

Strategies for advancing organizational innovation

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ABSTRACT

This paper offers strategies for advancing organizational innovation and offers an outcome based definition of innovation suited to both for-profit and non-profit organizations. We explore the issues related to structural innovation - that capacity of an organization to become innovative. Starting with the premise that innovation and creativity can be taught, organizations should develop a balanced approach between innovation in organizational strategies and individual training programs so that individuals will be secure in the organization's effort to innovate. Institutional reward policies for innovation may be more successful if management and employees have similar training on which to build personal innovative skills. By drawing on a broad range of innovation research and literature, a basic framework or model is proposed to assist in identifying opportunities for overall innovation improvement. Our review of the literature suggests that innovation training should not be limited to the R&D division but should be fostered throughout an organization.

Keywords: Innovation, Creativity, Organizational Innovation, Teaching Innovation, Individual Innovation

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IMPROVING ORGANIZATIONAL INNOVATION – A TOOL FOR GROWTH & DEVELOPMENT

In the discourse on reinvigorating the economy, few topics have been cited more frequently than innovation. Politicians, business support organizations, and media commentators, have recognized the importance of unleashing innovation to stimulate the economy. An implicit underlying assumption in this commentary is that existing organizations that have fallen on hard times are not innovative. For many, the term innovation offers an intoxicating elixir that promises prosperity.

Over the past twenty-five years, the chorus of commentary from the many public sources has triggered the interest of business scholars who have dramatically increased the number of presentations, journal articles and books on the subject. An early contributor, Peter F. Drucker in “Entrepreneurship and Innovation,” recognized the reality that innovation and successful entrepreneurship are intertwined (Drucker, 1985, pp. 30-36). In the context of new ventures, Drucker suggested that the process of creating a new firm with the hope of realizing wealth requires creating a product or service that exceeds the value or quality of competitive offerings. The ability to create such a product or service and implement a successful market strategy will usually require innovation and will create new jobs needed for economic growth. New firms are not the only path to wealth creation. Within existing organizations, Drucker also proposed that innovation can be a systematic process; that is, managers can directly and positively influence innovation with resulting improvement in products, processes, and profits. This is the approach we advocate in this paper.

Leaders in business higher education have concluded that innovation is a skill set that can be developed along with knowledge transfer in business education programs. Specifically, “when it comes to innovation, management education should focus as much on developing skills as transferring knowledge.” Further, “managerial skills take on special importance because innovation activities involve ambiguity, change, and risk, which in turn amplify the need for leadership, communication and collaboration” (Sullivan, 2010, pp.50 -55). This position by higher education leaders leaves unanswered the nagging but vital question of whether organizations can develop “innovative managers” without the involvement of professional business education. We believe it is not only doable but necessary for revitalization.

As a management skill set, innovation is perceived to be much broader than entrepreneurship skills. Yet, many higher education programs that promote innovation are included in entrepreneurship activities. The focus is on how to manage innovation and not on how to improve innovation within the organization. Management education leaders observe that innovation requires “more integrative thinking and integrated curricula,” and people who are capable of thinking across knowledge gaps. They suggest that business schools should develop and provide management skill training on how to manage innovation (Sullivan). As we strive to offer useful tactics and strategies for managers to advance organizational innovation, we must first establish a workable definition of innovation and pinpoint its implications for advancing strategies to develop more innovative institutions.

For this paper, innovation is defined as “creativity converted to the solution of problems for the benefit of the customer or to the advantage of the vendor that creates value that is rewarded by increased sales or revenues; with either increased profit or increased resources.”

PERSPECTIVES ON INNOVATION

Numerous books and hundreds of articles have been published on the subject of innovation. Drucker described innovation as “the act that endows resources with a new capacity to create wealth” (Drucker, 1985 pp30-36). While he did not define the “act” itself, he cites examples of innovative “acts” that enabled increased sales, increased profits, or greater productivity. For instance, Cyrus McCormick invented installment buying, thus enabling more farmers to purchase farm equipment; another idea was to move a truck body off its wheels directly into a cargo vessel, quadrupling the productivity of the ocean-going freighter. Drucker also noted that innovation does not have to be technical in nature; it can be what he called “social” innovation, and he offered the example of textbook development as making possible universal education, allowing teachers to train more than one child at a time. Today, the digital revolution has enabled Apple and other producers to extend learning opportunities well beyond a fixed classroom to hundreds and thousands of students in myriad locations. Social media (Facebook, Twitter, Snapchat, etc) have radically changed interpersonal communications as well as organizational interactions and promotion.

In his book, “The Myths of Innovation,” Scott Berkun proposes that a key attribute of an innovator “is the ability to see a problem clearly, combined with the talent to solve it” (Berkun, 2007, p. 7). The important point here is that innovative solutions must produce a product or service of value (to the customer) and profitability (to the seller). This ignores the term creativity in the proposed definition, but the implementation of a creative idea must result in lowering costs or raising sales or both to create “value” for the buyer or stakeholder.

Critically important, it must be understood that innovation is applicable to both non-profit and governmental entities as well as profit oriented organizations. The proposed definition encompasses new firms, established businesses, not-for-profits, and governmental institutions. As business academics, we are trained to focus on profit oriented institutions. However, we clearly recognize the value and importance of successful innovation in not-for-profits and government agencies as evidenced by recent implementation calamities in the Affordable Care Act (Obamacare).

While innovation is certainly a key part of entrepreneurship, it has been expanded to incorporate established organizations through “intrapreneurship” and in fields sometimes unrelated to “business.” Three highly regarded entrepreneurship scholars later supported this extension of innovation to encompassing activities outside of initiating new ventures. Professors Kurakto, Goldsby, and Hornsby wrote “innovation and entrepreneurship are intertwined because successful entrepreneurs have to be innovative to be successful.” And they define innovative thinking as “beyond the mere creation of business (Kuratko, Goldsby, & Hornsby, 2012, pp. 9-19).” That innovation has become a concept whose boundaries exceed entrepreneurship has become a common theme among a broad range of researchers: in innovation and health care (Dagytè, 2010, pp. 13-15; Staren, Braun, & Denny, 2010, pp. 54-62); in promoting arts education (Trotter, 2008, p. 9); in those looking to measure the value of investments in innovation (Sood & Tellis, 2009, pp. 13-15); in those working on the implications of innovation on organizational design (Love & Roper, 2009, pp. 273-290); and in the psychology of creativity and innovation in the workplace (Antonioli, Mazzanti, & Pini, 2010, pp. 1-2).

We respectfully submit that the concept of problem recognition along with the value proposition for both for-profit institutions or non-profit entities should be integrated into a good working definition of innovation. Our definition encompasses businesses, non-profits, and

governmental organizations. The emphasis is on “solving problems” and the creation of value. The importance of this definition is that in developing strategies to create innovation, both “opportunity recognition” and problem solving must ensure that the innovation provides value. For a business, this concept of providing value means that the “solution” must be accomplished while maintaining or enhancing profitability; for a non-profit or governmental agency, the concept of providing value means that donors, clients, and taxpayers perceive value that increases either their satisfaction or their financial or political support for the entity. Figure One illustrates this proposed definition.

CONCEPTUAL FRAMEWORK FOR THE DEFINITION OF INNOVATION

As can be seen, the components of the proposed definition: creativity, problem recognition, implementation and value are all required to support innovation. Alone, none of these components results in innovation. Without creativity, neither an individual, team, nor organization will be able to convert a problem into an opportunity for innovation. Successful implementation means creating additional value for customers at a price that reaps higher profits for the firm. While we do not offer a comprehensive compendium of implementation strategies and skill sets useful in implementation, the offered examples provide helpful insights into the process of strategy implementation to create an innovative organization. We recognize that there will be failures along the way; but success must add value on both sides of the transaction. Our definition of innovation does not recognize “unsuccessful” efforts at innovation.

FROM DEFINITION TO STRATEGIES

Having proposed a definition of innovation, the next issue is how to frame strategies to advance innovation within an organizational context. Most research in the field suggests that there are at least two dimensions to advancing innovation: 1) increasing an individual’s ability to innovate (Kaufman, 2010), and 2) improving the organizational environment to foster innovative behaviors that accelerate innovation (Carlo, Lyytinen, & Rose, 2012, pp. 33-34; Dagt , 2010; Thursby, Fuller, & Thursby, 2009, pp. 389-405). Research has examined the conflict between an open innovation approach to product innovation involving outside experts to facilitate decision making versus retaining all decisions within the organization (Almirall & Casadesus-Masanell, 2010). Research has also suggested that superior performance is not driven by technological spillovers from parent to spawn, but rather by nontechnical knowledge related to regulatory strategy and marketing (Cavagnoli, 2011) p 185). Thus, one strategy is to involve all employees in a creative course designed to create a corporate culture and processes to stimulate continuing innovation (Dagt , 2010), p 42).

Previous work clearly suggests that no individual can be creative all the time. Thus, teams are employed to address issues and problems and in successful teams, the creative role may well rotate among members. In some cases, creative success might derive from the “devil’s advocate” who by challenging some team assumptions, moves the team to investigate additional inputs that hopefully lead to ultimate success. Other members may perform valuable support services such as data collection, analysis, and research, but not contribute creatively to the outcome. Roles can rotate as different problems or issues are considered. A key issue for organizations is how to encourage collaboration to connect people, ideas, and resources that would not normally interact with each other (de Sousa, Pellissier, & Monteiro, 2012) p 26-34).

Social media, electronic meetings, and chat rooms all offer potential alternatives to traditional methods.

Successful innovation has as its outcome solutions that are economic and/or produce value to the customer in the form of new or better products or services. Not all creative ideas meet that test. Kodak, the fabled film and camera company, faced increased competition from the Japanese and rapidly shifting technology toward the end of the twentieth century. Continuing to develop film capability because its executives saw Kodak as a chemical company rather than as a photographic firm, Kodak failed to react quickly enough to the challenge or opportunities of digital photography. Under its new CEO, Antonio Perez, the company has successfully reinvented itself and in 2013, emerged from bankruptcy protection as a much smaller firm focused on packaging, graphic communications, and functional printing. According to Perez, the company now focuses on what it does best and looks to its partners to help with the rest (Associated Press interview with CEO Perez, reported in *The Journal*, Seneca, SC, September 4, 2013, pD2). Continuing to innovate, the company is investing in related technologies such as touch screens for smartphones and tablets, and looks to extend the technology to smart packaging. These moves evolved from Kodak's strong R&D capabilities and its experienced employees even in the face of substantial financial hardships, rapidly developing technologies, and a dramatically altered political and socio-economic climate. Ultimately, performance not effort will determine the future of Kodak. If Kodak survives it will be because they were innovative and generated value to the customer at a profit.

While Kodak's error was in hoping they could continue to provide a chemical based solution to photography rather than exploit digital photography, sometimes aspirations are not met because technology has not yet advanced to that point. This belief in technology must be grounded in reality otherwise both business decisions and public policy decisions can result in heavy losses to the company, taxpayers or donors. An example might be the federal government's desire to replace oil and gas with alternative sources of energy (Solyndra fiasco). Still other ideas are implementable, but at such cost as to not be economic (such as setting up a colony on Mars). Even politically appealing concepts such as creating an egalitarian society where everyone is "equal," have allure to some, but sufficient political consensus for such a society has evaded humanity. Innovation requires more than good intentions, it must be based on current technology.

Our definition of innovation therefore suggests the illustration of Figure Two.

SERENDIPITOUS DRIVERS OF INNOVATION

While some innovations are the result of deliberate investigation triggered by market research, there is substantial evidence of innovation as the result of accidents that innovative entrepreneurs recognize as opportunities (Austin, Devin, & Sullivan, 2008)(p R6). In 1994, Ryan Jarvis had a tragic accident on the basketball court at his high school. While scrambling for the ball during a pick-up game, Ryan, 16, got elbowed in the face. The blow severed his optic nerve and blinded him in his right eye. His father, Ed, responded by designing safety glasses for athletes converting a tragic accident into an innovative business opportunity (Hood, 1997) (p 14).

The story of Howard Hughes demonstrates that opportunity recognition is not limited to current entrepreneurs/innovators. As a daredevil pilot who often would be the only volunteer to fly planes of his design, Hughes was involved in several almost fatal crashes during his life. Unwilling to bail out of the plane because he wanted to know what was going wrong, Hughes

rode his plane into a crash that nearly broke every bone in his body. During his year-long recovery in a California hospital, Hughes was frustrated by his immobility. He called for some engineers from his company (Hughes Tool) and instructed them to build him a bed with a motor and control switch on a cord that would allow a patient to raise and lower the front and rear of the bed, thus inventing the modern hospital bed (Coviello & Joseph, 2012, pp. 87-104) .

Rather than focusing on luck, it may be more pragmatic to examine potential triggers that prompt innovation. In some cases, that trigger is the ability to recognize an unmet need. So, developing and providing training for individuals to recognize need is an essential step and requires some level of curiosity. Ed Jarvis developed his product and company in response to his son's sports accident that left him blind in one eye. Howard Hughes spotted several "needs" and applied his engineering staff to solve the problem.

A Harvard Business case suggests that innovation can be the result of serendipity. The research accident that led to the discovery of synthetic rubber is one of many examples of scientific experiments that resulted in new products. Other often cited examples of innovation spurred by accidental development were Post It Notes and Gore-tex fabric (Austin et al., 2008),p R6).

OBSERVATION/RECOGNITION OF UNMET NEEDS DRIVES INNOVATION

Sam Walton recognized that people living in rural areas were paying premium prices from mom and pop stores that lacked the volume to provide merchandise at discount. Supporting that concept he took a page from an Army logistics manual of placing stores in a "saturation campaign" that would be serviced by an efficient distribution center. So, efficient distribution was an early key to Wal-Mart success. Additional innovation occurred as the company grew, including the use of microwave technology to transmit daily store sales directly to the distribution centers, reducing the costs of manual inventory and substantially increasing inventory turnover. Further innovation included aggressive use of price scanners, digital technology, and radio frequency identification (RFID) that permitted transmission of orders direct to manufacturing plants, reducing costs to Wal-Mart vendors by eliminating in-store sales personnel. In exchange, Wal-Mart negotiated large volume discounts which protected and even expanded gross margins (Walton, 1989). Interestingly, the innovations were based on solving shopper's problems while using existing technology to streamline logistics, enabling both larger margins and reduced prices (Walton, 1989). "Everyday low prices" was attempted by K-Mart without the innovations in logistics and K-Mart filed for bankruptcy! The lesson for management is that innovation can occur up and down the transaction chain!

CURIOSITY AS A DRIVER OF INNOVATION

Curiosity has long been a creativity trigger as people who explore new concepts bring different perspectives and discover an unfilled need. It is also a key to learning and acquiring knowledge. It was Michael Dell's curiosity about what was inside of the IBM PC at University of Texas which led him to discover that the box was made up of parts that he could order through a wholesale electronic parts distributor. Upon making that discovery, he built a copy (Schumacher & Wasieleski, 2013, pp. 15-37) which he used, and developed a global business as a result. Mark Zuckerberg's curiosity about how he could maintain his "Harvard" contacts led to the creation of Facebook.

VISUALIZATION AS A DRIVER OF INNOVATION

Culturally, U.S. organizations seem to stifle or smother curiosity in order to preserve or maintain the status-quo. For example, all employees have heard the expression “that’s how we do it here.” The message is clear – don’t rock the boat! Just keep on keeping on! The outcome is predictable – very little innovation is encouraged and curiosity is stifled. The question is how managers might overcome some of this embedded attitude. We have discussed how accidents, curiosity and discovery of unmet needs spur innovation. We now turn to another technique: visualization and its utility in promoting innovation.

Breaking the barrier to idea development is the ability to visualize those ideas, whether on paper, on a computer, or through construction of a model or prototype. The role of visualization in making an organization more efficient cannot be overstated, and is an accepted practice in many industries from construction (Goodman, McCorvey, Rhodes, & Tishcler, 2013, pp. 4-7) to product development (“Bang & Olufsen: Design Driven Innovation,” 2006, pp. 1-24). Converting a concept to a model or prototype permits visualization which exposes undesirable product characteristics that would not be so apparent in a two dimensional representation or in the original idea. Model building not only is still being used by architects, but is widely used for product development. New technologies such as three-dimensional CAD software provides companies with a far less expensive means to develop “virtual” models as opposed to making more expensive physical prototypes. The development of CAD programs making 3D visuals of products in the design phase is widely accepted as having improved the speed of new product development. Although Boeing has had difficulties in designing their “Dreamliner,” the fact is the company used 800,000 hours of Cray super computers allowing a shift of much design work to suppliers which allowed for parts to be made world-wide (Boeing). The recent emergence of 3-D printing applications of products used in the space program and in health care further illustrate the potential of modeling technology and visualization.

Visualization also has been applied to better understanding and manipulating of multidimensional databases (Zhou & Li, 2012, pp. 1090-1102). Research has shown that visualization techniques can help managers better understand raw data in making decisions. That is one reason why Excel and its predecessors allow for the creation of graphs and pie charts from spreadsheets. The use of visualization methods allows managers of services such as IT support, customer reservations, or accounting, which are provided from one or more remote service delivery centers, to better manage the process of pricing multi-year service agreements (Kaul, 2012, pp. 347-367). Further, other researchers have found that collaborative computing and visual computing have tremendous potential to improve performance of both individuals and teams (Nagji & Tuff, 2012, pp. 66-74).

VISUALIZATION AND PATTERN RECOGNITION CONTRIBUTES TO INNOVATION

Converting data for decision making is also common practice. The visualization of complex processes (through PERT or GANTT charts, for example) allows decision makers to “see” patterns not otherwise recognizable from spreadsheet data. In this manner, visualization unlocks deeper understanding of the subject and the ability to observe how patterns may be used to develop creative solutions. Sharing production schedules with suppliers allows BMW and other manufacturers to implement just-in-time-just-in-place inventory delivery and use.

Developing innovation skills for employees should include opportunities to practice creative strategies. We have defined those creative strategies as: a) curiosity, b) visualization, c) ability to see solutions to unrecognized problems, and d) the ability to reformulate processes to improve efficiency. Having defined some skills that allow an individual to become innovative, we now turn our focus to the issue of how to make an organization operate innovatively.

Unfortunately, many management textbooks expound on brainstorming techniques and largely ignore the issue of developing individual creativity. In U.S culture, as discussed earlier, creativity springs from individuals, whether working alone or as a member of a team. In other cultures (e.g. Eastern group-oriented cultures), firms find more emphasis on a team/group process with little focus on the individual (Danis, W. & Dollinger, M. 1998; Dollinger, M. & Danis, W. 1998). Other works focus entirely on “managing” innovation as opposed to “successfully innovating by adding value,” addressing the issue as strategies for protecting intellectual property, information systems design, or by creating successful rewards or incentives to stimulate innovation. While useful as a management skill, these activities miss the target of developing more creative and innovative personnel, thereby reducing opportunities for implementing successful innovations. In some ways, this approach to innovation is like teaching someone a) to snow ski by showing videos of Olympic competitions, or b) to fish by showing videos of competing fishing professionals. Teaching managers to “manage” innovation is quite different from teaching employees to become more creative/innovative individuals and to develop new opportunities for the organization.

STRATEGIES FOR EMPLOYERS

Offering strategic approaches for developing individual innovation is the first step in developing an innovative organization. Designing workplace strategies for encouraging innovation is more complex. An analogous challenge is creating a company that maintains a high standard of ethics. As we know from Enron, a company can have an award winning Code of Ethics; yet, corporate behavior from executives to entry level employees was corrupted by the firm’s existing culture. Thus, the outcome was completely opposite what was stated or implied in the existing Code. In a like manner, simply writing innovation into a mission statement or stating that a company will become innovative isn’t going to produce innovation. Figure Three presents some issues related to fostering corporate innovation.

Figure Three suggests that complexities involved in implementing innovation exist throughout the functions of an organization. While innovation or change may be required in logistics, for example, what happens in shipping is not isolated; it will impact human resources, manufacturing process, etc. What further complicates change in large organizations is that some of the pillars of effective management in manufacturing, e.g., making sure that all production standards are met, also promote resistance to change by those who have to repetitively meet standards. Total Quality Management, Lean Six Sigma, and ISO 9000 are among current popular strategies employed to assure consistent service or product quality. These conventions convert activity into compliance consistency (hence the arrows in the middle of the circle). The outside boxes suggest factors that challenge existing processes and create a dynamic operating environment. In every instance, continued success requires being able to affect appropriate change to meet shifting demands and conditions. Developing employees to “think out of the box” often conflicts with standards to control costs and maintain quality. The fundamental

question is, and always has been, how to encourage innovation in an environment that is organized and devoted to promoting consistency?

Lesson 1

Without a function-wide process to develop sound ideas for improvement or modification of products or services, simply attempting to unleash individual creativity can create frustration among employees and managers. There is nothing more frustrating for individuals than to return from innovation training and attempt to inspire others to change routines, orientation or procedures according to an unfamiliar scheme. In his experience, Stephen Covey learned that if only a few employees received his training, those few would be excited by the learned insights, but frustrated with colleagues who could not relate to an unshared experience. When an entire group was given the training, then significant strides were made. Anecdotal evidence suggests that organizations wanting to inspire innovation must consider a broad implementation strategy to train an entire division or department with a common vocabulary and set of experiences.

Lesson 2

Emphasize quality and consistency while encouraging experimentation and innovative efforts. The stories of Xerox serve as an excellent example of what can happen if only part of an organization is allowed to be innovative while senior management remains focused on traditional practices. At Xerox, senior management was focused on operational production where consistency and quality control required standards and strict control of the organization. While Xerox had an extremely productive and inventive new product R&D team, the company was unable to capitalize on the potential of discoveries which included: tele-copiers (which became fax machines that were licensed to Japanese companies), Graphic User Interface (which became the basis of Apple and Windows programs), and smaller copy machines (also licensed to Japanese competitors). Even the technology that is still in use for computers (fonts) was initially developed by Xerox (interview with Chairman Gavin, 1986). This example illustrates the inability to execute innovation strategies successfully without total involvement by all personnel, including senior management. Xerox is not alone in its inability to fully implement or commercialize internal research and development. When executive attention is concentrated on operational concerns and short term profit, new ideas are often viewed as diverting attention from consistency in product quality or cost control. Management must have the ability to work the day-to-day operational issues, with one eye on the horizon. This is much more complex than multi-tasking. It requires an intellectual agility to switch between operational concerns and visionary strategic skills. Organizations in the U.S. need a more sophisticated understanding of the relationship between risk and reward. For upper management to be successful in creating a resilient, responsive environment, they “must be supportive of creating an innovative environment” (Carlo et al., 2012, p. 865) without creating disrespect for consistency policies and procedures. In other words, management must not only proclaim a commitment to innovation, they must translate the talk into structural and organizational changes and incentive systems that maintain support for adherence to rules while also promoting new ways of increasing quality while decreasing costs. The challenge is to develop the necessary training and education where innovation and experimentation exist collaboratively with quality standards and consistency.

To address the challenge of training management to accommodate both change and consistency, a look at some corporate history provides anecdotal examples of strategies employed by senior leadership to motivate their subordinates to embrace change to meet growth goals. Harold S. Geneen, the chief executive officer of ITT, took the company from \$765 million in annual revenue in 1959 to \$16.7 billion when he retired in 1977. The conglomerate consisted of over 1,000 companies in a diverse set of industries located all over the world. A controversial CEO, Geneen grew ITT through acquisitions. He would only acquire firms that were either number one or two in their markets. Although he retained the presidents of the acquisitions, Geneen required detailed quarterly reports from each president. The one demand by Geneen was that the presidents had to maintain their first or second place in their markets or they would lose their job. When he stepped down as chief executive at the end of 1977, ITT was the 11th-largest industrial company in the United States, a colossus with more than 375,000 employees (Kenneth H. Gilpin, 1997). By focusing on outcome, Geneen fostered tremendous innovation among the companies he managed. The firm developed numerous innovations such as the use of television to promote Avis into the second largest rental car agency and the use of continuous ovens that permitted Intercontinental Bakeries to enjoy great efficiencies in producing breads and cookies (Kenneth H. Gilpin, 1997). In similar fashion, Jack Welch and his stringent demands for growth coupled with a highly competitive management style and automatic termination of managers in the bottom 10% produced a highly aggressive management team (Kenneth H. Gilpin, 1997).

ORGANIZATIONAL STRATEGY OPTIONS

With these lessons in mind, there are organizational strategies useful in promoting corporate innovation. One is to instill motivation among the corporate or divisional leadership through a combination of reward and fear of termination if aggressive growth or market positions are not maintained. As the examples of Harold Geneen (ITT) and Jack Welch (General Electric) and (some of our students who watch “The Apprentice” would add) Donald Trump illustrate, developing or hiring executive leadership that can effectively deal with operational concerns while maintaining visionary zeal for innovation may be a critical first step. These leaders had a simple solution in managing the CEOs of their subsidiaries: if they wanted to keep their jobs they had to meet benchmarks of growth and those CEOs were terminated if their subsidiaries failed to maintain number one or number two positions in their markets. Expecting innovation to bubble up without support and encouragement at all organizational levels is unrealistic. Change always arouses fear, insecurity and resistance which can only be overcome from above. As more MBA and graduate degrees offer training on organizational change and human development and more emphasis is placed on curriculum development fostering managerial skills related to innovation, the pool of such candidates may be increasing (Austin, Nolan, & O'Donnell, 2009, pp. 337-355; Bendell, Doyle, & Black; Johnson, 2010, pp. 337-355; Lampel, Jha, & Bhalla, 2012, pp. 71-85; Mustar, 2009, pp. 418-425). But, this is not the only answer.

A second strategy is to employ methods promoting internal organizational development. An example would be requiring all employees to complete a business communication course that includes internal memo writing for employees to better express their ideas to management (Reave, 2002, pp. 8-21). Another example would be to develop programs or courses on the relationship between science and technology to encourage younger employees to better

understand how scientific research leads to technological improvements (Browning & Sanders, 2012).

To illustrate, in order to develop a sales staff that could effectively collect customer feedback on their copier, Xerox developed their own training program for their sales staff. Their sales training strategy was designed to encourage curiosity, visualization and submission of new product features. New hires were placed in a class room, and instructed to take a copier apart, label all parts, and draw diagrams needed to reassemble the working machine. Only lunch separated the disassembly and reassembly. The final exam at the end of the day was to see if the machine functioned properly! One of the major problems detected was that changing toners was a messy task which eventually led to cartridge design improvements. The company's major objective was to make sales personnel more confident in their understanding of the product, but the program also improved relations between sales and repair/service staff. Whether this training program may have contributed to helping the sales force become more innovative in their sales efforts is unknown. However, what **is** known is that those who began their careers in Xerox sales were highly sought after by competitors and even by companies outside the copy business because of their sales success.

A third option involves enrolling employees in industry conferences and trade shows for the purpose of stimulating fresh ideas from participants. While many of these conferences are at temptingly distractive resort locations, the air of having fun makes the hours of lectures and seminars seem less punishing. Equally important is that the change of scenery invites creative thought! Traveling and a different environment stimulate different sensory responses. The smell of flowers, the fresh evergreen air of the mountains, and the sound of the sea remind us of certain locations and events that stimulate innovation and creativity.

Capitalizing on this fact, Skandia Financial Services went so far as to build a separate building called the Knowledge Café for the purpose of conducting company meetings. The rooms were fully climate controlled, and had built in devices that could change the scent of the room. Each room had 5 projectors that would project photos of a particular location: a crowded street, a residential area, mountain views, desert views, etc. and a sophisticated sound system. Together, this apparatus was designed to make meetings more productive if the “setting” was manipulated (based on interview with Leif Edvisson, 1990). While the Skandia example of “design” for innovation sounds radical, Googleplex, the headquarters of Google, has a design that “has employees sharing work cubes and huddle rooms, employees bicycling down the hall to get to meetings, and outdoor seating for idea-discussion sessions, and health-food cafes.” (Carlo et al., 2012, pp. 865-895). Currently, Google is building facilities on barges in San Francisco and Portland to serve as training centers with lanais, bars, other comfort amenities to train people on new technology (MSN, Nov 3-7, 2013). Innovative companies create innovative workplace environments.

Finally, employers must remove security concerns for employees proposing creative ideas to improve performance. Traditionally, a workplace issue that may well discourage employees from recommending innovations is fear of losing their job. Why would an employee want to recommend a program that might eliminate their job because they have a plan to streamline the job function? For many years, unions sought work rules and contractual terms to protect jobs from changes in processes or technologies. Now, unions are working closely with management to reduce or eliminate restrictive rules to improve competitive market position and increase sales. Employers must learn to focus on efficiency and effectiveness and support employees (including preserving jobs) for bringing improvement suggestions forward.

At the other extreme, the power to collect dues and “invest” them in political races, has enabled public service unions success in obtaining generous compensation packages that now exceed those in the private sector. A major challenge for management in the public sector is how to incentivize innovations from those most likely to see inefficiencies and most likely to fear loss of their jobs. In this regard, non-unionized companies have an advantage in terms of being able to move employees to other work or to set them up as independent contractors. Federal Express took advantage of this strategy by creating independent contractors for ground delivery while modernizing their tracking system and improving both efficiency and earnings for their contractors (Yoon & Deeken, 2013, pp. 21-23). Setting up a bonus plan to reward those who offer ideas that result in innovations (such as job rotation and retraining programs that result in operating efficiency improvement) are among the type programs that can reduce fear of change and invite innovation.

Business literature is replete with examples of team discussion techniques and there are numerous consultants who offer training on how to conduct meetings to foster innovative ideas. Google, for example, offers employees up to 30 percent of their work time to develop their own innovations as did 3M Corporation with its employees (Carlo et al., 2012).

Figure Four reflects the previous discussion on how an organizational commitment to innovation requires a holistic perspective on organizational development. This illustration is useful in identifying some of the issues requiring a corporate or organizational strategy to promote innovation. Innovation can and should occur in any organizational activity that consumes time or resources including: marketing, logistics, sales strategies, external communications, product or service design, manufacturing or service systems, accounting, finance, legal, human resources. In the abstract, while Americans generally view change as positive, when it applies to them personally, they may resist innovations as a threat to their job security or to the security of routine. To reduce this resistance, management must establish a trust relationship with employees. The relationships between departments in an organization may be threatened by innovations (as depicted by the gears) as well as by corporate culture or tradition.

CONCLUSION

To create an innovative organization, we have proposed that attention should be focused on two strategies directed toward: a) improving each employee’s understanding of what innovation is and how the organization is committed to that objective, and b) developing organizational strategies that promote innovation. To reduce risk organizations should pilot innovative concepts before committing too many assets. Organizations should not compartmentalize innovation but instead advocate the application of innovative policies and training throughout an organization. There is a tension within organizations that demand consistency of outcomes while rewarding those who bring change and innovation.

Our exploration of innovation is not confined to for-profits. The quest is equally valuable to non-profit and governmental organizations. The public’s demand for government benefits and services is insatiable as opposed to a willingness to pay ever higher taxes to support government activity. Non-profits also face a deficit between demand for their services and the public’s willingness to contribute resources. We have not found scholarly research that suggests that the process of becoming innovative either individually or as an organization differs based on the status of the organization. Quite the contrary, the innovative efforts of the Gates Foundation

in funding new approaches to AIDS education, computers for children in low income schools, and other unique programs reflect the innovative genius of Bill Gates. While the foundation investment is impressive, it is Gate's imaginative approaches to solving social problems that has defined the successes of his non-profit.

It is evident that innovation draws on many disciplines. The connection between innovation and management as it applies to the improvement of products and services is relatively immature. The science of "managing" innovation from the standpoint of protecting intellectual property and commercialization of new technology is much more developed. We have proposed policies and strategies needed to accelerate innovation and to insure an organization's ability to realize its potential, while coping with the innate conflict between the organization's culture that breeds resistance to change in promoting consistent outcomes through rigid standards, and a culture of creativity that embraces chaos and invites experimentation so necessary to stimulate innovation.

Though much of the literature on creativity for business deals with how to manage teams, it is individuals who must learn to think creatively, starting with the recognition of problems worthy of solutions. Organizational structures that are designed to preserve consistency of outcome must become flexible enough to accommodate change; otherwise, the organization will resist and defeat innovation. Hopefully, this paper will stimulate further consideration of our advocacy of a dual strategy of training individuals to be more creative and innovative along with organizational strategies to nurture organizational innovation.

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APPENDIX

Figure One

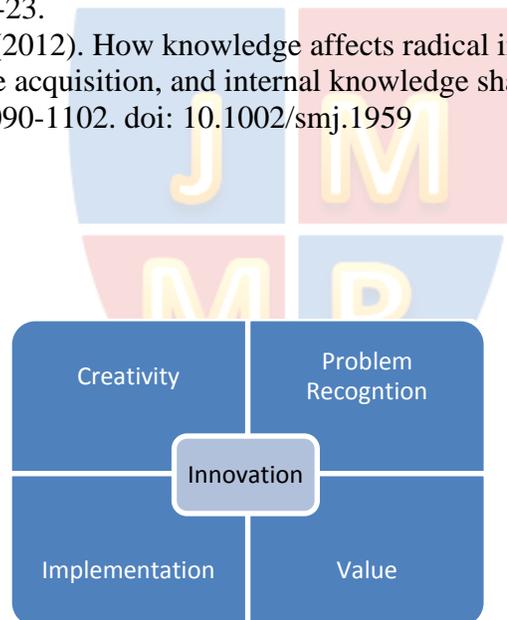


Figure Two

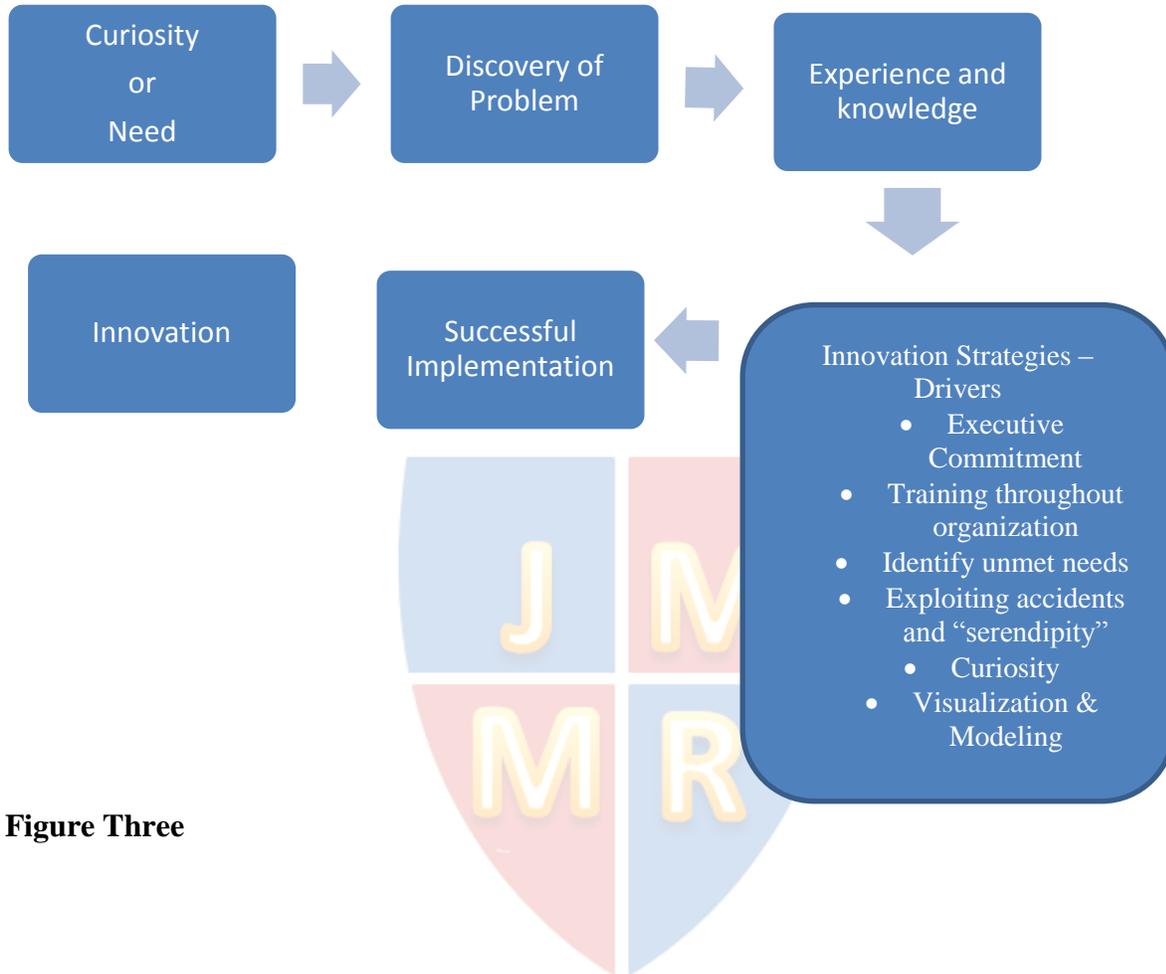


Figure Three

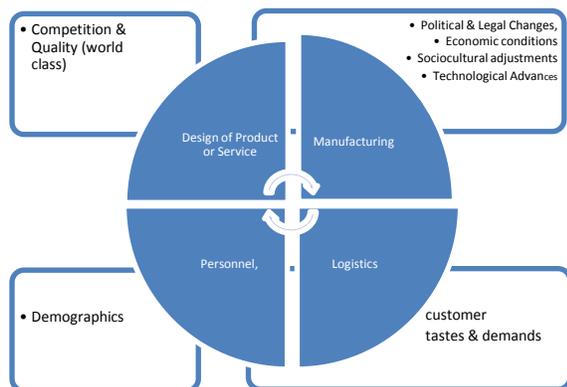
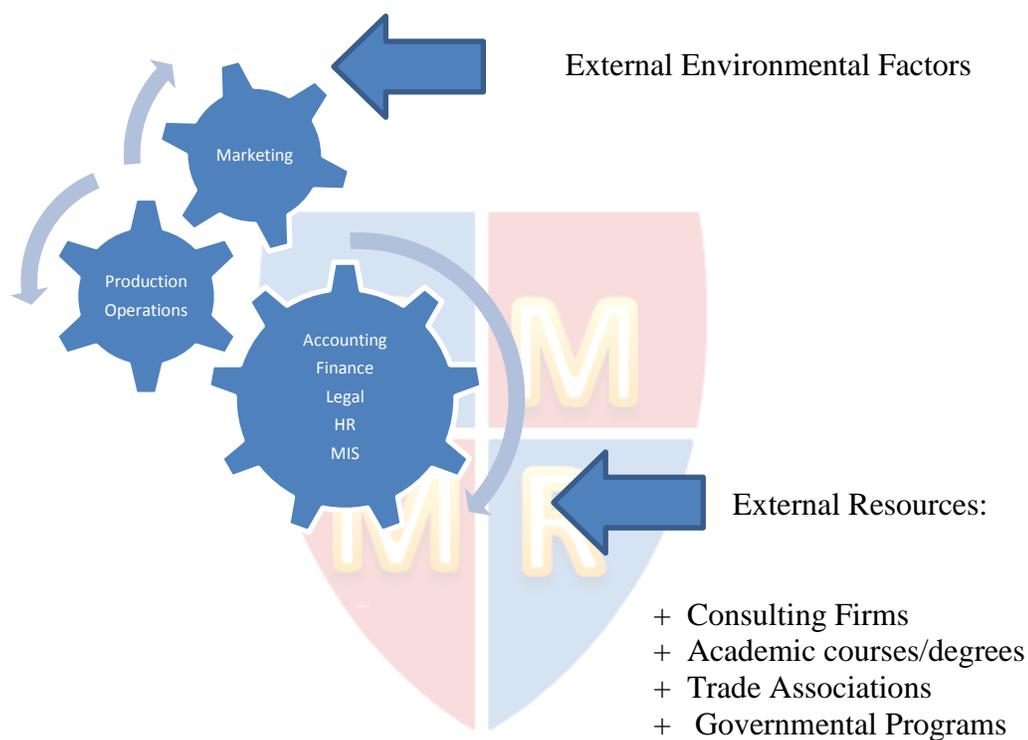


Figure Four

Strategies Advancing Innovation:

- + Top Management
- + Organizational Commitment
- + Curiosity
- + Visualization
- + Internal Process and Coordination of innovation
- + Accident – Serendipity



Factors Slowing or Stopping Innovation

- Fear
- Time
- Operational problems
- Finances
- Corporate culture
- Low creative skills
- Restrictive work rules and union contracts against new technologies