

**The Strategic Visioning Process: Facilitating Innovation to Bridge the Gaps of
Technological Discontinuity**

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ABSTRACT

This paper discusses the importance of formalizing a systematic approach to creativity and innovation in the strategic visioning process. As the value of product and service innovations decline over time, technological discontinuities occur until new innovations are introduced. The proposed Strategic Visioning Model incorporates the theory of bisociation into the environmental scanning process to facilitate innovation. This model facilitates projecting opportunities and threats at a higher order of brainstorming activity by analyzing the interactive effects of environmental factors in a cross-impact matrix. It is expected that this process will produce more unexpected creations, novel discoveries, and innovative ideas for incumbents and new entrants.

Keywords: technological discontinuity; innovation; environmental scanning

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INTRODUCTION

The Universe is undergoing a complete upheaval... Its nature is going to change so as to enable its creation anew." -- Ibn Khaldun (1332-1406)

The importance of innovation in sustaining a competitive advantage in the global economy is readily apparent, since it can result in rare, valuable, and potentially inimitable resources (Barney, 1991; Ahuja & Lampert, 2001). Innovations introduced by incumbents and new entrants are at the core of entrepreneurial wealth creation (Schumpeter, 1939; Ahuja & Lampert, 2001). According to Schumpeter's (1939, 1947) seminal thesis, innovation manifests itself in the form of new combinations of products, markets, supply sources, and organizations. Schumpeter concluded that breakthrough innovations lead to paradigm shifts in the wealth potential of industries and sometimes lead to the destruction of incumbent firms and embedded technologies. Subsequent research suggests that destruction does not necessarily occur but can lead to periods of technological discontinuities (Rothaermel, 2000).

Schumpeter (1947) also presumed that only large corporations had the resources to implement these radical technologies. This dated perspective obviously does not take into account the 55% of U.S. patents generated by small business (www.sba.gov/advo/stats). A new venture or corporate entrepreneurial perspective of the innovative process can provide a wider lens from which to analyze the potential for generating new profits for investors.

The task of the entrepreneur and the entrepreneurial firm is to recognize and anticipate discontinuities as opportunities for wealth creation and competitive advantage (Sexton & Smilor, 1997). However, prior research has not fully addressed the opportunity identification process, as a proactive and perpetual system, that facilitates and formalizes the innovation process for new and existing firms (Ahuja & Lampert, 2001). Instead, there has been a considerable focus in

prior studies on the characteristics of entrepreneurs and the development of new technology ventures (Kickul & Gundry, 2002). Rather than as a core business process, innovation has been treated as a random act of a lone inventor in the new venturing context, or the residual of technological research and development efforts within the corporate venturing context

The proposed Strategic Visioning Model contributes to entrepreneurship and innovation literature by suggesting a formalized innovation process. Building on environmental scanning the model uses a concept called bisociation (Koestler, 1964) to articulate the inter-relatedness of different trends that signal opportunities and threats in a firm's societal and industrial environments. Smilor and Sexton (1997) in their preface to Entrepreneurship 2000 suggest the theory of bisociation as a mean of deriving an "a-ha" sensation of innovation.

The paper will first discuss the supportive theoretical framework and development of the Strategic Visioning Model. The conclusions will highlight implications and future applications of the model to anticipate and bridge discontinuities and thereby create opportunities for wealth and sustainable competitive advantage.

THEORETICAL FRAMEWORK

The Knowledge-based View

The resource-based view, suggests that the competitive advantage of firm arise for superior resources, core competencies and capabilities. The knowledge-based view maintains that knowledge is the most strategically significant resource of the firm, and therefore the source of above average returns, if they are embedded in the firm and difficult to copy and replicate.

Organizations create knowledge through the interactions between explicit (formal) knowledge and tacit (informal) knowledge.

There are three approaches to knowledge management: technocratic, economic, and behavioral schools. The technocratic approach emphasizes the use of tools and defines the context in terms of information technology. Economic approaches focus on the efficiency of markets to satisfy knowledge demand and supply. Behavioral schools include attempts to use contexts such as space or communities to enable knowledge processes.

The Entrepreneurial Process

At the convergence of the strategic management paradigm and entrepreneurship theory is the innovation process that is critical to the sustainable competitive advantages of nations and organizations. From the strategic perspective, firms must continually adapt to change by anticipating future environmental challenges, formulating competitive and entrepreneurial strategies, developing new corporate capabilities, and managing change (Chakravarthy, 1982). In this context, innovation is a strategic response to changing environmental conditions based on intelligence available and the strategic choices made by decision makers (Drucker, 1985). The innovative capacity of a firm is embedded in its absorptive capability, but prior knowledge acts as a filter to a firm's ability to recognize the value of new information, assimilate it, and apply it to commercial ends. Although innovation has been prescribed as the province of the entrepreneur, it is the heart of strategic planning for all firms concerned with sustaining competitive advantage and protecting distinctive competences.

Recognized as the original underpinnings of entrepreneurship theory, Schumpeter's seminal theses (1939, 1947) described the entrepreneur as one who induces innovation by putting together existing elements into new combinations. These new combinations may come in the form of the "introduction of a new good, of a new quality of a good, the introduction of a new method of production, the opening of a new market, the conquest of a new source of supply of raw materials or half-manufactured goods, or the carrying out of the new organization of any industry" (1936, p. 66). Schumpeter argued that someone is an entrepreneur only when he or she is putting together a new combination and breaking established rules and resistance to change that exists in every society.

The entrepreneurial process is the creation and/or recognition of opportunities, as well as the pursuit of those opportunities by turning them into wealth creating businesses during a limited window of time (Sexton & Smilor, 1997). Opportunity recognition behavior includes establishing new firms, developing a new part of the business, and acquiring a new type of business (Kickul & Gundry, 2001). Entrepreneurship as a scholarly field seeks to understand how opportunities to bring into existence “future” goods and services are discovered, created and exploited, by whom, and with what consequences (Venkatraman, 1997). Similarly,

Innovation and Creativity

Creativity is the process through which invention occurs, as well as brainstorming ideas for new opportunity. Additionally, creativity is a process that mediates the potential presented by external or environmental change and the entrepreneur’s innovative response to the opportunity. Creativity is the point of origination for innovation which has been defined as the successful implementation of creative ideas (Brazeal & Herbert, 1999). Innovation is the means by which the entrepreneur either creates new wealth-producing resources or endows existing resources with enhanced potential for creating wealth (Drucker, 1985). “Radical” or “breakthrough” innovations are at the core of entrepreneurial activity and wealth creation (Ahuja & Lampert, 2001).”Furthermore, research results in entrepreneurship and strategy literature, relative to innovation, have been inconsistent and have failed to clearly identify the stages of the innovation (Damanpour, 1991; Brazeal & Herbert, 1999).

Innovation that triggers entrepreneurial events has been classified as radical or incremental. Radical innovations are discontinuous or dramatic departures from the current ideal in design, application, or process (Brazeal & Herbert, 1999). These radical innovations are typically technological breakthroughs with no precedents or antecedents that represent true quantum leaps in theory and application rather than linear progression. Incremental innovations

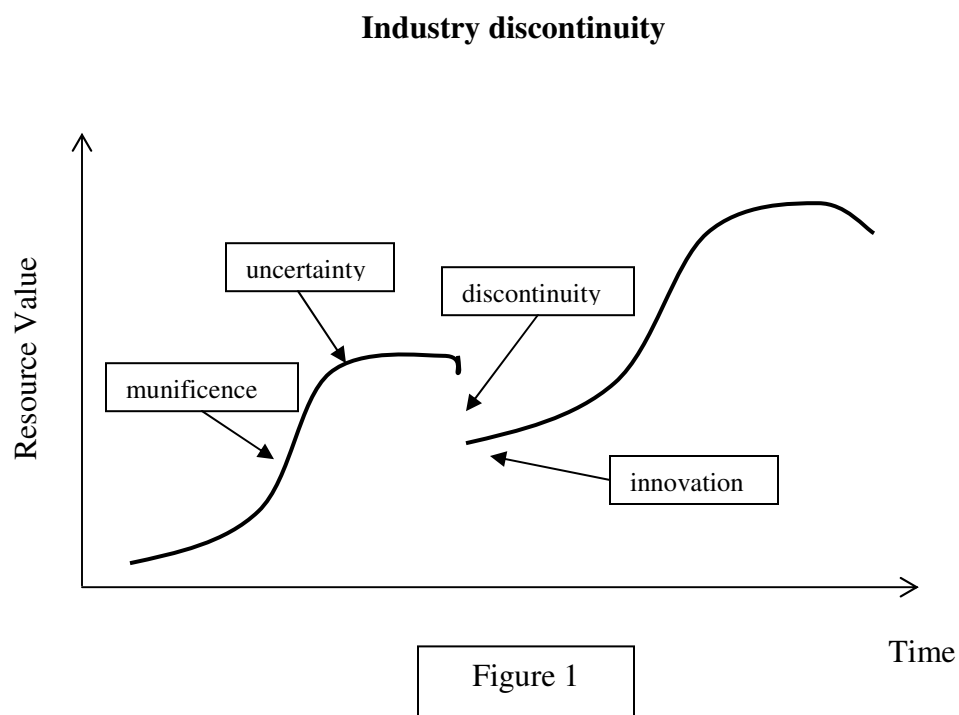
consist of small modifications or refinements to pre-existing processes or phenomenological states such as existing policies, procedures, product line, and services. These innovations also manifest as improvements in operations, cost control, and product or service performance necessary to keep pace with competitors. Popular concepts such as continuous improvement and reengineering are examples of incremental change that may require “revisioning” the companies mission and competitive strategy to reflect discontinuous change in the task environment (Clemons, 1995). These changes are often limited to internal organizational processes, job descriptions, workflow, product delivery, and customer service procedures, with corresponding modifications in information infrastructure. Incremental innovation process can also trigger an entrepreneurial event that results in a substantive redefinition, application, or discovery of meaningful commercial value (Brazeal & Herbert, 1999).

Industry discontinuities

Research suggests not every innovation necessarily leads to the destruction of incumbent firms, industries or technologies, but instead, periods of technological discontinuities occur (Rothaermel, 2000). Technological discontinuity is the displacement of one technology by another caused by a breakthrough innovation that advances, by an order of magnitude, the technological state of the art, which characterizes an industry (McKinsey, 1996). It occurs when a new technology does not just enhance the current technology, but actually substitutes for that technology to yield better performance. According to Ahuja and Lampert (2001), breakthrough technologies can represent rare, valuable, and potentially inimitable sources of competitive advantage, as defined by Barney (1991). Abernathy and Utterback (1978) viewed technological progress as a single cycle leading toward more process and less product innovation. However Foster’s (1986) notion of a series of S-curves, as depicted in Figure 1 suggests an industry or

firm evolves through a succession of technology cycles, with each cycle beginning with technological discontinuity.

Schumpeter's (1939) theory of creative destruction presumes that as innovations create new industries, old industries cease to provide meaningful returns on investment. Supporting this concept of creative destruction, Koestler (1964) theorized that the creative acts in all realms of endeavor have a revolutionary or destructive side. Amit & Zott (2001) further elaborated that innovative models that facilitate Schumpeter's idea of creative destruction "not only apply to products, production processes, distribution channels, and markets, but also to exchange mechanisms and transaction architectures" (p. 511) such as electronic commerce.



Noting the importance of technological discontinuity to the process of innovation, Drucker (1985) describe the 21st century as the age of discontinuity. Technological discontinuities cause economic discontinuities by threatening established business and providing

opportunities for new businesses (Betz, 1991). Discontinuous change can bring about creative destruction from an industry perspective, as Schumpeter theorized. From a firm level, discontinuous product and process innovations are competence destroying, in the sense that they obsolesce existing know-how. In this case, mastery of the old technology does not imply mastery of the new (McKelvey, 1996). Firms embark on a new learning curve which is essentially unaffected by the firm's existing know-how, instead of obsolescing it. Radical technology enhances and destroys existing knowledge, just as innovations enhance or destroy existing competences (McKelvey, 1996). New products affect distribution channels and suppliers while process innovations make products better and cheaper, but do not affect linkages. Important factors are whether the core technical know-how of an industry is disrupted by an innovation or whether links in the value chain are overturned or reinforced by the new technology. In fact, the inability to adapt to a new technical order destroys more firms than the inability to withstand a recession (McKelvey, 1996). Additionally, technological discontinuity affects market shares by altering the barriers to entry and mobility. The time for detecting the need to change is limited by the market growth of the new product and the speed of diffusion between users (Ehrnberg, 1995).

Firms experience periods of munificence associated with value creating innovations, as shown in Figure 1. As the rate of industry growth declines, environment uncertainty related to the continued value of the innovation intensifies. This uncertainty may be generated by the introduction of new patents prior to market introduction. Additionally, countervailing forces such as regulatory restraints or social paradigm shifts may eventually lead to the onset of discontinuities. If there are periods when the entrepreneur is not innovating the organization may be subject to the environmental uncertainties that may eventually lead to technological discontinuities. Anticipating and bridging the discontinuity gaps with new product or process

innovation creates new periods of environmental munificence and opportunities for wealth creation.

Scholars predict the frequency of technological discontinuities will continue to increase (Drucker, 1985); and attacking companies will have the advantage over defenders (Lohr, 1994). Consequently, entrepreneurs will be forced to find breakthrough technologies to maintain their competitive advantage. However, a radical innovation is a true breakthrough technology only if people accept it and use it to change the way they work and live. The significant crossover point, called an “inflection point” or a “paradigm shift” occurs when something with technological potential becomes a market phenomenon. As technological limits are reached, it becomes increasingly costly to make progress, and the possibility of new approaches often emerges at the same time. Proactive entrepreneurs, particularly incumbents firms, must continually scan their environment to understand the innovation cycle represented by the S-curve and anticipate pending shifts and periods of technological discontinuities (Foster, 1986).

Environmental Scanning

Environmental scanning is the monitoring, evaluating and disseminating of information to key managers within the organization (Kumar, 2001). Environmental scanning is an important element of strategic planning because it is a source of organizational learning and an important part of the process of continually adapting to changes in a firm’s environment (Chakravarthy, 1982). Competitiveness depends on the organization’s ability to monitor and adapt its strategies based on information acquired through environmental scanning activities (Kumar, 2001). However, the learning process of collecting and disseminating information is affected by knowledge filters and bounded rationality. This process also depends on embedded resources and the nature of management processes related to the latitude available to managers for the exploitation of available resources. Environmental scanning can take on added

importance and become more complex when the firm's environment becomes more uncertain or hostile, particularly when strong threats emerge (Kumar, 2001).

Environmental scanning can manifest as an informal or formal process, depending upon the type of information sought or the urgency of the need (Kumar, 2001). Informal environmental scanning can be both a passive and active process (Lozada & Calantone 1996). However, little research has been done on formalizing the process of environmental scanning to facilitate breakthrough innovations. The trial and error approach to environmental scanning has been the prevalent model, which perpetuates the passive continuation of existing activities. This approach persists because it is assumed that the rate of environmental change is slower than an organization's response time (Kumar, 2001). Consequently, many opportunities are missed because of discontinuities in key trends and compressed time horizons. Ever increasing rapidity of environmental change and increased uncertainty compels managers to prioritize strategies that proactively anticipate and shape events.

External information is strategic when it refers to information about events or relationships in the firm's outside environment that unveil opportunities to exploit the firm's strengths, accentuate the firm's weaknesses, or highlight potential threats facing the firm (Aguilar, 1967; Lozada & Calantone, 1996). A positive link has been established between scanning and the acquisition of strategically relevant external information with organizational performance (Lamont, Marlin, & Hoffman, 1993). However, scanning alone is not enough; the information must be used in a relevant manner (Kumar, 2001). A scanning system that is in line with the organization's primary strategy may be a contributor to organizational performance and may be the source of an organization's distinctive competence and a valuable resource.

In the corporate planning process it is generally assumed that incremental progress in technology will occur. The inherent limitation to an incremental approach is that past

developments in a given technology cannot be extrapolated into the future, because every technology has its limits. The key to sustaining a competitive advantage is to anticipate when to shift resources to a technology with more potential. Aguilar (1967) suggested that measuring scanning activity is difficult because managers scan in fragmented, informal, and ad hoc ways. Prior classifications of environmental scanning have identified types of scanning and categories of external factors. There are three aspects of environmental scanning: commercial scanning (markets and customers), competitive scanning (competitors and industries), and technological scanning (production and information technologies and providers) of which the later has taken on added importance in recent years (Raymond, Julien, & Ramangalahy, 2001). Technological scanning collects and analyzes external information in order to make better decisions on technological change and innovation and to increase the firm's competitiveness.

Two common outputs of the environmental scanning process are anticipated opportunities and threats in the firm's task environment. Opportunities are positive situations in which gains are likely and over which one has a fair amount of control; and threats are negative situations in which losses are likely and over which one has relatively little control (Dutton & Jackson, 1987). In general, strategists primarily focus environmental scanning efforts on searching for opportunities, whereas threats are secondary (Mintzberg, 1978). More specifically, firms engaged in proactive strategy implementation look for opportunities, whereas reactive managers will scan for threats.

MODEL DEVELOPMENT

Strategic Visioning Model

The Strategic Visioning Model (see Figure 2) is the primary contribution of this paper to the environmental scanning component of the strategic management paradigm. It is intended to

facilitate innovation and creativity that is inherent in the entrepreneurial process. This model uses qualitative and quantitative analyses of environmental trends and forecasting to anticipate changes in the industry. An accumulation of major trends lead to paradigm shifts in society that may influence an inflection in the S-curve in technology that eventually manifest in the business world as a technological discontinuity. Being able to anticipate and seize discontinuity as a window of opportunity is critical to the entrepreneurial process. Moreover, leaving an important element of the strategic management paradigm, environmental scanning, to chance is not a consistent way to maintain a sustainable competitive advantage. This model establishes a process for brainstorming new innovations as a way of bridging technological and other discontinuities in the environment to insure a strategic vision that will maintain and renew organizational knowledge as a valuable resource.

The Strategic Visioning Model as presented in Figure 2, appends the environmental scanning process to the diagram of industry discontinuity (Figure 1). Environmental scanning becomes a strategic planning priority at the point the uncertainty of an existing innovation's sustainability becomes evident to management. The principle component of environmental scanning is the identification of external factors that function as trends. Trends are defined as the changes and events in an organization's external environment, which might affect the organization's function (Aguilar, 1967). Trends function as a pattern of change or movement of a force in a particular direction over a period of time. Trends are typically categorized into four basic societal level factors: economic, social-cultural, legal-regulatory, and technological (Martino, 1999). Additionally, the model indicates there are forces working for (driving forces) and against (countervailing forces) these trends. These forces affect the rate of change, the direction of change, as well as, the frequency of change in the direction of trends.

STRATEGIC VISIONING MODEL

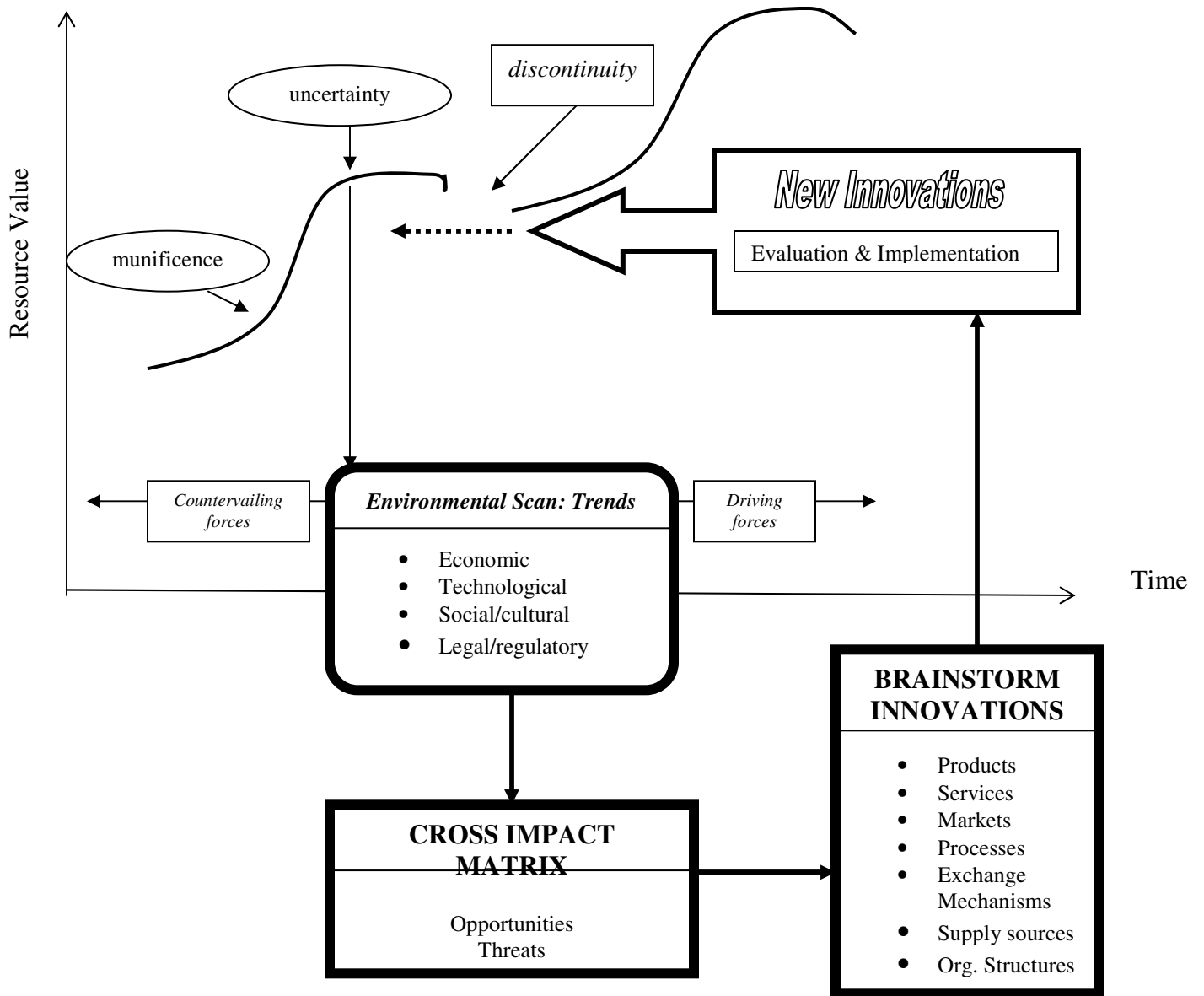


Figure 2
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Trends can be quantified as series of historical data that can be projected into the future. For example, forecasting a turning point or a drastic shift of technological change in the economic context can use leading indicators, econometrics, adoption modes, and decomposition methods (Martino, 1999). Some models of environmental scanning forecast the probable environment for change using historical trend data and bridge information gaps by inserting the missing links (interpolation) and extending data points (extrapolation) based on a linear equation. If plotted, the rate of these changes in the organization's environment can be represented by the slope coefficient of the curve. However, extrapolation models with empirical data have been described as obsolete because major shifts in paradigms and technology are not linear, and can't be predicted with historical data (Kash, 1999). Alternatively, forecasting innovation can be accomplished by integrating conceptually linked measures with expert opinions (Martino, 1999). Expert opinion can evaluate the significance of linear trend projections qualitatively or quantitatively, in terms of the degree of probability of occurrence and relevance of the phenomenon to the organization (Abernathy & Utterback, 1978).

Bisociation in the creative process

In the strategic management paradigm the matrix technique has been used in the well-established SWOT (strengths, weaknesses, opportunities, and threats) analysis to discover alternative strategies that match the firm's internal and external factors. However, this technique has not been applied to the discovery of the external factors (opportunities and threats) that compose the SWOT analysis. The typical process of scanning the external environment involves the identification of external strategic factors, defined as key environmental trends or forces that have medium to high probability of occurrence and impact on the firm (Wheelen & Hunger, 2001). Based on priority ranking of the probability of occurrence and degree of impact, these strategic factors are then categorized as opportunities and threats. This approach does not

involve the higher order of thinking required by the bisociation of independent external trends and forces to discover new ideas, in the form opportunities and threats, unique to a particular combination of environmental variables.

Based on the theory of bisociation, the Cross Impact Matrix (Figure 3) used in this Strategic Visioning Model articulates the interaction of the environmental factors mentioned earlier— economic, socio-cultural, legal/regulatory, and technological—which are displayed across the top row and first column. On the left part of the matrix six strategic opportunities and on the right side, six strategic threats are produced from creatively brainstorming ideas that derive from the intersection of the external factors, taken two at a time.

Trends	Economic (E)	Socio-Cultural (S)	Legal/ Regulatory (L)	Technological (T)
Economic	*****	Threat S/E	Threat L/E	Threat T/E
Socio-Cultural	Opportunity E/S	*****	Threat L/S	Threat T/S
Legal/ Regulatory	Opportunity E/L	Opportunity S/L	*****	Threat T/L
Technological	Opportunity E/T	Opportunity S/T	Opportunity L/T	*****

Figure 3

Brainstorming Process

A typical strategic planning session would involve stakeholders from a variety of disciplines and levels within and, possibly outside the firm, coming together for training and group interaction. Participants would be required to perform environmental scanning prior to the session and bring research documentation on a variety of societal and industry level trends that are pertinent to the firm’s task environment. Participant could work individually or as a group to brainstorm ideas and compile results in a written or computerized database. Individuals properly

trained in the strategic visioning process could subsequently work in remote groups using Internet-based software for synthesizing inputs and outputs, with the aid of audio and visual media as preferred.

The development of the cross-impact matrix in the strategic planning session involves identifying trends from each of the four categories, assigning a probability and impact score, and brainstorming possible opportunities and threats. In a group session these trends would be presented, discussed, and assigned a numerical value that is the product score of the probability of occurrence and the relative impact on the industry or firm. A cumulative, weighted, or average score from all participating stakeholders would establish relative priority ranking. In the brainstorming phase each participant would focus on the highest-ranking trends and develop original ideas associated with the interaction of these trends or forces taken two at a time. The resulting opportunities and threats could be further prioritized based on the product scores of the interacting trends. Of course, a natural tendency for growth-oriented firms and new ventures is to focus on opportunities in the entrepreneurial planning process.

The matrix output of the brainstorming sessions could be further developed as innovations that capitalize on new opportunities or minimize related threats. Innovations can be articulated as potential new markets, applications, processes, products, supply sources, services, and organizational structures, as suggested by entrepreneurial literature (Schumpeter, 1939). The concept of innovation has been recently expanded by the advent of the Internet, which can facilitate new combinations of transaction architecture and exchange mechanisms for electronic commerce (Amit & Zott, 2001). These ideas thus become the focus of the remaining strategic planning process. The firm's relevant internal factors (strengths and weaknesses) are used to assess the feasibility of the innovation as part of the overall strategy formulation and implementation process. From this assessment, feasible radical and incremental innovations and

supportive infrastructure and systems, are endorsed that are relevant to the firms core competences. Consequently, brainstorming efforts produce radical innovations of new products or services can be commercialized and new markets can be developed. Incremental innovations of new processes, supply sources, and exchange mechanism can be exploited. Support infrastructure for innovations can materialize as new organizational structures and information systems, as well as human resources.

As depicted by the second S-shaped curve in Figure 2, new innovations adopted by the firm initiates a new resource life cycle. The discontinuity gap between resource curves represents the time lapse between innovations. The dotted line of the arrow suggests that the discontinuity gap can be closed sooner if the innovation process starts earlier, before the value of the previous innovation begins to decline. A proactive environmental scanning process and strategic visioning can therefore shorten the time lapse between innovations and avoid declines in entrepreneurial rents.

CONCLUSION AND DISCUSSION

This paper proposes a strategic visioning model for facilitating and formalizing innovation and creativity in the entrepreneurial process to anticipate and bridge the gaps of technological discontinuities. The model contributes to the literature by incorporating the theory of bisociation into the environmental scanning process. By considering the interactive effects of environmental factors, a higher order of brainstorming activity produces more unexpected and novel discoveries and innovative ideas. Instead of the single dimension approach that is prevalent in creative environments limited to a technology focus such as the R&D department, the creative process can be directed to consider other environmental contexts. As Koestler's (1964) theory of bisociation indicates, the value of the new idea is increased since the two

external factors are from different environmental contexts, and therefore independent. By directing this brainstorming process toward the intersection of independent domains, firms can benefit from cross-fertilization of ideas from different stakeholders with contrasting perspectives. We should expect these ideas to be richer and have greater potential for radical breakthrough, not just from a technological perspective, but a discovery that might create a paradigm shift in the societal environment.

As Figure 2 indicates, the resulting opportunities and threats can serve as a basis for brainstorming creative business ideas. Although these brainstorming interactions are typically in a face-to-face strategic planning session with a trained facilitator, an alternative to this process is an Internet-based or video conferencing application, with pre-session training, software support, and consulting intervention for processing output. Software developed for this process is used to synthesize the trends into related categories and calculate their priority value. Original ideas from the opportunities and threats are tracked and consolidated for relevance and duplication. Participants are able view the inputs and ideas of others in real time or offline, assess the quality of ideas, assign a quality rating, and generate a report summarizing the best ideas and identifying the primary contributors. A reward or compensation system, as well as, proprietary interest in the resulting innovation, can be based on a quantifiable and documented level of contribution, particularly in a computer-based visioning process.

Innovative ideas with potential for commercialization must be filtered through the firm's internal factors assessment to determine if innovations match well with the organization's strengths and weaknesses. Unfortunately, this process often becomes the graveyard of innovative ideas, depending on the resources, management style, and culture of the firm. At this point, there is more focus on limitations and constraints, rather than the freewheeling creative process of brainstorming. The risk of extinguishing good ideas is an unfortunate reality at this

stage. Incremental changes described as reengineering and continuous improvement projects often fail because the participants lack the vision, skills and/or authority to redesign the corporation and its strategies, which is needed to acquire new resources and develop new core competencies (Clemmons, 1995). In general, innovation is more likely among organizations that have the necessary resources to innovate (e.g., due to organizational slack or technical expertise), a strong motivation to innovate (e.g., due to high perceived benefits or needs), and a general organizational climate conducive to innovation (e.g., due to positive managerial attitudes toward change) (Fischman, 2001).

The Strategic Visioning Model has been developed and used in teaching futurist and strategic planning undergraduate and graduate business courses by the author, but future research is needed to validate its effectiveness. This type of model does not lend itself to quantitative hypothesis testing and empirical validation. When searching for radical or incremental innovation, thinking “outside the box” is necessary, and therefore not subject to the limitations of linear analysis. Qualitative methods such as case studies are an appropriate alternative to study and document the effectiveness of the model. There are quantifiable elements of the model, however. Values could be assigned to the relevance or importance of trends as well as the probability of occurrence. This quantification could help prioritize a large volume of trends, as well as, the opportunities and threats that can be generated from the creative process. More interactive combinations are possible than two at a time; but just as the interactive effects in multiple regression analysis become difficult to interpret beyond the three-factor model, so does the interpretability of a complex cross impact matrix. Computer software applications could facilitate the synthesis and interpretation of more complex cognitive mappings of the creative process. Future research should focus on case study methodology that can show examples

successful strategic visioning processes and their subsequent innovative ideas and implementation projects.

Taking these innovations to the next stage of the strategic planning process can be challenging, but rewarding. In an opportunity-centered approach, innovations can be evaluated qualitatively based on their relationship to the firm's critical success factors and core competences. Alternative corporate, business, and functional strategies that are a product of these opportunities/threats and the firm's strengths/weaknesses can be developed using a SWOT matrix. In a corporate or new venturing context, a feasibility or cost-benefit analysis can assess the revenue and profit generating potential of new products, processes, services, and market ideas that result from brainstorming innovations. Risk assessment becomes important at this stage, particularly when considering the commercialization of a product or service.

The speed at which the destruction of competences occurs is partially a function of competitive forces. Resource curves can be flattened or shortened by the innovations of competitors who may concurrently introduce new products, processes or services during the subject firm's munificent period. The success of first movers may generate market signals to competitors who benefit from late adoption when technical standards and early designs flaws are resolved. The slope coefficients of competitors' resource curves may also overtake the first mover's growth in resource value because of incremental innovations in processes and supply sources or when market acceptance is better established.

This Strategic Visioning Model provides managers with a systematic process for brainstorming new ideas, which is an important antecedent to triggering entrepreneurial events. Establishing a nurturing culture for innovation is also critical to capitalize on these innovations that can potentially be valuable, rare, and inimitable sources of competitive advantage. Without a proactive approach to generating innovations, new and existing firms will be subject to the

eventual discontinuities of their existing distinctive competences. The Strategic Visioning Model can therefore, provide a unique approach to strategic renewal for academics, managers, and entrepreneurs. When this approach to environmental scanning and brainstorming new ideas is fully embraced and properly executed, the results can facilitate the process of innovation and help bridge the gaps of discontinuities.

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