

**What is really driving performance?: The impact of enabling creativity and innovation
within the organization**

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January 14, 2002

Introduction

Many researchers have studied organizational creativity theory as it relates to the work environment for creativity to flourish (Amabile, 1996), characteristics of high versus low innovation organizations (Delbecq, 1985) and what motivates creativity, intrinsically and extrinsically (Amabile, 1997). However, the following research questions still persist. Why is it that some firms are able to leverage several years of innovation to fuel the growth and prosperity of the organization for long periods of time (e.g., 3M's 100 years of innovation), while other firms have very rapid life cycles and are not able to reinvent themselves? What are the drivers of successful growth through innovation? Perhaps the following from 3M's Senior Vice President of Research and Development, Dr. William Coyne, may provide some insight into how a focus on innovation within the organization drives sustainable growth and firm performance: "Our (corporate) vision is that we would like to be the most innovative organization in the world. I can tell you from experience that one still sees a great many misshapen innovations. However, ...given time and support, many of them grow into very pleasing and well proportioned products and technologies."

This paper has a two-fold objective. First, it will attempt to identify what are the drivers that enable and disable creativity and innovation within an organization. In studying innovative organizations such as 3M, what are the resource differences that allow 3M to continually innovate and create while other organizations lack such abilities. The second objective is to show that a focus on innovation and creativity is a performance driver of successful growth. The next section will discuss current theory on creativity and innovation and take a critical look at what current research has contributed to the understanding of creativity and innovation. The later sections will present my theoretical predictions on how resource based management enables

creativity and innovation. This theoretical perspective will also discuss how enabled creativity leads to profitable growth for organizations. There are virtually no studies in the current creativity literature exploring this performance based perspective. From there, a research methodology will be presented to test the research hypotheses linking creativity to organizational performance. Finally, the implications of such a study will be discussed to demonstrate its relevance to current business practices and research perspectives.

The use of creativity and innovation is referenced from a variety of perspectives, including psychological personality traits, cognitive decision making processes, and competitive and organizational measures, such as patents and market advantages. For purposes of this paper, I have adopted the definition of creativity from a performance based perspective. In discussing creativity and innovation, I am referring to the definition established by Amabile (1983:33) where creativity is conceptually defined as “a product or response ... that is (a) both a novel and appropriate, useful, correct or valuable response to the task at hand, and (b) the task is heuristic rather than algorithmic in nature.” “It must somehow influence the way business gets done – by improving a product, for instance, or by opening up a new way to approach a process” (Amabile, 1988: 78). Additionally, references to innovation are quite similar in nature, but focusing more on the process. I have adopted the definition of innovation by Delbecq (1985: 25) which states “innovation is a significant change within the organization or its line of services or products that (a) requires a substantial adjustment in functions and/or structures, and (b) is successfully introduced, decided upon, and incorporated into the organization.” Recent debate in creativity theory (Ford, 2000b) suggests that this definition based on outcomes has conceptual and methodological advantages that are able to facilitate further research on organizational creativity. Both of these definitions are suitable for the basis of this argument as they both focus primarily

on the outcomes of creativity and innovation, which is very central to the arguments being set forth in this paper. In terms of framing the context of the paper, creativity speaks more to the creation of ideas and concepts, while innovation speaks more to the processes of carrying out and implementing these new ideas (Garud, 1999). The scope of this discussion covers both creativity and innovation.

Existing theory

Creativity and innovation has been studied by a wide variety of organizational researchers and business managers within a broad range of research perspectives. Many researchers have targeted the high technology and service related industries to conduct field research because of the high interdependence on creativity and innovation to survive. Conventional perspectives on organizational creativity stem from Herbert Simon's (1960) research which views creativity and innovation from a process perspective. He suggests that creativity is produced in an organization through cognitive decision making processes. Simon's model suggests that the process leading to successful innovation is accomplished in a sequence of steps, beginning with idea generation, then preliminary analysis, decision to adopt and finally implementation on the creative idea. Coulson's (2000) view of the creative process was quite similar, with a focus on the four stages of exploring, inventing, choosing and implementing creativity into the organization. He suggested that creativity and innovation are behaviors that have to be fostered throughout the organization by a measurable process in order to get results.

Delbecq (1985) also provided insight to this line of thinking by comparing high-innovation organizations versus low-innovation organizations. He distinguished organizational differences between high- and low-innovation organizations in that high-innovation

organizations have superior resources, such as earmarked research and development funding, and special committees as dedicated resources to channel innovation throughout the organization. Conversely, low-innovation organizations often suffered from lack of commitment and organizational resources directly related to innovation. His discoveries forwarded the notion of managerial practices enhancing innovation. He suggested (1985) that innovation is based on the following variables: the motivation to innovate, the obstacles against innovation, and the number of resources available. Since then, several theorists (Amabile, 1997; Amabile et al, 1996; Woodman, Sawyer and Griffin, 1993) have explored motivation, stimulants and obstacles as a means for identifying the enabling and disabling forces to innovation and creativity.

Amabile has established extensive research in the area of managerial practices and organizational impact on creativity. In the componential theory of individual creativity (1997), she underscores the three components of generating creativity as expertise, creative-thinking skills, and motivation. Many researchers have demonstrated that the two types of motivation, intrinsic and extrinsic, have differing affects on creativity. Abundant psychology research (Amabile, 1983; Amabile, 1997; Deci, 1971; Ross, 1975; Staw, 1976) demonstrate that intrinsic versus extrinsic motivational factors significantly drive creativity. The Intrinsic Motivation Principle of Creativity (Amabile, 1997) suggests that people will be more creative when their motivation comes from a source of pleasure, passion, satisfaction and personal interest. Research has shown that extrinsic motivators, such as money, provide little value in motivating creativity (Amabile 1997).

Amabile et al (1996) and Amabile (1997) also argue that creativity is stimulated and destroyed by various work environment parameters. Subsequent research (1999) has shown that creativity is frequently undermined in organizations by other business imperatives such as

downsizing, productivity and short-term profit maximization initiatives. Amabile's theory on the impact of the work environment on creativity is evidenced in her critical-incidents study of 120 R&D scientists and technicians. They were asked to describe high versus low creativity events based upon their work experience. The results of this study lead to the KEYS research tool. This tool assesses workplace conditions that affect creative events in organizations. KEYS: Assessing the Climate for Creativity (Amabile, 1996) measures the following parameters that consistently were reported as workplace dimensions that stimulated or impeded creativity:

Organizational Stimulants/Impediments to Creativity:

Organizational encouragement: the encouragement of risk taking and new idea generation, and valuation of innovation throughout all levels of the organization.

Supervisory encouragement: open interaction between supervisors and subordinates, goal clarity, and supervisory support of teamwork and new ideas.

Work group encouragement: the critical aspects are constructive challenging of ideas and shared commitment to projects

Freedom and autonomy: a sense of ownership and expression of one's own ideas or having a say in day-to-day work activities. Research suggests that autonomy in everyday work life significantly adds to creativity (Bailyn, 1985).

Resources: time, money, and people allocated to new ideas and innovative projects. Many researchers (Damanpour, 1991; Delbecq, 1985) emphasize the importance of resource allocation as an enabler to creativity and innovation.

Pressures: workload and time pressures. This area is highly debatable, as arguments are well established that certain pressures act as stimulants or deterrents (Amabile et al, 1996). In this assessment, challenging work is viewed as an enabler of creativity. Any such intrinsic motivators would also fall into this category. However, workload pressures and other extrinsic pressures are viewed as creativity impediments thus having a negative effect on organizational creativity.

Organizational Impediments: internal strife, too formal management structures, conservatism, etc.

These eight scales measure the work environment climate for creativity in various organizations. The contribution of this research is the establishment of a clear linkage between work force dynamics and the creation or destruction of creativity. In this paper, I will build upon Amabile's work and present propositions relevant to measuring the impact of work force dynamics on creativity

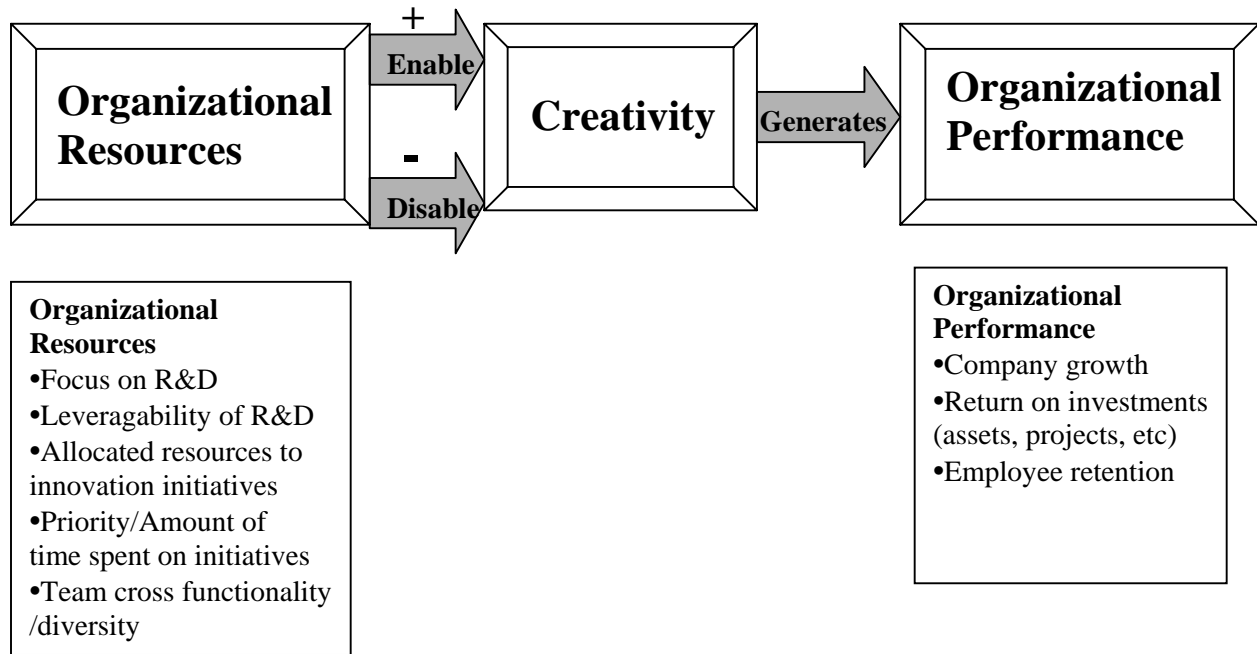
Existing theory has evolved to view creativity from an organizational perspective, providing explanations for the workplace dynamics that affect creativity. Current research streams related to creativity and innovation have several extensions with differing viewpoints. Path dependence and path creation theorists (Garud and Karnoe, 2001) address the historical antecedents of organizational competencies developed through years of innovative activity. They also investigate the path creation that entrepreneurs face in navigating a path for new and innovative ideas. Both Garud and Van de Ven (2001) and Ford (2000) research how strategic change processes influence the innovation process within organizations. Strategic change theories including teleological theory, life cycle theory, evolutionary theory and dialectical theory all give great insight into how organizational changes over time can influence creativity in the domain of managerial decision making. Entrepreneurship researchers Covin and Miles (1999) also study corporate entrepreneurship as a means to foster innovative growth and develop a competitive advantage. However, very few studies empirically explore the connection between creativity and organizational performance measures. There is a dearth of research that aims to quantify organizational performance outcomes to the level of creativity enabled and disabled in the organization. This discussion aims to create new ground in this area of organizational creativity theory.

Proposed theory - Resource Allocations that Enable Innovation

My theoretical perspective explores the connection between managerial resource allocations as potential enablers and disablers of creativity and innovation within organizations. This theory goes one step further to make the argument that creativity and innovation enabled through organizational resource allocations is positively associated with organizational performance. First, I will define the parameters of organizational resources that are needed to enable creativity. On the other hand, if these elements are absent from the managerial decision making process, creativity and innovation will be disabled within the organization.

I propose that the more resources allocated to innovation and creativity, the more value the organization will receive from these resources. Resources that I predict will enable or disable innovation and creativity include the following: 1) focus on research and development, 2) leveragability of developed technologies, 3) human resources allocated to innovation initiatives, 4) prioritization of innovative initiatives and 5) cross-functional/diverse teams to manage initiatives (see figure 1).

Figure 1
Organizational Creativity Drives Performance Model



Focus on R&D

A research and development focus is essential to fueling creativity in organizations. This focus can take place in the form of setting aside special R&D funds, creating collaborations with industry scientist, or acquiring specialized innovative technologies. Otherwise, new ideas and innovative projects may not receive the capital backing and support needed for implementation and product launch. In a field study by Delbecq (1985), he found that organizations with high levels of innovation have special funds set aside to specifically support innovation, often labeled as “venture capital” or “research and development funds”.

Proposition 1: The higher the degree of resources allocated towards research and development, the more creativity and innovation are enabled in the organization.

Leveragability of developed technologies

The ability for organizations to provide an environment where individuals and teams can share innovative technologies plays a role in enabling creativity. Some firms have used leveragability as a key component of fueling new and innovative products. For example, 3M has over 100 groups of technologies that fuel their product innovations (Garud, 1999). These technologies are intellectual property of the organization that are accessible across divisions within the organization. Many new product ideas have adapted technologies that were not a competency of their division, but a shared technology of the 3M's technology portfolio. For example, 3M Post-It notes were created by adapting the non-stick glue adhesives technology to a market need in office supplies (Garud, 1999). Tushman and Anderson (1986) provide a similar theoretical perspective that suggests competence-enhancing discontinuities are highly associated with decreased environmental turbulence in comparison to competence destroying discontinuities. This suggests that leveragability provides some organizational ease in the innovative process.

Proposition 2: The leveragability of technologies throughout the organization is positively associated with creativity and innovation.

Allocation of human resources to innovation initiatives

The amount of organizational resources allocated to innovation initiative is key to enabling the success of the innovative idea. For example, if a creative idea surfaces in an organization, but there are not enough resources to carry the idea through, then the idea may diminish or suffer due to lack of resources. Delbecq (1985) found that in low innovation organizations, many innovations failed because of lack of human resources and project ownership.

Proposition 3: The more human resources allocated to innovation initiatives, the more creativity and innovation are enabled.

Priority/Time allocated to innovation initiatives

Researchers have found that making innovation a priority (Delbecq, 1985) and allocating time to generate new ideas and innovations (Garud, 1999) are key characteristics of highly innovative organizations. To illustrate this point, 3M developed a management practice that encourages employees to spend 15% of their time on innovative ideas that they are interested in that have not been thought of by the company already (Garud, 1999), which gives time allocation and priority to think of out of the box ideas.

Proposition 4: The level of priority and/or attention a project is given is positively associated with the level of creative outcomes the firm will achieve.

Team cross-functionality/diversity

Having multiple perspective and views contributing to a creative initiative leads to higher degrees of brainstorming and creative generation in the creative process. Additionally, having cross functional support can lead to barrier breaking throughout the organization (Delbecq, 1985).

Proposition 5: Organizational resources allocated to innovation initiative that are cross-functional or diverse in nature enable creativity.

In addition to these 5 parameters of organizational resource allocations, firms that generate creativity also utilize this creativity and innovation to build strong market performance. Frequently, these new products, ideas and processes turn into profitable growth for companies, competitive advantages in the market and new competencies that fuel future growth of their organization. Some firms have explicitly set innovation as a corporate objective to fuel

organizational performance, for example 3M (Garud, 1999). The following therefore predicts that organizations with a high level of creativity and innovation have the strongest levels of market growth and performance.

Proposition 6: Relative to industry peers, firms that have high levels of creativity and innovation are positively associated with strong economic performance indicators.

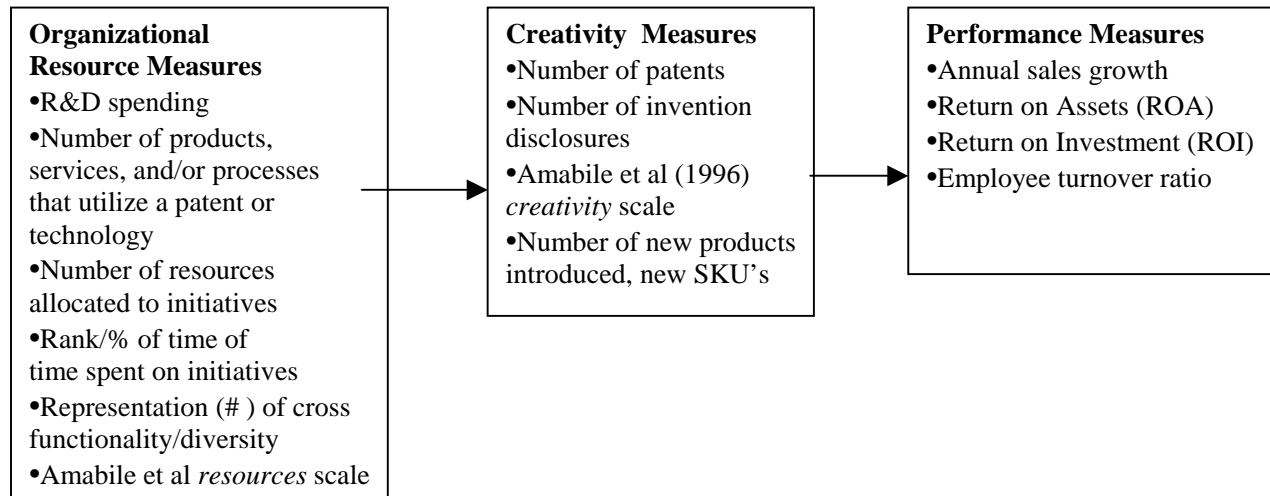
Proposed Methodology

The recommended methodology would include a study of the US consumer packaged goods market including all publicly traded companies. This industry would be used as the target industry because of the ease of access to available data from financial statements, scanner data from consumer purchases and the reliance on creativity and innovation to fuel growth in this highly competitive domain. The scope of data collection will target 75-100 firms in the sample group. This data may be biased towards larger companies in that smaller firms and family owned firms are usually not available through public record. To collect relevant data on company resource allocations to innovation and creativity, I propose a survey be constructed with the research and development groups within the targeted organizations. To assess organizational performance measures, I propose utilizing financial statement data reported through Compustat over the last 10 years. To assess creativity and innovation outcomes (e.g., patents and new products introduced to the market), I recommend utilizing US patent databases, new SKU and product reports by third party market research firms (e.g., IRI, Dunn & Bradstreet, Nielsen, and Yankolovich).

Measures

To operationalize these constructs, figure 2 has identified appropriate measures for organizational resources, creativity and organizational performance. Survey scales include some of Amabile’s previously published KEYS scales (1996). Control measures would include advertising, mergers and acquisitions, and market size.

Figure 2



Analysis

Multivariate regression analysis would be conducted to measure the significance of the correlations between resources allocated and creativity and creativity and organizational performance.

Implications

There are major implications of connecting creativity and innovation to organizational performance. First, organizations will be able to access the outcomes of their managerial decision making processes around creativity. Second, researchers will be able to expand upon a new area within the organizational creativity and innovation theory that did not exist before. This will generate new measures on how to examine the impact of creativity and innovation within organizations. Finally, organization portfolio management and financial accounting will

gain insight of new practices of measuring and quantifying performance measures for innovation.

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