

# CONTINUOUS RELEVANCE & RESPONSIBILITY: INTEGRATION OF SUSTAINABILITY & EXCELLENCE VIA INNOVATION

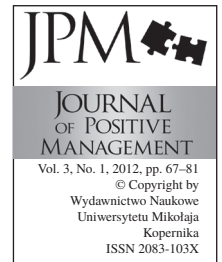
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## Abstract

**Purpose:** Sustainable Enterprise Excellence or SEE weaves core elements of corporate governance, sustainability, and enterprise excellence with the goal of advancing organizational progress toward the asymptotic objective of being continuously relevant and responsible. There are many possible enablers of and approaches to SEE realization. Innovation is among such critical enablers so that the role of innovation in SEE and a process for embedding innovation in the enterprise are explored. Use of innovation to integrate sustainability and enterprise excellence is particularly emphasized.

**Methodology & Approach:** Two types of innovation are especially relevant to sustainable enterprise excellence: innovation for sustainability and sustainable innovation. The first of these focuses on targets of innovation with sustainability at their core, particularly with respect to environmental or social dimensions of sustainability. The second of these, sustainable innovation, is concerned with creating a culture wherein innovation is native. Sustainable innovation and innovation for sustainability are melded to produce Socio-Ecological Innovation or SEI. Formal SEI elements are considered, an approach for SEI deployment is suggested, and SEI maturity with respect to these elements is assessed.

**Findings:** Ten basic and ten advanced SEI enablers are identified and integrated and a method for embedding and assessing the maturity of these is provided, after which a simple assessment presentation approach is proposed.

**Implications for Further Research:** Better understanding of SEI enablers is needed as is more clear understanding of what overall SEI maturity entails. The cited SEI enablers and maturity assessment method should be refined as greater understanding of SEI evolves.

**Keywords:** enterprise excellence, innovation for sustainability, maturity assessment, sustainable innovation, sustainable enterprise excellence, SWOT analysis

**Paper type:** Conceptual paper

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## 1. Introduction

Innovation is vital to organizational performance, not only with respect to the traditional competitive battlefields of product and service offerings, but also in areas crucial to environmental and societal *sustainability*. In particular there is growing awareness of the need to merge what have been distinct organizational drives for *enterprise excellence* and *corporate social and environmental responsibility* (CSER), *nee sustainability*. Strategically formed and deployed innovation builds a bridge spanning the chasm between enterprise excellence and sustainability. Construction of that bridge is the focus the present work.

Enterprise excellence is known by various names, including business excellence, organizational excellence, and performance excellence (Evans and Lindsay, 2008) and is strongly related to, e.g., the models and criteria of prestigious international quality awards such as the European Quality Award and America's Baldrige National Quality Award. Implementation of enterprise excellence approaches emphasizing performance across an array of key domains has proven to contribute to firm value (Balasubramanian et al., 2005).

CSER also has multiple well-known faces, including the ISO 14000 series of environmental standards (Castka and Balzarova, 2008), the ISO 26000 corporate social responsibility standard (Schwartz and Tilling, 2003), the ten principles of the United Nations Global Compact (Cetindamar and Husoy, 2007), and Global Reporting Initiative guidelines (Brown, 2011). Collectively these faces will be referred to as *sustainability*. As with enterprise excellence, both social and environmental policy and performance have been demonstrated to positively contribute to firm value (Al-Najjar and Anfimiadou 2012).

Merger of enterprise excellence and sustainability has proved challenging, however, with three primary modeling approaches dominating efforts thus far. Models of a first kind result from addition of a sustainability module to what is otherwise an enterprise excellence model (Asif et al., 2011) whereas models of a second kind result from incorporating enterprise excellence considerations in otherwise fundamentally sustainability oriented approaches (Zwetsloot, 2003).

A third modeling approach does not add one thing to a model that is otherwise other-oriented but, rather, attempt full integration of sustainability and enterprise excellence. Examples include custom forms of the balanced scorecard (Zingales and Hockerts, 2003), the 3C-SR conceptual model (Meehan et al., 2006), and the *Springboard to SEE* based on the notion of *Sustainable Enterprise Excellence* (SEE) with SEE defined as follows (Edgeman and Eskildsen, 2012):

*SEE results as a consequence of balancing both the competing and complementary interests of key stakeholder segments, including society and the natural environment, to increase the likelihood of superior and sustainable competitive positioning and hence long-term enterprise success that is*

*synonymous with continuously relevant and responsible governance, strategy, actions and results.*

*This is accomplished through an integrated approach to organizational design and function emphasising innovation, operational, supply chain, customer-related, human capital, financial, marketplace, societal, and environmental performance. The intent of this approach is to ethically, efficiently and effectively (E3) integrate 3E (equity, ecology, economy) Triple Top Line strategy throughout enterprise governance, culture and activities to produce simultaneously pragmatic, innovative and sustainable Triple Bottom Line 3P (people, planet, profit) performance results.*

SEE integrates corporate governance, sustainability and enterprise excellence in an effort to lead enterprises toward continuously relevant and responsible organization (CR2O) strategy, actions and results. SEE is fundamentally consistent with the cradle-to-cradle (C2C) vision of product and service design, delivery, and lifecycle (McDonough and Braungart, 2002a) that proceeds from the belief that overpopulation and over-consumption are not the chief challenges we face, but rather that what we consume is not optimally designed. That is, use of highly technical materials resulting from human ingenuity and creativity should only be done in closed loop technical cycles. Similarly, natural resources should be consumed within closed loop biological cycles. The closed loop concept is that any material introduced into the biological cycle should be designed to be biologically compatible (neutral) or – better – environmentally positive. C2C based strategy, governance and practice insinuate that enterprises should simultaneously enhance quality of life, social sustainability, and environmental sustainability while also producing positive economic performance, thus overcoming the common disconnect between economic performance and CSER performance that is otherwise a hindrance to SEE (Sekerka and Stimei, 2011).

In most contexts sustainability is synonymous with a ‘capacity to endure’. Connecting sustainability to excellence and governance transforms the concept of sustainability being a capacity to maintain *status quo* or move incrementally forward toward a stronger meaning:

*Sustainability is the propensity to improve in both absolute and relative terms as driven by social, environmental, and enterprise competitive contexts.*

Thus in SEE-committed enterprises sustainability manifests as significant contribution to both societal and environmental performance in addition to economic viability: the 3P people, planet and profit performance domains of the so-called triple bottom line or TBL (Elkington, 1997). More generally, sustainability and hence SEE flow from integration of effective, efficient, and

ethical (E3) governance and equity-, ecology-, and economy-based (3E) triple top line (TTL) strategy (McDonough and Braungart, 2002b) so that the quest for SEE is one of moving beyond the TBL toward sustainability-driven comprehensive measurement and management of enterprise performance (Hubbard, 2009).

While governance may at first glance appear an outlier in the governance – sustainability – enterprise excellence triumvirate, it is a documented enabler of enterprise performance (Wilkes, 2004) in such domains as financial performance (Erkens et al., 2012), CSER (Shahin and Zairi 2007), knowledge (Martin-Castilla and Rodriguez-Ruiz, 2008), and overall enterprise market valuation (Black et al., 2006). Governance is embedded in the criteria of most enterprise excellence models, but is generally referred to as senior executive leadership. Similarly, an enterprise's operations and supply chain may serve as either an enabler of or obstacle to sustainability and enterprise excellence (Souza, 2012) and hence SEE.

But what of innovation? What is its role with respect to sustainability, SEE and sustainable enterprise design (Parrish, 2007).

## 2. Innovation Bridge-Building

*Sustainable enterprise excellence* aims to deliver continuously relevant and responsible enterprise strategy, actions, and results, realization of which is challenging. The view espoused herein is that innovation serves as a key enabler of governance and strategy leading to realization across numerous enterprise performance domains, especially with respect to enterprise excellence and sustainability.

A sustainability-innovation nexus has been established in that sustainability is regarded as *the* key driver of innovation (Nidumolu et al., 2009). Similarly, a clear connection has been established between sustainability and business performance wherein sustainability is a key source of competitive advantage (Laszlo and Zhexembayeva, 2011). These relationships cite sustainability as a causal factor of both innovation and competitive advantage. The present intention differs in that innovation is deployed as a causal source contributing to both sustainability and competitive advantage.

If innovation is to serve in this capacity it must minimally have two distinct functions: some innovation targets must be explicitly driven by CSER considerations and, further, innovation must positively contribute to enterprise financial results. Additionally, given the objective of reaching CR20 status, innovation should contribute to provision of a durable or sustainable enterprise competitive advantage – that is – innovation must be native to enterprise culture. Such innovation integrates *sustainable innovation* and *innovation for sustainability*.

Sustainable innovation (Cooperrider, 2008) is at its core a cultural characteristic. Specifically, enterprise innovation is sustainable when innovation is embedded in enterprise culture such that innovation is regular, systematic,

and systemic to the strategy and activities of the enterprise and even advanced organizations with strong continuous improvement orientations are often challenged in transforming to a culture of sustainable innovation (Cole, 2001).

In contrast, innovation for sustainability focuses on ecological or societal challenges so that sustainability targeted innovation is often only a part of a larger enterprise innovation portfolio (Edgeman and Eskildsen, 2012a). Innovation imitating designs and patterns found in naturally arising phenomena is called biomimicry (Benyus, 2002) and may or may not be associated with innovation for sustainability, depending the innovation itself. In contrast, ecologically focused innovation is often referred to as eco-innovation (Carillo-Hermosilla et al., 2009) and should in principle always represent innovation for sustainability. Enterprise culture dictates whether a given biomimicry motivated innovation or eco-innovation arises in a sustainable innovation context.

In question, then, is how to connect innovation for sustainability and sustainable innovation in a way that regularly, rigorously, comprehensively, and profitably addresses societal, environmental and financial performance through integration of sustainability, governance, and enterprise excellence.

### 3. Socio-Ecological Innovation

Strategic integration of innovation for sustainability and sustainable innovation will be called *socio-ecological innovation* or SEI. Maturity assessment of SEI requires not only an understanding of what it is, but of how and in what forms it manifests, as well as how to improve future SEI strategy and results.

Approaches to SEI and maturity scale assessment for SEI will follow, as will a straightforward assessment approach that combines graphic and narrative feedback. The assessment deliverable is called the *SEI News Report* and informs the organization concerning present SEI performance. A more valuable result of SEI assessment, however, is delivery of foresight that informs and directs future SEI strategy and actions, thus influencing results.

SEI is consistent with both SEE and C2C, with all of these naturally embracing lean, green, ethical and real enterprise approaches (Edgeman and Eskildsen, 2012a), where:

- *Lean* implies resource conservation with “resources” broadly construed;
- *Green* is associated with conservation of non-renewable natural resources, wise use of renewable resources, and limitation of environmental footprint;
- *Ethical* refers to governance and implies commitment to and practice of social equity and justice, community involvement and contribution, and positive regard for treatment of the enterprise’s human capital; and
- *Real* implies lean, green, and ethical practice that deliver positive financial, societal, and environmental performance.

- SEI contributes to value creation through:
- Focus on reduced cost, risks, waste, and delivering proof-of-value;
- Dedicated attention to redesign of strategically selected products, processes, or business functions to optimize their performance and advance from doing old things in new ways to doing new things in new ways;
- Revenue growth via integration of innovative approaches into core strategies;
- Differentiation of the enterprise value proposition through new business models that use innovation to enhance enterprise culture, brand leadership, and other intangibles to secure durable competitive advantage.

Innovation prospers at the co-creative interfaces of the enterprise with its customers (Hoffmann 2012) and society (Edgeman and Eskildsen 2012b). Similarly, interdisciplinary collaboration is crucial to innovation-driven enterprise culture. Table 1 provides a path adapted from Brown (2008) for creating, cultivating, embedding and advancing a culture of innovation and, more specifically, one that is SEI-driven and reflects SEE and C2C thinking.

Focus	SEI Strategy and Actions
Innovation from the start	In order to develop an expanded space of potential solutions and create more concept fragments and eventual better result, engage in the innovation process before any direction has been set. Actively include the “eco-voice”.
People-centered co-creation and innovation	This captures unexpected insights and produces innovation more comprehensively reflecting consumer wants and societal needs. Observe the user environment. This fosters creation of acceptable, sustainable solutions.
Rapid development	Demand rapid experimentation and prototyping carried out with constant consideration of sustainable environmental and societal solutions. Measure progress with creativity metrics such as time to first prototype.
Innovation portfolio	Ensure relevant and responsible innovation by requiring a significant innovation subset to be SEI-driven. The innovation portfolio should be diverse and range from short-term incremental ideas to long-term evolutionary ones. Initiate revolutionary innovation from the top of the enterprise while expecting business units to drive and fund incremental innovation, thus ensuring contribution of innovation to profitability.
Pace of innovation budgeting	Since innovation is often rapid, commercialization can be unpredictable, and complex budgeting cycles constrain the pace of innovation, budget reallocation should be dynamic and sensitive to opportunities that arise.
Talent capitalization	Human capital is a key enabler of both SEI and SEE. Build interdisciplinary human capital and provide innovation, design, and sustainability training strategically throughout the enterprise. This surfaces more creative and diverse concepts and solutions. Mandate that a significant proportion of implemented solutions yield societal or environmental results.

**Table 1.**  
Embedding  
Socio-Ecological  
Innovation in  
Enterprise Strategy  
& Culture

Focus	SEI Strategy and Actions
Design for the cycle	Ensure rapid rotation of human capital to provide experience across the inspiration to ideation to implementation cycle. Experience across the full cycle generates better judgment, creating long-term benefits for the enterprise, including better understanding of how innovation impacts all sustainability dimensions.

**Table 1.**  
*Continued*

Integrating and embedding innovation, sustainability, and enterprise excellence in enterprise culture is challenging. Lacking integration, however, the sort of incremental improvement often pursued by enterprise excellence approaches can inhibit innovation (Cole and Matsumiya, 2008). Integration is made more sure when enterprise human capital includes a well-coordinated cadre of *connectors* who build bridges across key parts of the enterprise, *ideators* who supply creative energy, and *promoters* who convincingly ‘sell’ the message of innovation- and sustainability- related value, efforts and results.

To attain 360 degree incorporation of innovation, sustainability and enterprise excellence across all enterprise functional areas, activities, and results we thus have a scheme for embedding SEI in enterprise culture, as well as understanding of the human resource composition needed to do so. SEI deployment remains however, and toward this end the following elements are recommended:

- Make innovation for sustainability core to enterprise vision and strategy;
- Integrate SEI into all parts of the enterprise;
- Emphasize actions and results over rhetoric;
- Engage key stakeholders and gain their support;
- Use the individual and collective power of enterprise human capital;
- Aligning all enterprise systems with SEI vision and repeat the process.

#### 4. SEI Excellence, Assessment & Foresight

SEI integrates institutional entrepreneurship research and social innovation research with socio-ecological systems and resilience thinking (Folke 2006) wherein the perspectives of Olsson and Galaz (2011) suggest that SEI should:

- Integrate 3E / 3P aspects;
- Enrich human life and society without contributing to erosion of life-supporting ecosystems;
- Simultaneously address the 3E / 3P connections to yield solutions to specific challenges without creating new ones;
- Occur at the co-creative enterprise-culture and enterprise-user interfaces by integrating the creativity and ingenuity of users, workers, consumers, citizens, activists, businesses and other stakeholders.

Ten basic (10R) and ten advanced (10A) such strategies and actions supportive of SEI are cited in Tables 2 and 3.

**Table 2.**  
10R SEI  
environmental  
design and  
innovation life-cycle  
actions

Life-Cycle Action	Description
R1 Reduce	Reduce material/ energy consumption across the product/ service life cycle.
R2 Reuse	Design the product or service to enable and encourage simple reuse.
R3 Recycle	Recycle obsessively and design products for simpler disassembly.
R4 Replace	Replace ecologically, humanly, or socially damaging substances or actions with environmentally or socially friendly alternatives.
R5 Rethink	Rethink every product or service function. Are they ecologically and socially friendly? Needed? Efficient?
R6 Redirect	Consider redirection of products and services to secondary or tertiary uses.
R7 Renew	Design products for simple repair, renewal, revision, and updating to prevent premature replacement.
R8 Reconsider	Reconsider design of products and services to use elements in multiple products and services, thus reducing resource consumption, inventory, and component degradation, while improving overall renewal capability.
R9 Redesign	Incorporate 10R considerations in design and innovation strategy and actions, including human capital related and organization design ones.
R10 Reinvest	Reinvest a deliberate amount or percentage of costs recovered or revenue generated from SEI toward future SEI related activities and strategies.

**Table 3.**  
SEI 10A advanced  
enterprise level  
socio-ecological  
innovation elements

Element	Description
Socio-Ecological Innovation Strategy (A1)	The enterprise has explicitly identified areas of and goals for socio-ecological innovation in relation to both revenue and reinvestment.
Innovation Support (A2)	Leadership encourages and supports a culture of cross-disciplinary collaboration and co-creation in its development of products, processes, and service solutions.
Innovation Competencies and Technologies (A3)	The enterprise lucidly understands its core competencies and technologies, actively engages in identification of areas in which core competencies and technologies must be further enhanced or acquired, and has clearly linked these to its short-and-long-term innovation strategies that are informed both by its innovation insight and foresight.
Socio-Ecological Innovation Capacity (A4)	The enterprise cross-functionally and collaboratively coordinates and otherwise empowers, and mobilizes its innovation competencies for action in proportions appropriate to innovation opportunities and needs. These resources are committed to development (e.g. fulfillment) of such needs and opportunities.



Element	Description
Innovation Insight (A5)	Enterprise actively engages customers, society, and surrogates for the ecological voice in the innovation process as a means of identifying both articulated and unarticulated needs and, subsequently, fulfilling those needs.
Innovation Readiness (A6)	The enterprise has sufficient innovation and design competencies and technologies.
New Product & Service Innovation & Design (A7)	The enterprise has explicit targets for amount or proportion of its revenue deriving from new or recent product and service introduction, as well as targets for reinvestment of profits in research and development (e.g. new products and services innovations and designs).
Innovation Foresight (A8)	The enterprise actively, systematically, rigorously, and strategically engages in sensing of socio-ecological and other innovation needs, trends, and opportunities. The enterprise also actively seeks to uncover and understand threats and risks associated with socio-ecological and other innovation needs and opportunities.
Business Model Innovation (A9)	Enterprise systematically challenges business model assumptions, incorporating learning in its product and service development strategies and processes.
Systematic Change Integration (A10)	Enterprise strives for systemic enterprise-wide implementation and change and allocates resources needed to accomplish this. Learning from these, together with foresight activities inform future strategy and business model innovation.

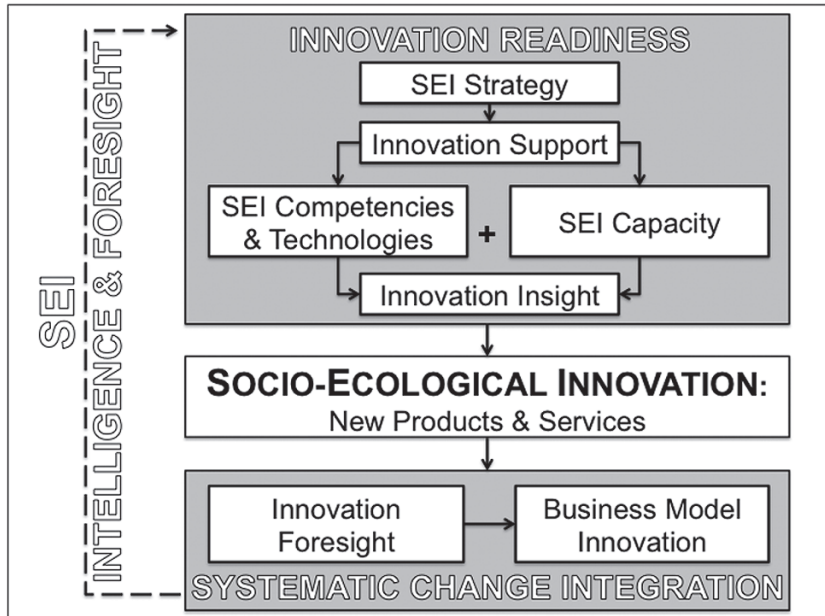
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**Table 3.**  
*Continued*

Figure 1 presents the 10A actions and strategies organized to illustrate SEI flow. In particular an enterprise must first be innovation-ready. Innovation readiness from an SEI perspective implies that the enterprise has an identifiable innovation strategy that targets specific sustainability objectives and results. Strategy that is not enacted is akin to wishful thinking so that enterprise support for innovation is critical. Such support is essentially preparedness that includes creative, empowered, competent, incentivized and otherwise motivated human capital that is supported by appropriate enabling technologies. This speaks in part to human capacity for innovation, but SEI capacity as portrayed in Figure 1 also addresses overall availability and dedication of appropriate resources, including but not limited to financial capital. Closing the innovation readiness loop requires that the enterprise's SEI strategy is based on insight driven in part by responsible market forecasts, competitor intelligence, and accurate resource consumption projections. Enacting this strategy leads to socio-ecological innovation resulting in more efficient and effective forms of existing products and services, or introduction of new products and services with the understanding that the some critical subset of these product and service revisions and introductions is driven by environmental or societal sustainability considerations. It is important

to systematically integrate learning resulting from innovation readiness and execution, to hone current practices into best practices and best practices into next best practices and sources of competitive advantage and hence to generate new foresight and introduce relevant innovation in enterprise business models. Enterprise intelligence and foresight then inform the subsequent innovation cycle. In this way innovation for sustainability is embedded in a culture of sustainable innovation: SEI.

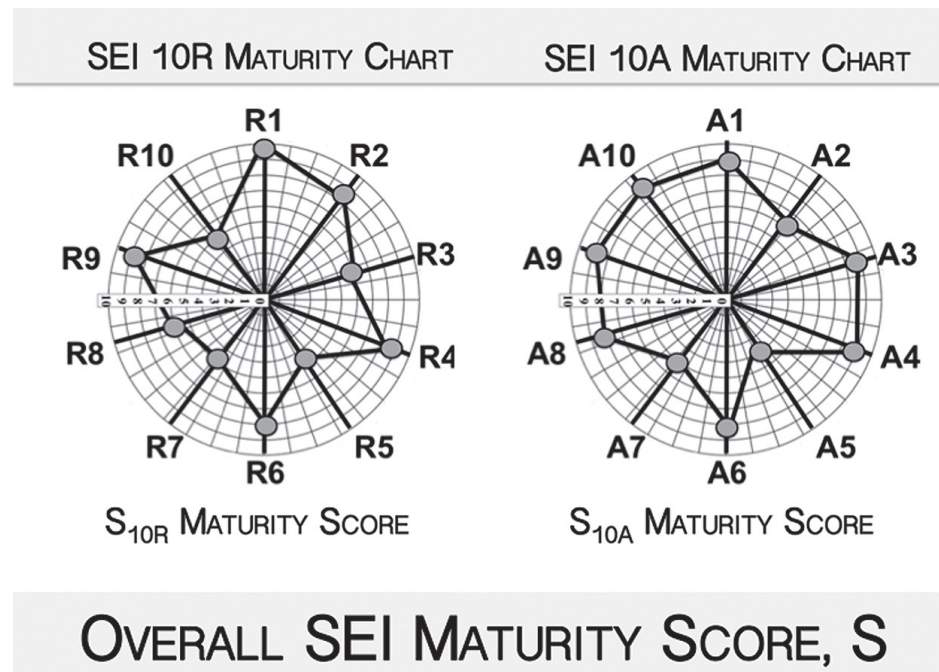


**Figure 1.**  
SEI Advanced  
Strategies and  
Actions (10A) Flow

It must not be overlooked that the user-community and broader society, along with a surrogate eco-voice are integrated into this process. SEI thus implies that driving 3E triple top line strategy through the enterprise to produce superior 3P triple bottom line results aims to deliver economic, social, and environmental efficiency and effectiveness. As such, and in support of SEE, the enterprise should be skilled at marketing and branding, meaning that identification of social, ecological, and market needs is critical to long-term prosperity and creating sustainable consumer tribes.

Enterprise progress toward SEI and hence SEE should be rigorously, routinely and systematically assessed and advanced. Descriptive (e.g. narrative) 0-to-10 maturity scales for both 10R and 10A strategies and actions are available from the authors with 0 or 1 representing very low maturity, 2 or 3 low maturity, 4 or 5 or 6 moderate maturity, 7 or 8 high maturity, and 9 or 10 very high maturity. High maturity is ordinarily associated with industry

leader status whereas very high maturity represents world-class performance. Figure 2 provides an example combination of SEI 10R and 10A maturity charts based on such assessments.

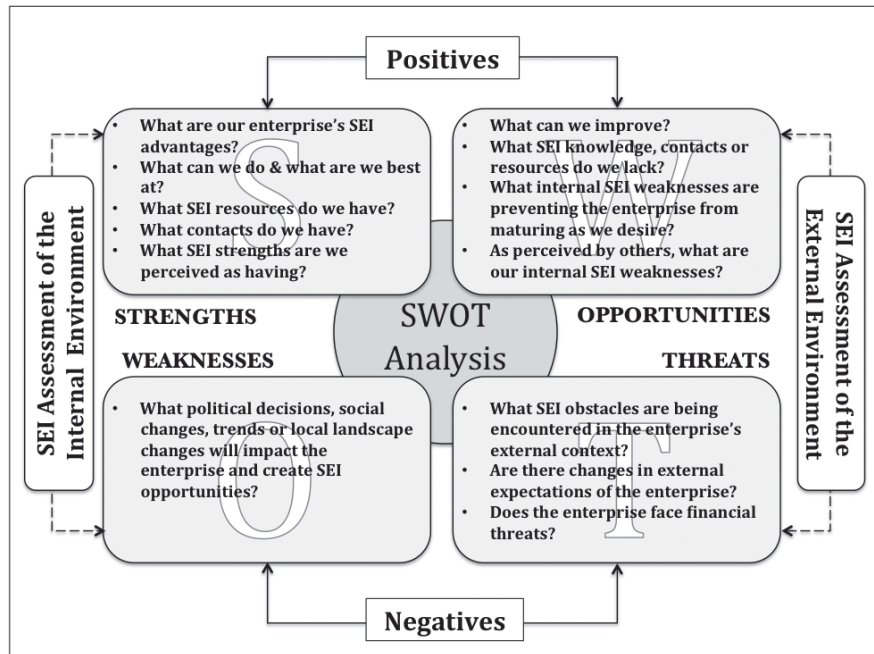


**Figure 2.**  
Combined SEI 10R  
and 10A Maturity  
Charts

It is of value to note that the 10 dimensions on either of these maturity charts are almost surely of unequal importance and priority to the enterprise and overall SEI 10R and 10A maturity will thus not typically be derived from a simple average or sum of the maturity values. If such a summary is desired, a more reasonable approach is simply to weight the 10 “R” areas by allocating 10 total points to these areas according to their relative importance and such that each weight is non-negative and similarly so for the 10 “A” areas. This approach allows for zero weighting of a given area as would be merited if that area is irrelevant to enterprise competitive context. These weights may then be multiplied by the corresponding assessed value with the resulting products added to provide maturity scores,  $S_{10R}$  and  $S_{10A}$  that each range from 0 to 100.

Interested enterprises may weight 10R and 10A differentially with weights  $W_R$  and  $W_A$  such that  $W_R, W_A > 0$  and  $W_R + W_A = 1$ . These weights may be multiplied by the corresponding 0 to 100 summary values and added to yield an overall SEI maturity rating,  $S = W_R S_{10R} + W_A S_{10A}$ , that is also on a 0 to 100 scale. Remaining to be determined is the correspondence between  $S$  and overall SEI maturity.

Maturity charts and summary values should be augmented by narrative detailing strengths, weaknesses, opportunities and threats (SWOT) to the enterprise regarding SEI. Such narrative should be directive, indicating actions, changes, tactics or strategies the enterprise should consider implementing or adopting and should also suggest next best practices and sources of competitive advantage. The result of this approach is a *SEI SWOT Plot Narrative* such as the one portrayed in Figure 3 that, when combined with the SEI 10A and 10R Maturity Charts and Scores of Figure 2, yields an overall enterprise SEI maturity assessment called a *SEI News Report*.



**Figure 3.**  
Generic SEI SWOT  
Plot Narrative

The content of the S-W-O-T blocks in Figure 3 suggest specific elements that may be considered when conducting SWOT analysis of SEI. Strengths and opportunities reflect both existing (strengths) and potential (opportunities) enterprise positives relative to SEI. Similarly weaknesses and threats represent existing (weaknesses) and potential (threats) SEI enterprise negatives. Strengths and weaknesses are associated with elements over which the enterprise has the ability to exert direct influence whereas opportunities and threats represent factors external to the enterprise contextual environment that cannot be directly controlled by the enterprise and that may impact enterprise SEI strategy and performance.

## 5. Summary

Socio-ecological innovation (SEI) results from highly effective and efficient integration innovation for sustainability and sustainable innovation where innovation for sustainability specifically focuses on innovation with environmental or societal sustainability implications whereas sustainable innovation is an intentionally cultivated enterprise cultural artifact wherein innovation is routine to enterprise conduct and is systematically and systemically embedded. Integration of such depth and complexity happens neither spontaneously nor accidentally, but rather, purposefully. Toward that end a theory of SEI has been outlined and a structured approach for building and embedding a culture conducive to SEI has been introduced.

Various basic and advanced SEI strategies and actions have been identified and their assessment discussed. SEI maturity measurement is critical to assessment and advancement of SEI via a simple approach referred to as the SEI News Report combining graphical and narrative forms was developed.

SEI is important in-and-of-itself and may be considered separately from the notion of Sustainable Enterprise Excellence (SEE). That said, the power of SEI may be multiplied by leveraging it as an enabler of SEE. SEE weds sustainability, governance, and enterprise excellence with the goal of deploying E3 (ethical, effective and efficient) governance and 3E (equitable, ecological, and economic) strategy to yield 3P (people, planet and profit) enterprise performance, thus supporting the asymptotic enterprise objective of becoming a continuously relevant and responsible organization.

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