unlocked, or untapped.

Appreciative Intelligence leads to four qualities: persistence, conviction that one’s own actions matter, tolerance for uncertainty, and irrepressible resilience.

Although Appreciative Intelligence is an individual ability, it can influence organizations, as individuals spread their Appreciative Intelligence in the fabric of organizational culture. Appreciative Intelligence – especially the ability to reframe problems as potential opportunities – leads to innovation and offers a competitive advantage leading to sustainable value creation and success. Organizations that understand Appreciative Intelligence lead to organizations that have higher levels of innovation, more motivated employees, greater ability to adapt to change, greater profits, and competitive advantage.

Appreciative Inquiry is an organizational analysis methodology. Appreciative Intelligence is a mental ability of an individual embedded in the multiple intelligence models. Both approaches look for the best in people and organizations, identifying existing strengths to achieve more of the same. Appreciative Intelligence in leaders and stakeholders can accelerate the process of identifying such core values and constructing concrete actions to achieve desired outcomes.

The next section develops a conceptual framework for sustainable value creation by microfinance organizations, using primarily the construct of Appreciative Intelligence. The broad principles of Appreciative Inquiry form the underlying thread for the conceptual framework.

The main reason for selecting the framework of Appreciative Intelligence is the relevance of “reframing” to the social innovation of microfinance. As described earlier, the Appreciative Intelligence constructs links reframing

(and other components) explicitly and systematically to sustainable value and success. The four ensuing qualities of Appreciative Intelligence, while important, are not discussed at length in this chapter.

CONCEPTUAL FRAMEWORK

I saw the angel in the marble and carved until I set him free.

– *Michelangelo*

Like Michelangelo, who had the appreciative capacity to see the towering figure of David “already existing” in the slab of marble, microfinance institutions have demonstrated the ability to see the positive potential of the poor, the entrepreneurial, and other talents already existing in them. The social innovation of microfinance is a classic example of reframing. “Poor are not poor because of inherent reasons and can trade their way to wealth and well-being” (Young, 2006, p. 69).

If there were no constraints on microfinance institutions, what would be the ideal design of helping microbusinesses succeed? What would be the ideal way of bringing them out of poverty?

The social architecture of microfinance organizations puts clients in the center. “Client success” – the business success of clients – is the social mission of microfinance organizations. The success of clients leads to the success of microfinance organizations. The framework highlights the circular processes and cycles of success translating into sustainable change. The cycle of success feeds itself and brings “more of the same.” The organization also grows with reinforcement of the positive and continuous learning. The change is sustained through upward spirals at various levels, translating into competitive advantage and economic value. Such a change magnifies strengths and helps organizations achieve the momentum and energy needed to bring about transformation at a systemic level.

Using an appreciative lens, microfinance organizations reframe the challenge of lending to microentrepreneurs as an opportunity to bring out the best in them. As organizations stretch their strength and provide resources, these entrepreneurs start developing their Appreciative Intelligence and reframing their situation – from despair see hope and from failure find success. They find creative solutions, innovate, expand their businesses, become bankable, generate income, borrow more, further expand their businesses, and succeed. Thus, self-fulfilling prophecies, or cycles of success, are created, leading to asset building and enhanced livelihoods. Intangible benefits such as empowerment and self-esteem also result.

Client success leads to the success of the microfinance organization – creating both economic and social value. The success of a social enterprise is measured in terms of mission fulfillment. As shown in Fig. 1, mission fulfillment implies success in terms of social impact on borrowers and society. Success leads to more success. When microentrepreneurs succeed, they repay their loans and/or borrow more to expand to the next level.

Sustaining Cycles of Success

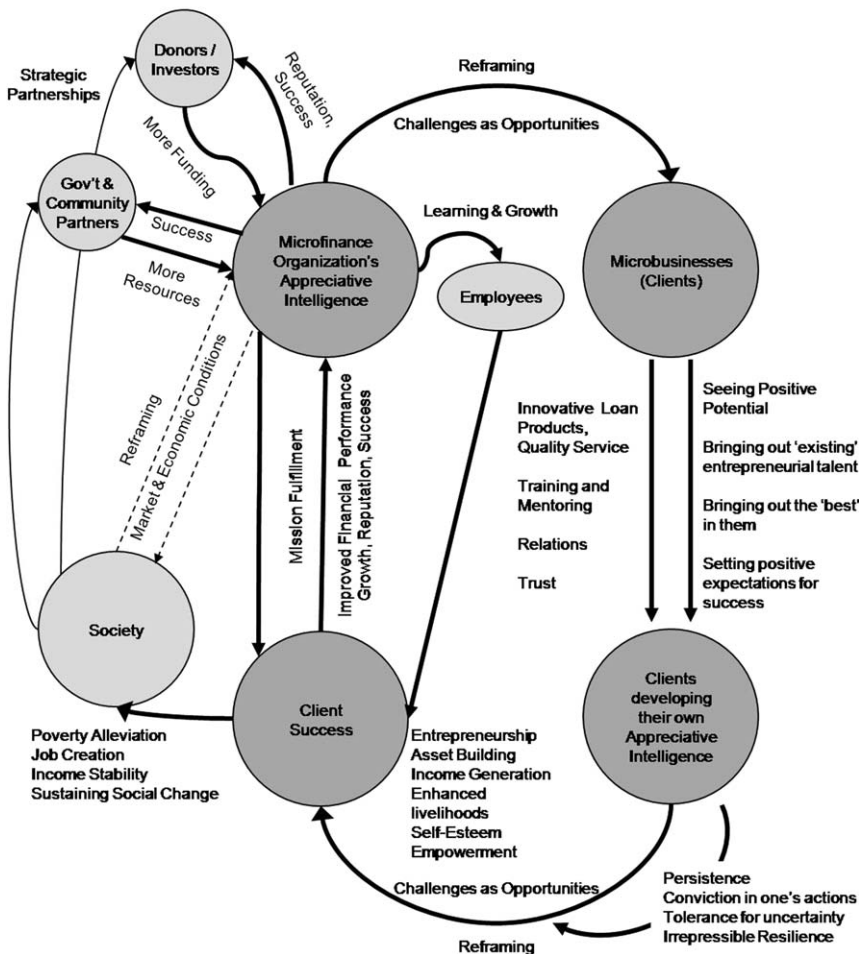


Fig. 1. Appreciative Approach to Sustainable Microfinance.

Measures of financial success such as portfolio quality may improve and delinquency rates may fall. Improved financial performance, growth, and enhanced reputation translate into the success of the organization, which brings more funding and resources from strategic alliances.

The circular process also works at the employee level. From successful experiences with clients, learning and growth can take place. Training and motivating loan officers to do more to “bring out the best” in their clients can create more success. At the societal level, successful clients contribute to more job creation, setting in motion secondary cycles of success bringing more prosperity to the society.

Microfinance institutions influence and are influenced by macroeconomic, social, and cultural environments. These factors also affect donors, banks, government, and other businesses. All the actors may require more reframing and creative solutions.

The appreciative approach provides an expanded vision of helping micro-entrepreneurs succeed by incorporating elements of Appreciative Intelligence and Appreciative Inquiry. The appreciative approach is about “transformation.” Generally, the strategies and approaches based on “performance” focus on numbers, metrics, efficiency measures, product-focused innovations, etc. They acquire new meaning as the appreciative approach shifts the focus to seeing positive potential and bringing out the best in others. The appreciative approach helps organizations look beyond these measures and focus on people, the human system, and achieving the higher purpose of the organization. Appreciative Intelligence and Appreciative Inquiry focus on finding what works and what is positive. Microfinance organizations can invest in “what is working right” and bring about sustaining change.

The conceptual framework developed above is expandable to incorporate internal processes, structure, and infrastructure that help create strategic value. More details and depth can be added, especially at the society level, to study macrolevel impact. Additionally, this framework is consistent with Appreciative Inquiry and positive design elements. In the spirit of Appreciative Inquiry, the conceptual framework is open to continuous learning and improvements. It also shows the transformative power of Appreciative Intelligence reflected in the shift to a new meaning and a new reality. It shifts the focus to visions that serve a higher purpose. To use the analogy of Michelangelo, the focus is not on the “stone which had to be chipped away” but on bringing out “the angel within the stone, waiting to be revealed” (Eagan & Feyerherm, 2005).

What if more policy makers used their appreciative capacity to help microfinance institutions generate more social good? What if more

microfinance institutions used their Appreciative Intelligence to bring out the best in microentrepreneurs? What if more microentrepreneurs enhanced their Appreciative Intelligence to create a virtuous cycle of wealth and well-being?

ACCION SD: TRANSFORMING THE LIVES OF MICROENTREPRENEURS

We are a kind of dream maker. We help people make their dreams come true.

– *Karla Hertzog* (Former Board Member, ACCION SD)

From seamstresses to swap-meet vendors, from restaurants to retail shops, ACCION SD makes a difference in the lives of aspiring microentrepreneurs in San Diego County. ACCION SD is a nonprofit organization and an affiliate licensee of ACCION USA/International. Its mission is “to provide credit and economic opportunity for low to moderate income business owners who lack access to traditional sources of credit. Through business loans and support services, [ACCION SD] strengthens the roots of emerging entrepreneurs enabling them to create social and economic change” (ACCION SD’s Web site). In San Diego County, small businesses comprise 90% of all businesses. ACCION SD creates social value by meeting their unmet need for credit and economic opportunity. It helps microentrepreneurs to strengthen their businesses, stabilize incomes, improve credit scores, and transition to traditional lenders. It also creates intangible value in the form of self-esteem, empowerment, and sustaining social change. As their businesses thrive, they contribute directly to job creation and economic activity and indirectly to the economic revitalization of their communities. To date, ACCION SD has served 1,476 clients with more than 2,500 loans. More than \$14 million are disbursed in loans to microentrepreneurs representing a wide range of occupations (Makee, Correspondence). The loans range from \$300 to \$35,000.

ACCION SD faces the challenge of balancing the social purpose of serving the needs of microentrepreneurs with achieving high-level portfolio quality. Owing to factors such as small enterprise size and small loan size, lack of complementary skills, and wide range of occupations, lending to small business owners is a challenging task. It involves high risks, high costs, and a strong commitment of time. Scalable solutions are difficult to develop. Reducing the risk of default, improving repayment rates, and maintaining program self-sufficiency are important financial goals of ACCION SD. As microbusinesses succeed, they repay their loans, releasing money for

ACCION SD to serve another client and earn interest income. Thus, the sustainability and success of ACCION SD is linked to the sustainability and success of these microbusinesses.

Two performance measures widely used for microfinance organizations are delinquency ratio and self-sufficiency ratio. ACCION SD's delinquency ratio has ranged between 3.38% and 10.2%. A rise in the delinquency ratio during 2006–2007 was mainly due to the recession and housing crisis. The trend has reversed since 2008. The delinquency ratio for 2009 is estimated at 8.45%.

The self-sufficiency ratio measures the extent to which a microfinance institution depends on external funds for sustaining programs. ACCION SD gets approximately 48% of the revenue from their loan operations. A majority of external funding comes from banks (65%) under the Community Reinvestment Act (CRA). Other sources include private donors and funding from government and foundations. ACCION SD's self-sufficiency ratio increased from 38% in 2007 to 52% in 2008 and estimated 54% in 2009. Economic uncertainty and unfavorable market conditions constitute another challenge affecting ACCION SD's clients, donors, and its own ability to create social value and maintain sustainability.

APPRECIATIVE APPROACH TO SUSTAINABLE MICROFINANCE

Although the Appreciative Intelligence framework does not formally guide ACCION SD's evolution and progress, its mission, leadership, and programs exemplify an appreciative approach of reframing and seeing the positive potential in microentrepreneurs. The appreciative approach framework, developed earlier, is applied to show how ACCION SD creates sustainable value and virtuous cycles of success. In the first part, we show how ACCION SD helps clients succeed. The second part describes virtuous cycles of success created in the process of helping microentrepreneurs.

ACCION SD's Client Success Model

The traditional approach to microfinance focuses on loan products, training, and education. However, the use of the appreciative approach broadens it to emphasize the role of Appreciative Intelligence of both the organization and its clients in helping microbusinesses succeed.

Appreciative Intelligence at Organization Level

Organizations that weave the Appreciative Intelligence of their leaders and members into the fabric of organizational culture build their success based on their positive core value and display extraordinary practices and successful results. In keeping with its social mission, ACCION SD places clients in the center of its social architecture. According to Elizabeth Makee, Executive Director, of ACCION SD, “Our borrowers are the heart of our (organizational) culture. We live and breathe their success. We really hold our clients at the heart of our business, because that is why we do what we do. We also share in the entrepreneurial passion and get excited about it. We center our culture around this philosophy in our office” (personal interview).

Reframing to See the Positive Potential

Reframing is critical to success in creating sustainable value. Reframing leads to innovation that offers competitive advantage and creates social value. Microentrepreneurs who do not qualify for traditional loan programs come to ACCION SD seeking alternative financing. They come with challenged or no credit history, lack of collateral or language barriers, “but they still have dreams and ACCION SD helps them develop their dreams into action” (ACCION SD Web site). ACCION SD reframes the challenge of serving these microentrepreneurs as an opportunity to nurture their entrepreneurship and enhance their livelihoods. Instead of seeing failure or lack of credit, ACCION SD sees their positive potential. As reflected in ACCION SD’s mission, not only can these owners be successful in their own business, they also contribute to the society with additional job creation and set in motion a secondary cycle of success. ACCION SD’s clients “expanded their businesses and generated or maintained over 900 employment opportunities in 2008, stabilizing the community during the downturn” (Annual Report, 2008).

Currently, ACCION SD has a base of 350 active clients – more than 68% represent an ethnic minority group and approximately 49% are women. Many of these clients who came to ACCION SD themselves have reframed their own circumstances. Many of them had lost their jobs or had limited job opportunities in Southern California’s competitive market due to lack of education, cultural factors, or language barriers. Reframing their situations, they turned to self-employment as an alternative source of livelihood and

a way out of poverty. They often choose home-based, labor-intensive businesses, requiring low levels of capital and work hard to succeed. By reframing, they see hope, positive possibilities, and success in place of despair and failure.

Thus, ACCION SD's clients are motivated and hard working micro-businesses, displaying self-worth and a high level of Appreciative Intelligence. ACCION SD focuses on their industriousness and entrepreneurial spirit that "already exists," removes barriers to their success, and creates a positive environment in which they can excel.

Seeing How the Future Unfolds from the Present

This component of Appreciative Intelligence is about building the future based on the conditions that "already exist." It is about taking concrete steps to realize the potential possibilities that exist in the present but are untapped.

Programs and initiatives developed by ACCION SD evolved from its strengths, a network of relationships developed over the past 15 years and through continuous learning and improvement. Initial success paves the way for expanding a program at ACCION SD.

PROGRAMS AND INITIATIVES

ACCION SD builds Appreciative Intelligence into the organization through various programs and initiatives. With reframing and focusing on its clients' positive attributes, such as entrepreneurship and determination, ACCION SD has identified strategies to assure client success based on their motto of "Lending, Supporting, and Inspiring." Realizing that money alone may not bring success for emerging entrepreneurs, ACCION SD has developed a comprehensive solution to the problem; Lending, to include innovative loan products tailored to the needs of borrowers; Supporting, with opportunities for training and skill development; and Inspiring, by removing barriers and creating an environment in which they can excel. Lending methodology and other programs of ACCION SD aim at both client success and business value.

Lending

ACCION SD provides an alternative source of finance to the microbusinesses in San Diego County. ACCION SD has developed a

“character-based methodology that enables low-income micro-entrepreneurs to access credit, while maintaining a high quality portfolio.” It offers more flexible requirements than traditional programs accounting for borrowers’ background and repaying capacity. Often, loans provided by ACCION SD prevent the need for microbusinesses to turn to predatory lenders. Different aspects of its lending model, such as pricing, terms, and collateral, balance benefits to their clients with risks for both the clients and the organization.

ACCION SD’s “step lending” model is an example of applying the principle of positive reinforcement. It allows small business owners to start with a small loan, build their business with manageable risk, and get more loans as they learn more and expand their businesses. Thus, initial risk is reduced for both ACCION SD and the borrower. It allows ACCION SD to reach out to poorer businesses with a potential to grow. Business success and timely repayment are rewarded with multiple loans. With success at one level, these entrepreneurs expand their business models and move to the next level with greater confidence. It incorporates the spirit of Appreciative Inquiry and Appreciative Intelligence to expand positive possibilities, realize them, and build the future on what works and what already exists.

Supporting

ACCION SD is primarily a credit-led organization. It believes that most of its clients are well versed in their specific industry, but may lack business skills to manage and grow their businesses. Thus, their client success model also incorporates business development services such as training and mentoring. ACCION SD provides basic assistance in-house and for additional in-depth services, refers them to its business partners such as Small Business Development Center (SBDC), MicroMentor, and Women’s Business Center of California (WBCC). Business training is their core competency. ACCION SD stays focused on its own core competency and leverages the synergies of its partner to help microentrepreneurs succeed.

Inspiring

Removing barriers that keep microentrepreneurs from excelling and creating a supportive environment is a critical step for microfinance organizations. It inspires entrepreneurs to persist and succeed. ACCION SD

has developed many programs for borrowers to turn their dreams into action. In aligning the diverse needs of clients with available resources and expertise, ACCION SD continuously looked for new opportunities to serve and expanded programs that were successful. Continuous improvements, adoption, and enhancements were made to meet the needs of changing target population.

ACCION SD developed a Web of community partnerships to surround their clients with an abundance of resources and to create maximum impact. Partnerships with other micro lenders in the area allow ACCION SD's clients to move from one program to another as their needs change. Immigrants and refugee women coming from challenging environments receive assistance from the Foundation of Women and the International Rescue Committee in partnership with ACCION SD. In-house volunteer programs consisting of seasoned entrepreneurs, community professionals, and students provide mentoring in marketing and finance. ACCION SD's partnership with MicroMentor connects emerging entrepreneurs to business mentors for one-on-one, industry-specific mentoring. According to MicroMentor, clients who use such services have a higher business survival rate (74% as compared with the national rate of 66%) and experience a 63% increase in median sales and 50% increase in household income (MicroMentor Web site).

Technology initiatives such as tracking and monitoring systems, on-line applications, bilingual Web site, and opportunities to advertise on Web site create a supporting environment and remove language, cultural, and educational barriers faced by ethnic groups, immigrants and minorities. Additionally, ACCION SD collaborates with area banks for funding and referrals.

Sustainability of microentrepreneurs is important in creating the desired social impact. ACCION SD's assistance through a variety of organizations helps them survive the initial period, stabilize their cash flows, and sustain their businesses.

Relationship building and communications with clients are highly valued by ACCION SD. Assuring client success is the core of their business strategies. "Increased communications boost success and repayment" (Makee, Presentation). If borrowers have difficulty in making repayments, but stay in communication with ACCION SD, they have an opportunity to avoid defaults.

Recently, ACCION SD developed an innovative initiative called "quarterly call night." Through this program, volunteers and staff, including the Executive Director, make phone calls to reach more than 300 active

clients. It serves the dual purpose of taking steps to avoid default and help clients overcome the specific challenges in stabilizing their businesses. Other nonprofit organizations in the field have also adopted this successful program.

ACCION SD is a pioneer in microfinance. Its leadership is widely recognized by the community, bringing enhanced reputation, legitimacy, and competitive advantage to the organization. A series of awards, such as Community Investment Leader of the Year, demonstrate ACCION SD's commitment to diversity, presence in underserved areas, and dedication to scalable solutions for poverty alleviation. These awards also show how external organizations validate and appreciate positive approaches of ACCION SD.

APPRECIATIVE INTELLIGENCE AT CLIENT LEVEL

In addition to credit and training, Appreciative Intelligence of microentrepreneurs themselves is an important factor in building, stabilizing, and growing their businesses. Standard literature often overlooks this factor. This mental ability, assumed to be present in everyone, may be an even more important factor in that it motivates business owners to bring out the positive potential of their circumstances and guides the use of resources provided. Qualitative evidence is provided here, based on "client stories" from the ACCION SD Annual reports (2001–2008), newsletters, and ACCION SD's Web site.

Inspired by ACCION SD's efforts to bring out the best in microentrepreneurs and to create an environment in which they could excel, these microentrepreneurs start to develop and expand their own Appreciative Intelligence. Like their lender, they also learn to reframe, find creative solutions, and succeed. They are highly motivated to utilize the opportunities presented to them, as they reframe self-employment as a way out of poverty. As a client (identity withheld) in the fitness training business remarked, "It is important to take life into your own hands, to think positively and to use the many resources around in order to become successful" (ACCION SD Web site).

ACCION SD's clients represent a diverse group, covering women, ethnic minorities, immigrants, and refugees who struggle as they face the volatile economy. Consciously or unconsciously, they show the four ensuing qualities of Appreciative Intelligence: persistence, conviction that one's own actions matter, tolerance for uncertainty, and irrepressible resilience.

Stories of entrepreneurs – who expanded their businesses despite the language barriers, made persistent efforts to move to the next level (home-based business to storefront or single business to franchises), came from challenging environments and earned entrepreneurial awards and national recognition, rescued their businesses from spiraling debt, and repaired their credit – attest to the presence of these qualities. Ultimately, success has to come from within, so the belief that one’s own actions matter is very important. Many clients displayed this quality. A business owner who successfully completed a big construction project with encouragement and multiple loans from ACCION SD stated that “ACCION cracked the door open and that is what a lot of people need. Once the door is open, you can do the rest” (Annual Report, 2001). Expectations of success set by ACCION SD lead to self-fulfilling prophecies.

Thus, complementing their own Appreciative Intelligence with the resources provided by ACCION SD enabled the microentrepreneurs to survive and succeed in their endeavors, despite challenging circumstances. In terms of the metaphor of Michelangelo, this added dimension at the client level highlights an important difference; not only that Michelangelo works to bring out the “David” that already exists, but also, here in the field of microfinance, “David” is highly motivated to come out.

This new perspective emerging from the study has important implications for organizational strategies. Current practices focus on providing tools such as loan and training resources. However, appreciative capacity of the borrowers is an important factor in client success.

Sustaining Cycles of Success

Appreciative Intelligence of ACCION SD and that of its clients result in client success, which in turn creates several cycles of success. Microfinance offers tangible and intangible benefits to the entrepreneurs. As shown in Fig. 1, client success is defined in terms of asset building, income generation, enhanced livelihoods, increased self-esteem, and empowerment. Successful business owners set in motion a secondary cycle of success at the society level. As they thrive, they hire more people, generate more income and help alleviate poverty in the long run.

According to ACCION SD, client success implies “loan repayment, increased credit scores, transitioning to traditional lender, increased business knowledge, increased income and business revenue, and job creation” (Makee, Correspondence). While ACCION SD is in the process of collecting

direct data on social impact, indirect evidence from Citygroup Foundation's research study is available. Approximately 94% of the businesses surveyed were still in business two years after receiving assistance from ACCION SD, 75% showed increase in household income, and 60% reduction in number of people in poverty (Annual report, 2007). According to the internal company data, of the clients who received loans from ACCION SD in 2008, more than 92% of them are still in business in 2009 and are making payments on the loan or have paid the loan in full.

The most noteworthy aspect of client success is the ability to "give back" to the community, remove barriers for others, and help others to succeed while enhancing their own Appreciative Intelligence. Client stories provide instances in which small businesses donate to environmental foundations or ethnic organizations. Empathizing with struggling small business owners, they offer free training and help with business development skills. Thus, ACCION SD clients perpetuate the cycle of reframing, seeing positive potential and bringing out the best in others.

The success of microentrepreneurs leads to success of ACCION SD. Several virtuous cycles of success are generated at the organization level. Successful clients improve performance of financial organizations through repayments, improved portfolio quality, and reduced risk. All of these factors lead to a better image, enhanced reputation, and competitive advantage. Such success is viewed favorably by ACCION SD's strategic alliances – private donors, foundations, banks, and government – that provide financial resources to ACCION SD. With increased funding and resources, ACCION SD initiates another cycle of helping more entrepreneurs and sustaining benefits.

Microfinance institutions interact with society in many different ways, as illustrated in Chart 1. Uncertainty and adverse macroeconomic conditions are among the biggest challenges faced by ACCION SD. During the 2008 recession, as small businesses faced financial difficulties, ACCION SD faced rising delinquency. In looking at this challenge, ACCION SD saw an opportunity to offer a "personal touch to our clients through boosting outreach and offering additional resources/training that could help them get through this tough time and help ACCION SD decrease delinquency" (Makee, correspondence). Reframing the situation helped ACCION SD develop creative solutions in the areas of post-loan assistance, client contact, and increased referrals assuring continuity of client operations and resultant incomes. ACCION SD experienced a 40% growth in its portfolio of active clients as well.

Like its clients, ACCION SD is also affected by the volatile economy and uncertainty. With changing economic conditions, the funding landscape is

also changing. ACCION SD reframed the situation and based on its existing strengths, fiscal discipline, and community relations, it expanded the funding base to include new foundations and individual donations. Such diversification of funding sources helps ACCION SD to reduce risk, increase its outreach, and sustain the programs benefiting clients.

Circular processes also exist at the employee level. Loan officers and staff “live and breathe client success.” They know the life stories of their clients, and respond to their changing needs by restructuring and reinforcing accountability. Loan officers enhance their field experiences with the training opportunities provided by ACCION SD at the organizational and national levels. By empowering staff members to do their job better, ACCION SD creates a unique base of knowledge capital, providing a competitive edge. Thus, employee training and reinforcing loop of learning and growth create both business value and social impact.

As defined earlier, sustainable value refers to the creation of business value while achieving the organization’s social purpose. Sustainable value creation is embedded in the appreciative approach framework. Various programs structured by ACCION SD include an element of sustainable value. ACCION SD’s lending methodology balances the benefits for the microentrepreneurs with the risks involved both for the borrowers and for the organization. Training and mentoring, while helping clients succeed, also leads to higher business survival rates and improved repayments. Relation building and client communications help clients with their specific needs and reduce the risk of failure. This strategy also creates a “differentiated” service unique to ACCION SD – which is hard for competitors to duplicate. Success brings more success. For ACCION SD, enhanced reputation, legitimacy, a community-validated record of service, and positive practices bring more opportunities for funding and resources to expand its outreach and to serve more entrepreneurs.

These sustaining cycles of success at various levels perpetuate success and ultimately bring about a systemic change – a change that “transforms people’s lives, creating healthy vibrant communities filled with spirited entrepreneurs who build their incomes, produce jobs and live out their dreams” (Annual Report, 2008).

CONCLUSION

This chapter developed a framework of appreciative approach to sustainable microfinance using the construct of Appreciative Intelligence and

applied it to ACCION SD – one of the most successful microfinance institutions in the state of California.

The appreciative approach provides an expanded vision of systemic change. It expands the sustainable value framework by incorporating Appreciative Intelligence as a success factor and shifts focus to the human system. An appreciative mindset helps organizations move beyond “performance” and brings out their “transformative” power. When Appreciative Intelligence guides an organization, its innovations, strategies, tactics, and processes acquire a new meaning and sense of purpose.

Evaluating ACCION SD’s progress through an appreciative lens showed that the Appreciative Intelligence and reframing, both at organizational level and client level is an important success factor in creating sustainable value. ACCION SD emerged as an organization with a vision of possibilities, continuously looking for new opportunities and expanding what was successful. Providing credit and training to clients acquired a new meaning of bringing out the best in their clients and awakened their Appreciative Intelligence. Although most of the evidence is based on unintentional Appreciative Intelligence demonstrated by the organization, a systematic and formal inquiry to find the positive core will be helpful. Appreciative Intelligence of microentrepreneurs, overlooked in the literature, is found to be an important dimension of sustainable value in this study. In-depth interviews of borrowers would provide insight into how they enhance their Appreciative Intelligence.

The case study demonstrates that microfinance organizations must make Appreciative Intelligence its guiding vision and identify the people with Appreciative Intelligence to lead the change. They must also explore the mechanisms through which their vision spreads into the fabric of organizational culture. As the appreciative approach chart shows, virtuous cycles of success feed themselves and continue magnifying the change. Microfinance organizations must start with and stay focused on their mission and put clients in the center.

Developing an ability to adapt to change is critical for microfinance institutions. Uncertainty and volatile economic conditions have much deeper implications for these institutions through spiraling effect on hundreds of their clients, banks and donors. Appreciative Intelligence can be used as a tool helping borrowers and organizations reframe and adapt to changing business environment. A valuable perspective can be gained from an in-depth study of the four ensuing qualities – persistence, conviction that one’s own actions matter, tolerance for uncertainty, and irrepressible resilience.

ACCION SD has shown a successful record of understanding the needs of clients, mobilizing resources to create an environment in which micro-entrepreneurs can succeed. It has consistently designed successful positive strategies based on what works. With 15 years of experience under its belt, ACCION SD can take a leadership role in helping other struggling microfinance organizations by reframing and expanding positive possibilities. Such collaborations among microfinance organizations will help them reach out to more microentrepreneurs, reduce risks and costs, and develop scalable solutions for poverty alleviation.

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POSITIVE DESIGN AND CONSTRUCTION OF MECHANISMS FOR THE SUSTAINABLE DEVELOPMENT OF MICROENTERPRISES IN AFRICA

Carol Dalglish and Judy Matthews

ABSTRACT

Enterprise development and its contribution to societal and economic outcomes are well known. However, limited research into microenterprises and the practices of microfinance and microcredit in developing countries has been carried out. This chapter presents the findings of research based on six years of engagement with the microentrepreneurs of Beira in Mozambique and suggests a model for responsible and sustainable support for enterprise development in developing economies. Building on semistructured interviews, observation, and participatory action research, this research project articulates a new approach supportive of enterprise development, as a process of cocreation with local people and based on sustainability principles. These findings are part of a longitudinal study of the successes and failures of small enterprises and their impact on social and economic activity.

Positive Design and Appreciative Construction: From Sustainable Development to Sustainable Value

Advances in Appreciative Inquiry, Volume 3, 297–317

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003020

INTRODUCTION

Small and microenterprises play a significant part in most economies. However, in developing countries, encouragement of these enterprises has often been planned and implemented from a poverty alleviation perspective rather than as entrepreneurial activities and growing businesses (Mead & Liedholm, 1998; Toye, 1993). Microentrepreneurship and microfinancing offer possibilities not only for poverty alleviation but for the encouragement of economic growth in developing economies. Access to financial resources is not the only issue faced by microentrepreneurs, who often lack education, training, support, and links to national and international intellectual networks. Sustainability of support mechanisms is essential, and the balance between philanthropy and self-determination are critical issues.

The purpose of this chapter is to present the findings of research based on six years of engagement with the microentrepreneurs of Beira in Mozambique and suggest a model for responsible and sustainable support for enterprise development in developing economies. The research question that we are addressing is: what factors need to be considered and what resources are necessary to encourage and sustain enterprise development in a developing country?

The chapter reviews existing microfinance and microcredit practices and presents the findings from a longitudinal research study with small enterprise owners in a developing country. We suggest a new approach to establish and support enterprises with financial and knowledge resources for sustainable business practices. This model attempts to address the multiple issues involved and offers the hope for more sustainable practices, not only in Mozambique where the model has been developed but in other parts of the developing world as well.

Developing these new alternatives began with a group of local people in Mozambique who are committed to providing assistance to each other. With outside assistance this commitment has grown into a clearly defined organization, *Despertaí Mozambique*. *Despertaí Mozambique* is a project of the Global Development Group that provides microcredit and associated training services to start-up microentrepreneurs – those who wish to move from “roadside” trading to more established businesses and those who wish to grow to a stage where they can employ others. *Despertaí Mozambique* was designed as a project to support microentrepreneurs in Beira in conjunction with the entrepreneurs themselves. The goal of the research is to develop a stable ongoing process to fund and develop the capacity of the

local organization to plan, establish, and support local enterprises with external funding, local initiative, and capacity building.

To generate an operational design for the support of enterprise development in developing countries, an analysis of the literature related to the challenges facing those who encourage and support microentrepreneurship was undertaken. The gaps identified in the literature and the findings from the research project are used to design a model of support for microentrepreneurs to lead to local strategies for enterprise sustainability.

The chapter is structured as follows. First, we review literature on microcredit and microenterprises, identifying the issues raised by current approaches and the forms of resources that enterprises need for sustainability. Second, we provide background information about the context of this research project and describe the methods used to collect the primary data in the research project. Third, we present the findings of our research and design and develop processes to ensure sustainability. Finally, we present the current design of the program and suggestions for further research.

MICROCREDIT AND MICROENTERPRISES

Much of the literature dealing with microentrepreneurship and microcredit comes from the international development agencies and reviews of microfinance institutions. Their perspective is generally one of poverty alleviation rather than enterprise development and, as early as 1947, microenterprise development programs have been a popular poverty alleviation strategy in developing nations (McPherson, 1996). Microcredit institutions, following the example of the Grameen Bank in Bangladesh, attempt to overcome some of the hurdles faced by the microentrepreneur in these countries (Rutherford, 2000; Mwenda & Muuka, 2004).

Microenterprises have been identified as playing a significant role along with other strategies in poverty alleviation (Cuong, 2008; Quadir, 2003; Rugimbana & Spring, 2009; Weber, 2002). Hudon (2009), reflecting the work of the Grameen Bank, explores access to credit as a human right.

However, there is little in the literature to suggest that as a strategy in its own right, microfinance assists entrepreneurs. Vast sums of money are now made available through a variety of microcredit schemes, yet there appears to be little empirical evidence of the impact of this financing for business growth or the factors that might influence the growth and sustainability of those enterprises that start life as “survival” enterprises (Brett, 2006;

Mayoux, 1999; Sievers & Vandenberg, 2007). In fact, research based on Global Entrepreneurship Monitor (GEM) data suggests an inverse relationship between microentrepreneurship and economic development in developing countries (Naude, Gries, Wood, & Meintjies, 2008; van Stel, Carree, & Thurik, 2005). Such conflicting findings suggest that microcredit needs to be examined to identify its strengths and weaknesses in terms of how to improve the process of support for microentrepreneurs and how to avoid the unanticipated consequences of the current models. The key people in evaluating the impact of microcredit on the economic well-being of any community are those in the community itself. A “one size fits all” model may not take into account critical local issues and circumstances.

Microcredit was developed as a tool for poverty alleviation, alongside a range of other tools used largely by the nongovernment organization (NGO) sector. The role of NGOs with the poor does not occur in a vacuum. It occurs most frequently where the state has failed or withdrawn from the welfare of its citizens, shifting responsibility increasingly to private charities or the private sector (Karim, 2008). The work of Muhammad Yunus and the Grameen Bank in Bangladesh provided a model that caught the imagination of the time. As Karim (2008) states:

the Grameen Bank has made significant contribution to the practice of commercial banking. It has made credit available to the poor who were denied commercial loans due to lack of physical collateral. It has demonstrated through its 98% rate of recovery that the poor are not defaulters. It has taught women the importance of managing money and keeping account of expenditure.

Microcredit differs significantly from other targeted poverty reduction strategies in that it is embedded in a commercial framework (Weber, 2002). Because microcredit institutions seek long-term viability as commercial organizations, interest rates are often very high by Western standards – even those applied to unsecured loans. In different locations across the world, organizations that have as their objective poverty alleviation charge the poor anything between 20% and 60% interest per annum (Brett, 2006; Byiers, Rand, Tarp, & Bentzen, 2009; Maimbo, 2002; Rugimbana & Spring, 2009; Yunus, 1994). The justifications for this are that the rates are less than traditional money lenders (where those exist) and they cover the cost of servicing small loans across large distances. A manager from the Grameen Bank stated, “Grameen Bank is a business not a charity” (Karim, 2008). This raises the issue as to whether a Western commercial model is either practical or appropriate in very poor contexts.

In addition to high interest rates, money is usually lent on a group basis, that is, the group is liable for the debts of other members of the group (Brett, 2006; Cuong, 2008; Karim, 2008; Weber, 2002). Other members cannot access credit if a member of their group defaults. “Shame” is the collateral as Karim (2008) puts it. There is some evidence that the interest on the loans can become a significant burden to the borrower, and often others in the family are called upon to assist with repayments. This is a result of high interest rates, short repayment times, and the fact that other assistance, such as business planning and training, are not undertaken to ensure that the microcredit is being used effectively to increase income generation.

The cost of microcredit and the related risk of over-indebtedness are potential dangers (Chamlee-Wright, 2005; Hudon, 2009). The very poor have limited ability to assume risk and very poor borrowers may become worse off as a result of business failure. Microfinance should not lead to the situation being made worse. If the poor are not to be excluded from the opportunity to improve their own situation, the key challenge appears to be to design efficient mechanisms to bring financial resources within the reach of the very poor (Hudon, 2009) – microcredit alone may not be the solution.

These demanding conditions have a negative impact on another outcome that many microcredit lenders aspire to: the empowerment of women (Brett, 2006; Mayoux, 1999; Quadir, 2003; Rugimbana & Spring, 2009). Many microcredit services are directed specifically at women with the intent to improve their status within their communities and in recognition of the fact that they will use increased resources to assist their families. Brett (2006) uses the voices of the women in the title of his paper drawn from research in South America: “We sacrifice and eat less.”

Brett is not the only researcher to have identified this issue. Buckley (1997), Cuong (2008), Orlando and Pollack (2000), and Wilburn (2009) all identify these consequences as a significant issue in developing countries across the world. There is another unfortunate impact: the providers themselves – the NGOs – become sources of employment in countries that have few opportunities. This puts pressure on the staff to deliver against the criteria that will secure their jobs: large numbers of borrowers and high repayment rates. Delays with repayments have led in some circumstances to ill treatment of borrowers and high levels of competition between the organizations that are supposedly there to help the poor. The issue becomes the sustainability of the NGO rather than the microenterprises.

So how do these microcredit institutions show such good results? First, they measure two things: number of people served and the repayment rate (Buckley, 1997; Karim, 2008; Weber, 2002). On both counts the results

are impressive. What are largely unmeasured are outcomes – the growth of businesses or the elevation of borrowers from poverty. Measuring these types of outcomes is both complex and expensive and does not fit comfortably in a commercial model.

Much less has been written about microcredit as a tool of enterprise development for assisting poor entrepreneurs to make the transition from hand-to-mouth economic activities to a sustainable business (Chamlee-Wright, 2005; Cross, 1998). However, access to financial resources may not in itself address the challenges facing the very poor entrepreneur any more than it does in the developed world. The challenges of an often hostile environment, limited access to education and training, continuous health challenges, and poor support and infrastructure, make the success and growth of enterprises in developing economies difficult (Naude et al., 2008; Sachs, 2004; van Stel et al., 2005). Our experience with local entrepreneurs in Mozambique found that education and training are as critical as access to financial resources.

Two important issues documented in the literature relate to human capital development: capacity building and training (Rugimbana & Spring, 2009; Sievers & Vandenberg, 2007; Cross, 1998); and the importance of the local voice – any project needs to align with local needs and cultural traditions as well as reflect respect for local participants by encouraging their ownership (Chamlee-Wright, 2005; Pless & Maak, 2009; Wilburn, 2009; Hudon, 2009).

The design of any project to encourage entrepreneurship should be culturally appropriate and encompass local support and expertise. Understanding the particular cultural context is critically important (IEG, 2008). Chamlee-Wright (2005) recognizes that tapping into the knowledge embedded within local social institutions lowers transaction costs, saves time, and helps anticipate and avoid pitfalls. Embedded within local systems is a wealth of local knowledge regarding an individual's savings capacity, credit worthiness, business history, and insurability (Yunus, 1994). Sorros (2007) has identified this as a key factor in the success of his foundations around the world.

It is likely that the networks of local expertise among the poor are insufficient initially to support entrepreneurs. Building capacity becomes important so that responsibilities are clearly outlined and individuals are provided with the skills required for effectiveness. It is critically important that local people are involved in the decision-making and that a problem-solving attitude is built (Yunus, 1994). This may require tapping into extended, even international knowledge networks to work with local people to adapt best practice (Chamlee-Wright, 2005).

Microcredit has become a global strategy despite warnings from the World Bank (Pless & Maak, 2009) that microcredit alone may not result in poverty reduction. There also appears to be no evidence that it promotes entrepreneurship. The skeptics might suggest that the reason microfinance has become so successful at the institutional level is because it fits within an internationally adopted economic philosophy and transfers most of the risk and transaction costs to the borrowers and away from the institution (Brett, 2006; Karim, 2008). Key issues identified in research on microcredit for enterprise development are summarized in Table 1.

The issue of operational sustainability, profitability, and the use of donor funds are particularly challenging and directly influence the issue of design. Establishing an effective operation takes time (Yunus, 1994). It also requires commitment, expertise, and the support of the local community. Without these elements any organization may fail to reach its target borrowers, find the money is misspent, or find that there is no local interest in using the service at all.

Generally the literature does not relate to the borrowers as entrepreneurs with business ideas, but poor people who need to survive. Yet even in this context, research into the impact of microcredit is lacking (Buckley, 1997; Mayoux, 1999; Sievers & Vandenberg, 2007; Wilburn, 2009). It is unclear how the injection of funds encourages the start-up or growth of a business and what the actual business and social outcomes are. Without this understanding it is difficult to evaluate whether microfinance and the support mechanisms around it have a significant role to play in economic development.

Table 1. Key Issues in Research on Microcredit for Enterprise Development.

Microcredit embedded in a commercial framework
High interest rates
Social collateral to guarantee repayment
Negative outcomes
Potential for over-indebtedness
Reduced standard of living
Disempowerment of women
Hostile environment, poor support and infrastructure, basic services
Importance of human capacity building
Importance of respect for local knowledge and culture
Active local participation in decision-making
Lack of research on impact of microcredit

The measurements identified in much of the literature are of inputs and outputs – not outcomes. This indicates a gap in the literature. What exactly do microentrepreneurs need if they are to transition out of poverty and develop sustainable businesses? Do support groups help in this process? In countries with very low literacy levels, what role does education play? How best can the local community be brought together to identify their immediate needs in their journey to economic sustainability? Little appears to be known about the outcomes of combining financial and peer support with capacity building and how these might interact to develop sustainable enterprises or how such support can itself be sustainable. Entrepreneurship in developing countries is arguably the least studied economic and social phenomenon in the world today (Naude et al., 2008).

DESIGNING ENTERPRISE RESOURCES FOR SUSTAINABILITY

The review of relevant literature therefore suggests that the design of any project to encourage entrepreneurship should be culturally appropriate and encompass local support and expertise. Understanding the particular cultural context is critically important (IEG, 2008). The inclusion of local knowledge and support allows individuals to make productive use of the private and local knowledge to which they have access, valuing their perspective and creating ownership. Recognizing and valuing local expertise is critical for access to those networks and to local participation and ownership. Chamlee-Wright (2005) recognizes that tapping into the knowledge embedded within local social institutions lowers transaction costs, saves time, and helps anticipate and avoid pitfalls. However, it is likely that the local expertise is insufficient initially to support entrepreneurs. Building capacity becomes important so that responsibilities are clearly outlined and individuals are provided with the skills they require to be effective. It is critically important that local people are involved in the decision-making and that a problem-solving attitude is built (Yunus, 1994). This may require tapping into the extended knowledge network to work with local people and to adapt best practice to ensure that the local administrators are competent and are also able to access not only their local networks but those of the wider community to help solve their problems.

Resource sustainability is critical if microenterprises are to grow. The traditional philanthropic model for funding microenterprises leaves local

communities dependent on the priorities of donors that may not always be consistent with those of the community. Long-term sustainability requires a move to a model that broadens the base of both economic and intellectual resources, that builds capacity as well as providing “start-up” funding through mechanisms such as microcredit (Elkington & Hartigan, 2008).

One of the critical issues in working in developing economies is that of transparency (IEG, 2008). If concerns about corruption are to be overcome, it must be clear what the lending policies are, the criteria for lending, and how the monitoring of loans is undertaken. Such measures are as important for credibility at the local level as it is for donors.

Positive design applies the processes of design thinking (Brown, 2008; Lawson, 1997) to creating solutions to any problem or new situations. From a design perspective, everyone is a designer (Lawson, 1997) with the potential to create new ways of working and new solutions. A positive design approach is similar to appreciative inquiry – the cooperative search for the best in people, their organizations, and the world around them. Positive design for sustainable enterprise development includes capturing the preferred futures of individuals and their communities, responding to the community’s priorities, investigating individual problems and solutions, and encouraging agency and active involvement in goal setting, with ongoing consultation and codevelopment of solutions (Matthews, 2009). Recognizing the importance of experimentation, we have moved beyond existing forms of resourcing to prototype new ways of working that provide continuity of financial and intellectual support for local initiatives. We next describe the context of the research, the research methods and findings, and the process used to develop a sustainable model of support for entrepreneurs in Beira, the second largest city of Mozambique, a country poor even by African standards.

MOZAMBIQUE: CONTEXT OF RESEARCH

Mozambique lies along the Indian Ocean sea border of Southern Africa and is characterized by mountainous inland zones with a coastal plain. Mozambique is among the poorest countries in the world with a per capita GDP of US\$210 in 2002 (World Bank, 2003). This is largely attributable to a history of both human and natural destruction.

The Portuguese “colonized” Mozambique in the 15th century. The independence movement that began in the 1960s led to independence in 1975. The Portuguese departed virtually overnight, leaving the country

lacking skilled professionals and infrastructure. Frelimo (the Mozambique Liberation Front) turned to the governments of the Soviet Union and East Germany for help since the country was nearly bankrupt by the early 1980s. This instability was compounded by the disapproval of the then Rhodesia and South Africa who supported and trained rebels in Mozambique, most notably Renamo, leading to civil war. Renamo's aim was the wholesale destruction of Mozambique's communication infrastructure and the eventual overthrow of the government. While they did not succeed with the second aim, they did destroy most of Mozambique's infrastructure, including roads and railways (Dana, 1996).

In 1983 drought and famine struck the country and Frelimo opened up Mozambique to the West to receive food aid. After more than 15 years of civil war, a peace treaty was signed in 1992, with official elections held in 1994. Mozambique now has an elected government for the first time in its history and has since conducted two general elections. There are still power struggles between the two main political parties that are based on the opposing factions during the war (THSRC, 2002).

The Mozambique Government has fulfilled most of the promises on economic reform made to the multilaterals to qualify for debt relief, including "demobbing" a large part of the armed forces and releasing largely unskilled young men into an almost nonexistent employment market. A reduction in the debt burden, donor support, and rising government revenues are helping to pay for the infrastructure investment that could enable the country to experience a high level of growth for a long time to come (Ford, 2004).

Most local Mozambiquans equated democracy with an improvement in material conditions. Unfortunately, the economic gains thus far seem to benefit a relatively small middle class concentrated in Maputo, the capital, while the rest of the population has had to adjust to increases in the cost of living and little change in the rudimentary public and social infrastructure (THSRC, 2002). By the late 1990s the economy began sustained growth but social inequality has grown as well (Pfeiffer, 2004).

The country had an estimated population of just more than 19 million in 2006 (Mozambiquean Government, 2006) with an estimated population growth of only 1.4% in 2005 as a result of high infant mortality rates and a life expectancy of around 40 years. The illiteracy rate in the adult population is high with only 60% of children attending primary school, 8% attending secondary school, and 2% attending higher education; however, this picture is slowly changing for the better. Agriculture is still the basis of living for the majority (80%) who live on livestock farming production. Good road and

rail services are almost nonexistent as are power, communication, and sanitation infrastructure (Dalglish, 2007).

Some of the challenges facing the people, the government, and the entrepreneurs of Mozambique include low educational standards, high levels of unemployment, low productivity of household farming, weak development of infrastructure, bureaucratized government, corruption, and a very high mortality rate from curable diseases. Many deaths are a result of diseases such as malaria, tuberculosis, cholera, leprosy, and, more recently, HIV aids. Over the first four years of the new century, annual average growth of GDP was about 8% and the absolute poverty level has dropped from 69% in 1997 to 54.5% in 2002; however, the positive results of this are not yet reflected in the actual life of much of the population (worldbank.org/wbsite/external/countries/africa/mozambique).

Apart from government assistance, there appear to be two movements to help the poor of Mozambique. By 2001, there were 145 foreign NGOs and 465 national NGOs operating in the country. At the same time Pentecostals and the Pentecostal-influenced Zionist and Apostolic African Independent Churches moved in to offer social support. Pentecostal-influenced independent churches have seen a growth in membership from around 10% to nearly 50% of the poor urban population – the population within which the model was developed and is being implemented. The popularity of the church movements and their almost complete dissociation from the world of foreign aid suggests shortcomings in NGO models in gaining the trust and confidence of poor communities (Pfeiffer, 2004). It would appear that despite the presence of NGOs many of the poor are alienated from the world of commerce and foreign aid. Participant observation in numerous church activities has revealed a profound and sustained commitment to collective well-being (Dalglish, 2007; Pfeiffer, 2004).

Beira, in the province of Sofala, where the research was undertaken and where the proposed model will be implemented, suffered greatly during the civil war. Today, it has the dubious reputation of being Mozambique's poorest province (Republic of Mozambique [RoZ], 2003). As an economy Beira is struggling; its physical infrastructure appears broken and its people appear to have few opportunities to progress. Commercial districts have shut down as traders shift business to a smaller scale appropriate for a poor nation.

In Beira, the thriving informal sector is based rather narrowly on retail trade in consumption goods, agro-processing, and services like repairs and hairdressing (THSRC, 2002). While economic performance has improved across the country, the benefits are confined to a relatively small number of

individuals. Interventions, such as improving access to financial services for lower income people in a manner acceptable to them, are extremely important and yet few exist.

RESEARCH DESIGN AND METHODS

Multiple methods of semistructured interviews and participant observation were used in the city of Beira, Mozambique to collect data and to provide an insight into the difficulties faced by microentrepreneurs. A longitudinal study, based on semistructured interviews with 12 microentrepreneurs was undertaken in Beira in 2004, 2006, and 2007. Each entrepreneur selected for this study had received microcredit to start or grow what would be considered a “survival” enterprise in the informal sector. The research was conducted using informal individual and small group interviews through a local interpreter. Three waves of interviews were carried out to provide insights into what had changed in the business and the mind of the entrepreneur (Dalglish, 2008).

This approach provided an ongoing fine-grained picture of a group of entrepreneurs who were successfully growing their enterprises and were extending their view of what it was to be successful and beginning to access technology and services. These small business owners were using their increased resources to improve their living conditions, access education for their children or themselves and plan for the future. The qualitative nature of the research has the strength of providing rich data directly from the microentrepreneurs, providing an opportunity to explore with the entrepreneurs changes to their businesses, their attitudes, and aspirations, and whether motivation had moved beyond “survival.”

These participative methods involving the entrepreneurs helped to shift the focus from a deficit approach that focuses on survival to one that acknowledges people’s resources and agency in the pursuit of business success and the well-being of their families and community. This exploratory qualitative research provides contextual information to explain particular outcomes and ensure that the metrics used in international reports such as the “dollar a day” metric have some meaning (Camfield, Crivello, & Woodhead, 2009). These methods also offer the opportunity of generating new information about the way in which people see the world (Hammersley & Atkinson, 1995) and enable models for delivery of services to be developed in ways that meet the specific needs of the local community. The circumstances under which entrepreneurs in developing economies

operate can appear impossible to those who have very different experiences of business (Van Donge, 2008).

The data collection faced a number of significant constraints. Interviewing through an interpreter raises a range of issues regardless of the accuracy and experience of the interpreter. The interviewer was an outsider with extremely limited cultural knowledge and no local language. The interviewees were friendly and welcoming, though not used to talking about themselves and their ventures. The interviewees are unlikely to have shared all of their views. Despite these issues, the negative impact of these factors was not apparent. The third round of interviews in 2007 led to much more open discussion. There is an indication that it took this long for the entrepreneurs and the interpreter to believe sufficiently in the interest of the interviewer. After the first two visits, the researcher was welcomed as one of the family, conversations became less formal and more general issues were discussed. This familiarity added a depth of insight into the reality of the lives of these entrepreneurs and their families, with interesting implications for research that is undertaken by outsiders in developing countries.

To improve cultural understanding and to develop trust, one of the authors engaged in participant observation, spending four separate weeks with the community under study. During this time, activities in addition to the semistructured interviews included presenting seminars, dining with a number of different families, attending local church meetings, and meeting with local groups of small entrepreneurs to discuss their aspirations and the constraints they faced.

Participating in this way adds credibility to the observations in a way that describing cultural phenomenon on the basis of documents cannot. Such a process is a way of “doing justice to the voice of the people” (Knibbe & Versteeg, 2008). This voice is often lacking in the large studies of microfinance as a way of poverty alleviation, which reflect the cultural norms of an often alien culture. It is important to acknowledge that this type of fieldwork cannot be entirely objective and the presence of the researcher is changing and adding to what is actually happening. Desjarlais (1997) advocates that human experience should be central to the research agenda, and in this method, the voice of those receiving assistance is placed at the centre of the design. The literature provides the international frame within which that individual experience sits and allows learning from other contexts to inform local concerns.

Findings from this research regarding the nature of the businesses and their response to some of the questions are that the majority of entrepreneurs interviewed are survival entrepreneurs. In addition, many

local business people had plans to move beyond this stage and some had already taken action on these plans (Grosh & Somolekae, 1996). These business owners already believe themselves to be successful but still have aspirations to grow further. One of the respondents identified the need for more knowledge to be able to grow and that the lack of access to external ideas may slowdown the rate of innovation. The lack of good infrastructure and access to finance may slowdown and restrict their growth potential (Haynes, Seawright, & Giauque, 2000).

The development process involving the local people began in 2007, during the third visit to Beira by the researcher. A meeting was convened in Beira, supported by a number of pastors of local Pentecostal churches which provided credibility, and around 40 local business people and community and church leaders attended. These community members expressed a willingness to work toward the establishment of an NGO that would provide microloans to small businesses who did not have access to other sources of funding. This group elected a management committee, nominated the people they wished to run the organization once it was established, and voted on an appropriate name (Despertaí Mozambique). This group then became the local focal point for the development of a sustainable support system for local aspiring entrepreneurs and the body accountable for the operation of the organization in Mozambique.

Following this initiative in 2007–2008, a similar management committee called Awaken Mozambique was established in Brisbane, Australia, to raise the necessary resources for the Mozambique organization. These resources include not only financial resources for direct funding of the organization and provide finance for loans for the entrepreneurs, but also processes for sharing intellectual resources through training and the working together with people from outside the local area. The emphasis of the Awaken Mozambique committee was strongly focused on the training and support of those who borrowed money. One of the ways in which people from a “developed” economy can help is by providing intellectual input and by sharing their knowledge with the local people. Fig. 1 illustrates the relationship between the two organizations.

To assist with the capacity building of Despertaí Mozambique, the processes and policies have been written in Australia and then discussed and modified in Beira. The local Despertaí Mozambique management committee is well aware of the issue of perceived corruption and the importance of transparency and equity in the allocation of loans. Once funding for loans is made available to the Despertaí Mozambique committee, the committee is required to report monthly to the committee of Awaken Mozambique

Despertai Mozambique (DM) - Local Association – People working together; Potential for ongoing support, encouragement, skills, training for local people. Uses external funds to set up micro-loans for members and to pay wages of Administrator; no interest loans

Awaken Mozambique (AM) - Western association
Focus – Encourage enterprise initiatives;
Resource organizational component of program

- Resource flows
- Provide initial financial resources for funding enterprise projects
- Provide or resource training, education, networks

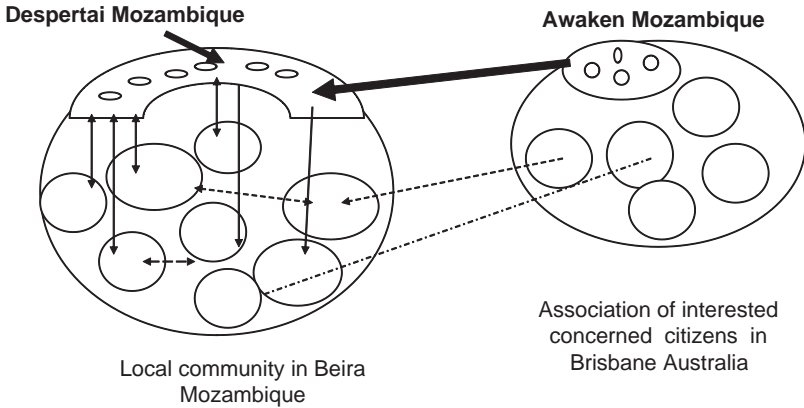


Fig. 1. Collaboration between Organizations.

with their recommendations for funding and the reasons for these recommendations. The in-country committee will make decisions about loans and debt collection with loan criteria, the ability, and willingness to repay. The presence of community leaders on the committee will act as an incentive for repayment, though some default must be expected in extreme circumstances. The fact that recipients may also know the donor in Australia who has provided the loan may also reduce the risk of default. The history and ongoing nature of this research project is presented in Fig. 2.

PROGRAM DESIGN

The program has been designed to build on initial early funding to make the program sustainable in the long term. Donor money will be used to employ local people to manage the project and to provide microloans. The repayment of microloans will go into an investment fund. The fund will be used for loans to new borrowers and the interest from the investment fund can be used to support the ongoing management of the project. Over a period of five years the capital in this investment fund will grow and the interest can be used to support the local employees, making the project

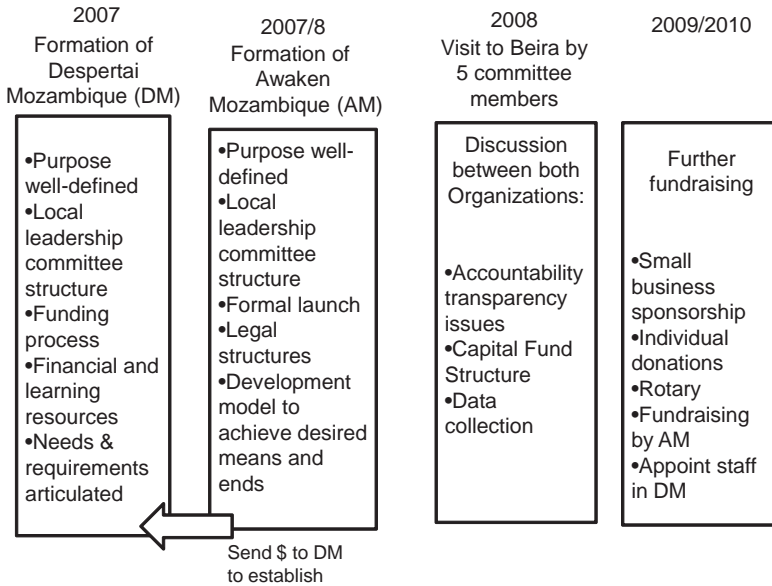


Fig. 2. Historical Development of Research Project.

much more sustainable. This fund may also provide the basis for ongoing microloans. The local management committee is already seeking ways for the program to generate money to support the microloan process and as their capacity grows this element of the program is likely to become viable. A summary of these processes is found in Fig. 3.

The process is designed to be transparent and decision-making is open to members of both committees in Australia and Mozambique. The in-country management committee employs four people who identify potential borrowers, provide the necessary training, and will collect repayments and ensure that all necessary financial and other reporting is undertaken. The management committee will make the decisions about who receives funding and make recommendations regarding these applicants to the Australian committee for funding.

The stated aims of the project are:

- To provide financial and training support to microenterprises in Mozambique in a sustainable manner. The goal is to stimulate economic activity and provide the resources to individuals necessary to ensure the education and health of their children – Mozambique's next generation.

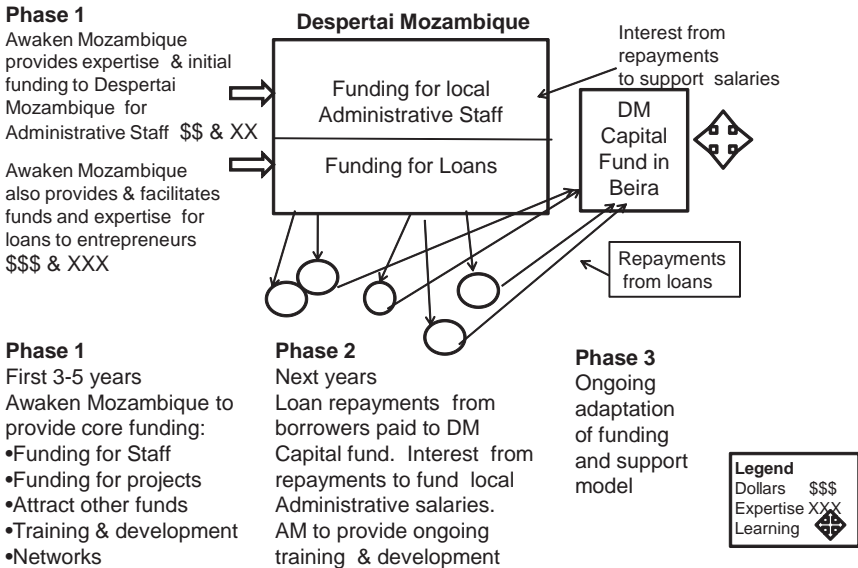


Fig. 3. Planned Phased Operating Model and Research Context.

- To build capacity by developing expertise in association management, microfinance, and enterprise development. Access to education and training as been very limited in Mozambique. In addition, many of today’s adults spent their formative years as refugees in neighboring countries. Developing the abilities and competence of individuals will counter these issues, enabling the local association to continue to provide support and direction in the long term.
- To develop international linkages between entrepreneurs in Mozambique and the developed world. The goal is to provide a two-way knowledge transfer and will greatly increase international understanding. Internet technology now makes this both achievable and affordable.
- To collect data and facilitate research into the process of enterprise start-up and growth in a developing economy.

Training and development is an integral part of the development process. Training includes initial business planning for participants and will include mandatory training for loan recipients during the period of their repayment. Relating to the specific needs of those involved, it will be conducted by the in-country staff. Regular training will also be provided to the coordinating

staff by volunteers from relevant institutions overseas. These volunteers will have a significant role in broadening networks and will also be encouraged to provide more general training to heighten awareness in Beira of new ideas and opportunities available. Links have already been made with a number of local education and training providers and these services will be accessed as appropriate.

Internet technology makes international communication much easier and inexpensive and, subject to connectivity in Mozambique, will be used to link Mozambique entrepreneurs to their Australian sponsors, thereby directly connecting the local network to a larger network. Awaken Mozambique's Web site is undergoing development to allow interactivity and is continuously improving its interactions with the Australian community supporters.

With so little known about the process of enterprise growth in developing economies, both committees are dedicated to undertake research as part of the loan and support process. The dissemination of findings and an enhanced understanding of the role of entrepreneurship in poverty alleviation and community development will be of interest to many researchers and NGOs, and this chapter is an early illustration of this commitment.

One of the contributions of this research is that it investigates a situation of dire need in a developing country and proposes a new sustainable model for enterprise development. This model recognizes that money alone is not sufficient and that an entirely commercial model of operation is not useful to the very poor. It offers a model that increases the self efficacy of all those involved, puts the decisions in the hands of local people, and allows international expertise to be used to strengthen local knowledge and expertise. This approach also values research and the feedback that this will provide to ensure continuous improvement as the circumstances of the local community change.

CONCLUSIONS AND FUTURE RESEARCH

The need for enterprise development and its contribution to societal and economic outcomes has been clearly identified and the benefits and limitations of existing programs of financial support have been elaborated. This research project is seeking to develop responsible and sustainable support for microentrepreneurs in developing countries. Building on semistructured interviews, observation, and participatory action research,

this research project has articulated a new approach supportive of enterprise development. Designed as a process of cocreation with local people and based on sustainability principles, ongoing research is being carried out as a pilot study with a local association in one city in Mozambique.

The goals of the external organization described in this study include the establishment and development of individual or joint enterprises such as creating sustainable financial support mechanisms for economic development, linking of networks, and creating a base for ongoing research. The activities undertaken by the external organization include increasing access to information and ongoing social support; providing and sharing financial and social resources, training, and planning; generating new resources such as money, ideas, and networks; and recycling financial resources for loans and reinvestment of funds and commitment.

As with many design processes, the implementation of these ideas will indicate which processes meet the expectations of the local people and which aspects may continue to evolve over time as more enterprises are funded, business owners develop more confidence, and networks of enterprises develop. Further research regarding the successes and failures of small enterprises, their impact on economic activity, and the sustainability of local support mechanisms will be carried out to develop increased understanding of enterprise development in an African context.

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CREATING MACRO ACTORS FOR SUSTAINABLE DEVELOPMENT

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ABSTRACT

Research indicates that many innovations and social change initiatives fail to achieve their goals. One of the reasons they fail is because leaders lack an effective methodology that effectively engages support, addresses resistance, and integrates and aligns the innovation and change with the existing culture and social structure of the organization. Actor-network theory (ANT) provides a methodology for helping leaders understand and execute their role in leading innovations and social change as well as the role of networks in changing culture and social structure to support innovation and change. This chapter examines ANT as a leadership strategy for creating macro actors (powerful networks) to foster innovation and social change and describes a case study at a major research university of how ANT was used, in conjunction with the scientific method and appreciative inquiry, to enhance sustainable development.

Every organization exists within an ecological system from which it draws its resources and delivers its products and services. To survive, the business

**Positive Design and Appreciative Construction: From Sustainable
Development to Sustainable Value**

Advances in Appreciative Inquiry, Volume 3, 319–337

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ISSN: 1475-9152/doi:10.1108/S1475-9152(2010)0000003021

must not only replenish and renew its capital, but it must also sustain (or at least not harm) the ecological system within which it operates. Sustainability is a multidimensional construct referring to the environmental, social, and economic characteristics that promote longevity, self-renewal, and well-being of the organization and the ecological system. The performance of sustainable organizations strongly depends on the people who populate them; the leaders that lead them; and the cultures, structures, and technologies that are created to effect a sustainable exchange with the environment. How organizations maximize economic performance while preserving the environment, and maintaining the health and well-being of their people is a major challenge for leadership today. It is essential that leaders take a proactive role in fostering sustainable development.

Many recent organizational initiatives to foster sustainable development consisting of projects, conferences, symposia, and workshops often provide momentary enlightenment and some reinforcement but generally fail to realize a significant and sustained impact because they lack a systematic and recursive methodology that effectively engages and mobilizes stakeholder networks into a potent force for sustainable development. Actor-network theory (ANT) provides an approach that can help leaders engage, organize, and mobilize stakeholders, resources, and technologies for sustainable development.

ANT is a discourse-analytical and process-based approach to innovation and change developed by Michel Callon and Bruno Latour (1981). As a network theory, it does not reduce the explanation of change to a few structural, cultural, technological, physical, or human variables but rather focuses on the interaction of all human and nonhuman variables within a broad heterogeneous network to effect innovation and social change. As a methodology ANT incorporates a wide range of actors and variables into a systematic process for creating change that bridges levels of analysis and offers a more inclusive description and explanation of network and change dynamics than typical single-dimensional approaches.

Leaders in organizations today can have a greater impact in effecting sustainable development if they understand the content and configuration of the physical, social, and technological networks in which they reside. However, understanding these networks is only one piece of the puzzle; understanding how to utilize these networks to effect change is the ultimate goal. One method of accomplishing this is the creation or utilization of macro actors to influence and shape the environment. A macro actor is a metaphor for an expanded network of influence where many actors act as one (Callon & Latour, 1981, p. 279). A macro actor is strong when it has been successful in mobilizing certain micro actors in favor of its project,

whether an innovation or social change, or as, in the present case, a sustainable development process (Callon, 1986). The macro actor links other actors and stabilizes this set of links or relations by “black-boxing” them. Various kinds of elements can be placed in black boxes – thoughts, habits, forces, objects, technologies, etc. “A black box contains that which no longer needs to be considered, those things whose contents have become a matter of indifference” (Callon & Latour, 1981, p. 285). For example, laws are black boxes. Though they may have been heavily debated and disagreed on at some point, once settled and enacted they are taken as a given and not considered an option when making decisions. Once something has been black-boxed, it can be considered to be accepted as a norm. Therefore, a central goal of leaders relative to sustainable development is to create a *macro actor* that can help to put a black box around sustainable development. When this happens, many micro actors – departments, projects, educational programs, community organizations, lobbyists, regulatory agencies, etc. – will speak with one voice and act in a concert to effect sustainable development.

This chapter examines the major concepts and strategies of ANT, describes an application of ANT to a sustainability project at a prominent U.S. research university and illustrates an application of the scientific method and appreciative inquiry (AI) for creating social capital and macro actors for sustainable development.

ACTOR-NETWORK THEORY

The early formulations of ANT come from two French sociologists, Bruno Latour and Michel Callon (Callon, 1986; Latour, 1987; Latour, 1996), who analyzed three case studies of failed technology innovations in France: an electric car, an integrated telephone network, and a computer-driven commuter rail system. In each case, the failure was attributed to a top-down management approach in which leaders failed to take into account the interests and the resistance of parties involved in the implementation of the innovations. After an extensive analysis the authors concluded that successful innovation and social change requires the support of extensive networks and mediators within those networks to actively support and implement the change while overcoming the resistance. The lesson drawn from these studies was that to be successful in initiating change, leaders must understand the context and networks within which change takes place and must build on the interests of others, and minimize the resistance to the change within those networks. Without strategic alliances and support from

a broad network a common conception of social reality cannot be forged to elicit the support needed to effect social change.

The major concepts of ANT are actor-networks or actants, translation, punctualization, and black boxes. The actor-network or actant is a single entity in which an actant, for example, a leader of a sustainable development initiative, is both an actor and a network. The individual is embedded and acts within a broader set of networks that accompany him or her wherever he/she goes. These networks include human and nonhuman entities including resources, equipment, software, colleagues, etc. Actants construct new relationships with other actants through a process of translation. Translation is the ability of actants to keep other actants involved in the project by translating and interpreting their interests, needs, values, and efforts into their own language. Translation occurs through communication and interaction between actants. The engagement of many actants may result in punctualization in which a new entity or event (person, position, process, product, or outcome) emanates from the interaction and has the ability to recursively generate and reproduce itself. Examples of punctualization are a new person to fill a position with responsibility for translating other peoples' needs and interests into the project; a formalized negotiation process for resolving differences in viewpoints; and task forces, project teams, or new organizations to further the objectives of the project. Macro actors are created when "many elements are made to act (and speak) as one" (Latour, 1987, p. 131), i.e., when a new position, process, or task force comes together and becomes a stabilized network that influences others effectively. Black boxes can form around issues, objects, people, structures, processes, and technologies, etc. Networks are anchored and made more stable and resilient by black boxes. Macro actors may be individuals or groups who speak and act as one within the black box. The relationship of these concepts is illustrated in Fig. 1.

Translation is the essence of ANT. It is a process in which a leader aligns the interests of many and creates a chain of translators that generate a black box or larger network of allies which support and promote the change. One way to accomplish this is for leaders to marshal all the evidence and engage their allies in regular interactions and meetings to negotiate interests and resolve differences from which emerge reconfigured networks and communities. Leaders create communities of practice comprised of many networks

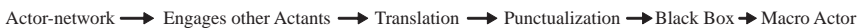


Fig. 1. Key Concepts of ANT.

which then construct and shape social reality (Fox, 2000). The important thing is that if an actor-network wants to grow, it must enlist and mobilize all kinds of heterogeneous links with other actor-networks and nonhuman (physical) entities that enlarge and increase the durability of the network. Increases in the interaction within the broader network may result in the emergence of a community of practice and an increase in the sum of knowledge, power, competency, and capability embodied in the network – all of which can help effect change. Translation involves the alignment of hopes, interests, needs, issues, and options into common language and a set of propositions comprising an agreement of the actants. This alignment and common agreement is the goal of translation.

Successful translation implies the acceptance of each side's "otherness." When actants acknowledge a difference in their interests or hopes in relation to each other, both parties are aiming to convince the other to move to, or align with, their interests and needs. The desire to influence the other does not necessarily mean to change the other's hopes or interests, but only to understand the other's interests and needs and find a way to connect, align, and support those needs. If, in the process of interaction, both parties can acknowledge, respect, and affirm each other's hopes, issues, and options in the present moment, a genuine alignment can occur.

There are several methods for facilitating translation through which actor-networks emerge and become macro actors, including the scientific method and AI.

The Scientific Method

The scientific method may be viewed as an action learning process in which leaders and experts engage individuals, teams, and organizations through asking questions and creating dialogue and learning around common challenges facing the organization. Through observation and experimentation, designing models and theories to predict outcomes, and developing and implementing action plans, individuals and groups are able to innovate and achieve amazing results. The dialogue generated through the scientific method can lead to creative insights, new knowledge, innovation, stronger relationships, improved teamwork, and increased understanding, motivation, and commitment. The outcomes of the scientific method are not only "facts," theories, and findings but also the networks and black boxes that effect innovation and social change. It is the network emanating from the method itself, and the social capital embodied therein, that creates macro actors to foster sustainable development. For example, a group of students

conducting a scientific investigation of sustainable development not only learn about the importance of sustainable development and how it can be attained, but also emerge from the research as a network of advocates for sustainable development. In other words, through the process of investigating and learning about the subject they may become a group of committed individuals speaking with one voice in fostering sustainable development in their current roles and throughout their careers.

Appreciative Inquiry

AI is another method for engaging individuals, groups, and organizations in a process of inquiry and developing social capital for sustainable development. Rather than focusing on problems as in the scientific method, AI is based on an inquiry into and an appreciation of strengths and assets of individuals, groups, and organizations. It is a method of innovation and social change that seeks out the best of “what is” (past/present) to help ignite the collective imagination of “what could be” (future). With its roots in Positive Psychology and Positive Organizational Scholarship, AI operates on the premise that positive change is created when we study and discuss what we want more of, not what we want less of.¹

APPLICATION OF ANT AT A LARGE RESEARCH UNIVERSITY

In 2005, the Provost of a large private research university commissioned an interdisciplinary task force to review the state of the university’s contribution to sustainable development. The task force delivered its final report in March 2006 recommending an institute and program for sustainability focusing on energy, environment, and economic development. The Center for a Sustainable Future (CSF) was established in 2007 as a vehicle to coordinate, leverage, and amplify a broad base of research contributions in the area of sustainable development.

The mission of the CSF is to create real-world solutions to sustainability problems by coordinating and leveraging a broad base of sustainability research and fostering partnerships with external collaborators from government, industry, foundations, NGOs, and other organizations. The center focuses on three interconnected themes – energy, environment, and economic development – and was established to catalyze innovative research

and collaborative partnerships within and among a wide range of disciplines, including agriculture, business, economics, engineering, medicine, policy, physical sciences, life sciences, and social sciences.

Despite having more than 300 principal investigators actively involved in sustainability research across the university, the University is not widely recognized as a “big player” in the area of sustainable development. Like many large research universities, its strengths are its breadth and depth across disciplines and its decentralized nature, which allows individual faculty to pursue their own ideas and interests. Decentralization, however, is also a weakness as many faculty members are often unaware of what others are doing, even in similar areas. Without a mechanism for collaboration and communication, faculty efforts do not garner the support and funding necessary to move to the next level of development. But solving big problems requires assembling a critical mass. Building that assembly – connecting the efforts of faculty across the university – is a large challenge. Thus, a central purpose of the Center is to provide faculty a place to cultivate innovative ideas and collaborate with each other and with external partners.

Six strategies were defined to accomplish the mission:

1. use competitive \$100,000 seed grants to catalyze new team research,
2. vigorously pursue external partnerships and investment,
3. proactively communicate with internal and external stakeholders,
4. stimulate innovative educational approaches for undergraduate and graduate students,
5. engage the public in understanding the nature of sustainability, and
6. assist in hiring and retaining key faculty.

To assist the Center in accomplishing its mission, a graduate class in applied organizational development was engaged to explore the application of ANT theory to sustainable development. The purpose of the class project was to support the CSF in three areas:

Research: document research underway in energy, environment, and economic development; identify collaborations; and map research networks.

Education: identify current courses and programs connected to sustainability and design an educational curriculum for intramural students and external stakeholders.

Marketing: identify possible partnerships and design a marketing plan for communicating and developing relationships and expanding and strengthening networks with internal and external stakeholders.

The class was organized into three project teams to accomplish the foregoing tasks. The overall goal was to establish the class and CSF as a macro actor.

Application of ANT Methodology and Results

Fourteen students from the schools of business and industrial and labor relations were informed on the first day of class that they would be engaged in an action research and learning process to investigate sustainable development for the CSF. As part of the orientation they were asked to complete a pre-test assessing their commitment to sustainability. Three of the 14 students showed a moderate commitment to sustainable development. The others indicated a stronger commitment to business profitability than sustainability.

In the first assignment students were asked to read Elisabeth Ryland's *Gaia Rising: A Jungian Look at Environmental Consciousness and Sustainable Organizations* (Wirtenberg, Russell, & Lipsky, 2008). The other assignments included reading the text *The Sustainable Enterprise Fieldbook* by Wirtenberg, Russell, and Lipsky (2008) and a paper on the methodology of ANT (Sidle & Warzynski, 2003). Finally, they were organized into project teams and introduced to the scientific method and AI and were instructed to investigate the respective areas of research, education, and marketing and to prepare a report and presentation for the director and board of the CSF. Based on the concept of ANT and the methods outlined above, the class implemented the methodology outlined in Fig. 2 to create a macro actor for sustainable development:

1. Identify and describe the purpose, needs, and benefits of the CSF and sustainable development.
2. Develop a list of key individuals and stakeholders and define their interests, needs, and requirements.
3. Map relationships of individuals and networks to each other and identify centrality of relationships, strong and weak ties, structural holes, and sources of resistance.
4. Engage individuals and networks by inscribing their interests and needs into visions, objectives, plans, and roles.
5. Enroll, mobilize, empower, and coordinate individuals, groups, and networks as translators, i.e., create chains of translators, and minimize resistance.

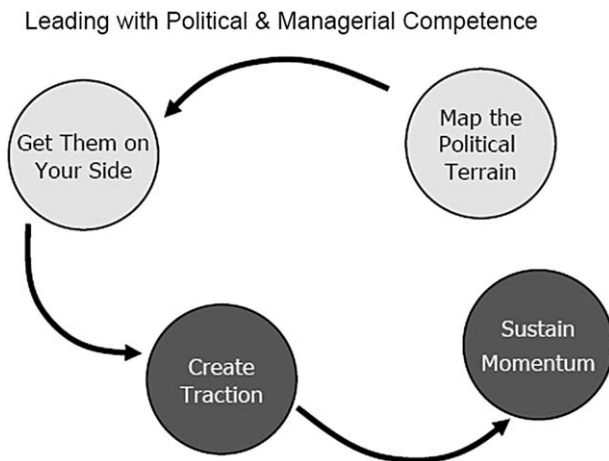


Fig. 2. ANT Methodology. Source: From Sidle and Warzynski (2003); also see McBride (2000). Graphic adapted from Bachrach (2006).

6. Develop and implement strategies for expansion and continuance of the network by engaging new actants and creating centers of translation, black boxes, and macro actors (see McBride, 2000; Sidle & Warzynski, 2003).

DISCUSSION

The following is an application and discussion of the ANT methodology to the CSF project.

Identify and Describe the Purpose, Needs, and Benefits of the CSF and Sustainable Development

A multilevel approach is needed for translating sustainable development to the rest of the university. The director of the CSF and other formal leaders developed the key mission and goals for the Center, as well as benefits for stakeholders at the university. The change must be framed in a context of benefit for the faculty and staff or else it faces the threat of immediate resistance. While the details of the change come from top-down, it is imperative for the message to be “translated” or else the change will not

resonate. To ensure the best translation, members of the board of CSF and informal leaders, such as the executive director, and the support staff can be used to communicate and execute the change throughout the bottom of the organization. These informal leaders, while not holding a position of authority over their fellow employees, do hold a position of trust, which will go far in promoting a change effort. Of course, these informal leaders cannot drive the change alone, so the CEO and formal leaders need not only to shape the change but also to continually provide support to help facilitate the informal leaders' change efforts.

The students working in three groups conducted interviews with the director, board members, and staff. They also interviewed a cross section of faculty primary investigators (PIs) who have research projects on sustainable development to identify their perceptions. The results of these interviews translate and align the interests, needs, and values to the purpose and benefits of the Center. At the same time, in the course of the interviews, the concept of sustainable development was clarified, instantiated, and reinforced in the hearts and minds of the students.

*Develop a List of Key Actor-Networks or Stakeholders
and Define their Interests, Needs, and Requirements*

The university has a notoriously decentralized campus. While this has certain advantages for PIs to be entrepreneurial, it also hinders efforts for interdisciplinary research and creates gaps in the social networks and consequentially the knowledge networks. The study completed by the research team was meant as a preliminary effort to map some of these networks and, in the process, provide useful information in terms of future research to encourage stronger and wider networks and collaboration.

Considering time and resource limitations of the study, the students needed to limit the scope of the study to one that would be informative but manageable within the semester. Consequently, the students decided to conduct a social networking study of the principal investigators of the 35 proposals that were submitted in response to the solicitations of CSF's Academic Venture Fund (AVF). This had the advantage of focusing on up-to-date projects and work relations, as well as of being closely related to CSF's actions.

With the detailed analysis of individual PI's relationship with colleagues doing research in the area of sustainability, this project team

found that several PIs seem to be more collaborative in their research than the other PIs. The study team identified the top eight most recognized PIs, with whom other PIs had identified as collaborators. The profile showed that each individual seems to have different profile of collaborations. Some projects seem to have more potential for cross-thematic research.

Networking by projects illustrates the fact that most PIs are involved only in one project. Most PI teams were represented as clusters centered on their own project (though relations between PIs themselves may, to some extent, mitigate the amount of isolation found among the 35 projects). However, some PIs were involved in different projects and could act as bridges. A follow-up study could investigate how these interrelated projects were selected and formed and might consider using this knowledge to develop criteria for the next round of grants.

The findings of this project team gave CSF some new and useful perspectives of the current network status in the sustainability research community. The results of the study can be used to identify the boundaries of the sustainability research community, map the knowledge and research domain, identify gaps, and encourage PIs to connect and/or increase collaboration, and the subsequent sharing of findings to grow the community and field of knowledge.

To better understand interdisciplinary research opportunities and collaborations within the sustainability field, the research team recommended mapping the entire research network within the university, including post docs and instructors who teach sustainability-related courses, and internal partners such as researchers from different labs or on-campus organizations, and PhD students or teaching assistants who are working with these stakeholders. The research team also recommended an analysis of stakeholders outside the university, including external partners such as corporations and related organizations. Other possible participants in the network include former colleagues of the current participants. It was argued that the mapping research and research collaborations throughout the university – within and across colleges – would provide the university with valuable information for understanding how categories and fields of knowledge are changing, what are the knowledge gaps, and how innovation and change occurs within the university. With a detailed picture of how the university looks, leaders would be able to create a more sustainable environment for students, professors, researchers, and other stakeholders.

*Map Relationships of Actor-Networks and Identify
Centrality of Relationships, Strong and Weak Ties,
Structural Holes, and Sources of Resistance*

The actor-networks involved in this study included the CSF director and executive director, staff, and board; faculty PIs, students, and university administration, including the president, provost, and vice-provost of research; funding agencies; potential partners; and donors. These individuals and groups were analyzed to identify and target formal and informal leaders for participation in interviews, focus groups, meetings, education programs, and broader participation and communication in the project. In addition to this group, many other important stakeholders are putting increasing pressure on businesses and other organizations to become more environmentally and socially sustainable. Such stakeholders include customers, who often make their purchasing decisions based upon their perceptions of the companies that provide products and services. The public has become very concerned about sustainability in the last few years, particularly in light of the climate change effects and level of poverty and disease we have been experiencing on a global scale. Customers want the companies they buy from to contribute positively to sustainable globalization and are likely to patronize those who do over those who do not. In this way, sustainability has a clear effect on business and profitability.

*Engage Key Actor-Networks and Inscribe
Their Interests into Visions, Plans, and Roles*

The execution of this step involved adapting the AI Summit for team building and strategic planning with the CSF board (Laszlo & Cooperrider, 2008).

*Enroll, Mobilize, Empower, and Coordinate
Actor-Networks as Translators, i.e., Create Chains
of Translators, and Minimize Resistance*

The education team addressed the structural issue of decentralization and fragmentation along disciplinary and functional lines by communicating and translating across boundaries. Specifically, this student project team looked at ways to promote more cross-collaboration and interdisciplinary

study of sustainability among undergraduate students by developing a formalized “sustainability” curriculum. Based on the research findings, which included both primary as well as secondary analysis, an interdisciplinary minor in sustainability for university undergraduate students, facilitated by the CSF, was recommended. The curriculum for the minor included a lecture series at the beginning of the program as well as an active/experiential learning component toward the latter part of the program. The curriculum also included interdisciplinary elective courses organized under three focus areas of CSF: environment, energy, and economic development.

To get a better sense of what form the undergraduate sustainability curriculum should take both primary and secondary research was conducted. For secondary research, other universities working in the area of sustainability were researched and benchmarked. For primary research, findings were collected from undergraduate students through the use of focus group sessions and an online survey. The current sustainability courses being offered were also inventoried and audited.

According to the National Wildlife Federation’s Campus Environment 2008 Report Card, which surveyed 667 colleges and universities, there has been an increase since 2001 in the percentage of university leaders who cite benefits from their sustainability programs. The most commonly cited benefit (cited by 76% of university leaders responding to the survey) is that environmental or sustainability programs fit the culture and values of the campus. University leaders also say that sustainability programs are good for public relations (66%), are cost-effective (62%), help recruit students (35%), and help recruit faculty or staff (27%). Specifically, university leaders are more likely now than in 2001 to say that the culture and values of the campus (76% vs. 63%), public relations (66% vs. 47%), cost-effectiveness (62% vs. 40%), and student-recruitment potential (35% vs. 17%) have encouraged them to implement environmental or sustainability programs.

Translating the major findings from the research into the interests and needs of students, the education team recommended changes to the curriculum, including a minor in sustainability. Linking the minor with CSF would align students interested in hands-on work with professors in need of research assistants. Also, by being the base for this minor, CSF could establish itself as a central hub for sustainability-related news, courses, and opportunities. For example, it was recommended that a “Student Section” where the course catalog and information on the minor can be held as well as opportunities for students to get more involved with ongoing sustainability efforts be hosted on the CSF Web site.

While many universities had courses in sustainability, very few had a comprehensive minor or major in the subject. By having an interdisciplinary minor in sustainability, the university could attract more talented high-school students with an interest in sustainability. In fact more than 88% of the students surveyed thought having a sustainability minor would make the university more attractive. With the increased interest in sustainability globally, a minor in the curriculum would provide a comparative and competitive advantage. At the same time, a minor would help stimulate and excel the current sustainability research ongoing at the university. With a clear link to students, the minor could help incorporate research into education and students into research. By having the minor be interdisciplinary, it would give any student on campus the chance to incorporate sustainability into their main focus of study and would help foster a more flexible approach to the education of undergraduate students.

By hosting the minor, the CSF could realize an increase in resources for research. With this minor, professors working on projects could incorporate students as assistants and create more opportunities for grants. Also, a minor tied to the CSF would give the center a great marketing platform and avenue for promoting the reputation and image of the university. Moreover, it would create greater visibility on campus for the CSF and increase its face value among students, faculty, and staff.

*Develop and Implement Strategies for Expansion and
Continuance of the Network by Engaging New Actants and Creating
Centers of Translation, Black Boxes, and Macro Actors*

The student marketing team had five major goals: (1) understand the needs of CSF; (2) identify and promote the key marketing targets; (3) establish marketing positioning strategies; (4) develop a marketing plan; and (5) recommend an action plan.

The market research involved defining and mapping CSF's external and internal environments and understanding how the center contributes to it. Based on this analysis, the team identified key stakeholders' to interview and survey within the network and developed customer and competitive profiles to define and map the network while identifying the key targets and determining the factors they use in making decisions. From this analysis, the marketing team identified customers' needs and selected marketing targets (individuals, groups, and networks) based on the market segment holding

the greatest potential for gain and developed feasible, suitable, acceptable, and measurable marketing objectives.

Positioning is the key message or image that CSF wants to engender in the minds and hearts of targets. The goal of the positioning is to create a positive perception and image of the organization in the market. This phase is the most difficult yet significant because the positioning statement forms the basis of subsequent communication and network building with target stakeholders/customers through promotion, advertising, public relations, merchandizing, lobbying, etc. The main tasks involved outlining the advantages to targets, addressing target's needs and benefits to be derived, differentiating CSF's advantages from the competitors, and communicating the values to key targets as the way of building network support.

The final stage involved developing a marketing strategy to promote CSF to the target markets and customers. The marketing team designed an array of marketing strategies and actions to support the positioning statements of key stakeholders. The actions taken at this stage are related and aligned to the goal and strategies of brand recognition, partnership, and increasing membership in the network through enrolment.

The marketing strategy proposed a high-contact approach that can be used by all members of the CSF network with the heads of each department. Moreover, a high-contact approach is also appropriate for interested student organizations and external companies. For targets less interested in CSF or sustainability, a low-contact approach was proposed, with an intention to increase visibility and therefore increase awareness.

The primary marketing strategy of CSF was to establish a formal membership program with internal and external targeted audiences as a way of building the network and creating a macro actor. Through benchmarking the sustainability centers at MIT, Arizona State University, and Columbia University, it was found that all three universities had some kind of membership program in relation to their sustainability initiative. MIT has a student club concentrating on sustainability in which all students can become a member of the club through their student Web site or Facebook. Arizona State University owns the Earth Institute, the hub of all sustainability-related activities on campus. Professors doing research in sustainability or students with interest in working as research assistants could form a long-term and formal relationship with the Earth Institute. Columbia has two organizations concentrating on sustainability: the School of Sustainability and Global Institute of Sustainability. The School of Sustainability offers series of courses and degree of studies to incoming and existing students. The Global Institute of Sustainability provides additional

research opportunities to professors and builds a strong relationship with companies. Those two organizations serve as main outlets for Columbia to form formal relationship with both internal and external stakeholders.

CONCLUSION

Recent advances in organizational development highlight the need for more integrated methodologies that address the issues from multiple perspectives and across social, cultural, disciplinary, and ideological boundaries and cover several levels of analysis. A more comprehensive approach to understanding the needs, problems, and challenges of innovation and change can move methodologies away from piecemeal approaches and toward a more focused and integrated systems approach that fosters innovation and facilitates change.

Developing a sustainable organization is a key strategy for business today. This chapter presented ANT as a methodology for leading sustainable development. The application of the ANT methodology involved 14 students from 7 countries working on 3 project teams to assist the CSF in establishing itself as a macro actor. At the start of the course the students completed a pre-test of their commitment to sustainable development. Three out of 14 students showed a significant commitment to sustainable development. By the end of the course all 14 students showed significant commitment. While working on their projects the students transformed from a disparate group of individuals into a macro actor for sustainable development.

The teams conducted a network analysis, identified ways to increase collaboration, established a curriculum for a minor in sustainability, and developed a marketing plan for engaging the campus and external stakeholders. The work of the project teams helped to strengthen and expand CSF's network and generated chains of translators among students, faculty, and staff for sustainable development. The creation and expansion of the network of translators established a macro actor for sustainable development over the course of a semester.

The application of the ANT methodology by the three research teams provides an interesting case study of sustainable development. Through applying the methodology and using variations of the scientific method and AI method, the students not only expanded and reinforced their knowledge of sustainable development but also generated an internal network among themselves and an external network with members of the

CSF and selected faculty and students. Their investigation and work for the CSF included identifying and justifying the reasons for sustainable development; selecting and mapping critical stakeholders within the internal and external environment to support sustainable development; interviewing and collecting data from key stakeholders; engaging stakeholders in interaction and collaboration with technical experts, functional managers, and staff; identifying and pointing to gaps between sustainable development and the organization's existing technology, social structure, and culture; translating other actants interests and needs into culture, visions, values, plans, and norms; defining and assigning roles and designing organization structures; creating committees and task forces to enlarge the network; arranging education and training for key stakeholders; establishing decision-making and conflict resolution processes to facilitate translation and minimize resistance; establishing and inscribing plans, policies, procedures, and practices to further develop the network and strengthen the organization's culture; and finally, reinforcing the network through creating marketing strategies and plans as well as designing and presenting reports to the CSF.

The need to gather information from multiple knowledge domains and to communicate effectively across boundaries is critical to interdisciplinary education and research as well as organizational development. Leaders must engage individuals and groups and organizations with diverse experiences, beliefs, and knowledge systems in a discovery process of data collection, discussion, and learning to reach mutual understanding and make decisions for shaping social reality and in meeting the needs and interests of all people. The engagement of diverse individuals and groups in open and self-regulating networks of translators can resolve ecological problems and lead to greater understanding, mutual respect, and a more peaceful and sustainable world.

In conclusion, it is important to note that a good deal of caution must be exercised in forming generalizations or conclusions based on a single case study. Further studies and applications of ANT are needed to substantiate its efficacy in facilitating sustainable development.

NOTE

1. More information on AI can be found at Cooperrider, Whitney, and Stavros (2008), Cooperrider and Avital (2004), and Thatchenkery and Metzker (2006).

ACKNOWLEDGMENTS

Special thanks go to Prof. Francis J. DiSalvo, Director of the Cornell Center for Sustainable Futures, and Dr. Helene Schember, Executive Director of Center, for their vision and willingness to engage graduate students in this project. Also a special acknowledgement and appreciation goes to the following students from seven countries who participated in this project: Hilary Vey, USA; Anthea (King Ping) Chow, Korea; Joe Riestenberg, USA; “Mark” Hyosuk Yang, Korea; Néel Travers, France; Rebecca Bechtold, USA; Abhishek Gupta, India; Pei-Tseng Yin, Taiwan; Unji Kim, Korea; Melissa Martin, USA; Kisouk Kim, Korea; Wen Ji, China; Isabelle Guerrin, France; and Aya Taniguchi, Japan. A special thanks goes to Rehana Huq for her support on the student projects.

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