Creating Supportive Environment for Innovation: A Conceptual Model Study

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Abstract: Innovation and creativity is becoming a topic of ever-increasing interest to organization and researcher. Various scholars have recognized the importance of innovation to organization’s competence. Researchers conceptualized and studied it from different prospects. How to foster innovation within High-Tech firms is a critical aspect of organizational effective management. This paper expands on this line of thinking on the organizational innovation and aims to explore determinants of work environment that are relevant with organizational innovation. In this paper, we attempts to examine the determinants of innovation in work environment and addresses the ways in which innovation is fostered in firms. Furthermore, we develop a model to expound the mechanism of innovation in work context.

Key word: Innovation, Creativity, Key Factors, Innovative Process; Function Mechanism Model

1 Introduction

In the dynamic environments with rapid globalization and advances in technology, “creativity” and “innovation” play important role of in long-term survival and development of organizations (Ancona, 2001). They have been seen as key goal for many organizations and have potentially powerful influence on organizational performance (Mumford, 2002; Drazin, Glynn, 1999). Relevant study has shown that firms’ success measured by growth, profitability, and productivity is highly correlated with the emphasis that a firm places on innovation, especially in the High-Tech industry (Baldwin, 1994; Bommer, 2002). So this kind of study provokes continuing interest among researchers and practitioners. It is argued that innovation management in firms should be associated with the flexible enterprise’s features and the capabilities of the workforce (Borch, 2000; Tessa, 2004). But the innovation in many organizations is often hindered far more often than it is aided and abetted (Amabile, 2004). Hence, to go into the feature, process about organizational innovation and explore measures to

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1 Supported by the project of Humanities and Social Science Foundation of the Ministry of Education of China (No.10YJC630217), by the project of National Natural Science Foundation of China (No. 71172109).
foster innovation within High-Tech firms is a critical aspect of organizational effective management. In response to the increasing demand of research in this filed, based on reviewing the available innovation literature, this paper attempt to identify the factors that influence innovation in organizational settings and uncover the function mechanism of antecedent factors of innovation ,as well as to take into consideration the organizational strategy which to promote organization’s independent innovation.

2. The Meaning Border Of the Terms: Creativity and Innovation

Various scholars have recognized the importance of innovation to organization’s competence As Amabilea (2004) proposed that Creativity and innovation have come to be seen as a key goal of many organizations. But both of the concepts have been defined in various ways, they have nevertheless uniform definition and understanding in academics. Schumpeter (1983)ever defined innovation as encompassing the entire process, starting from a kernel of an idea continuing through all the steps to reach a marketable product that changes the economy; Kanter (1988) indicated that innovation has to do with the production or adoption of useful ideas and idea implementation. In recent years, the concept of innovation has become more complicated as well. West (2001) note that “the intentional introduction and application of ideas, processes, products or procedures which are new and benefit to the job, the work team or the organization”. Scott (1994) proposed that innovation include several process, such as problem recognition , idea generation, idea completing and prototype production. It includes such activities as generation of new ideas, evaluation of ideas, idea development and implementation (Mumford et al., 2002). On the other hand, creativity often be refer to idea generation alone. It is often framed as: with definition of the problem, employee gather, combine, reorganize information and generate the new ideas (Baughman & Mumford,1995). Woodman (1993) deem creativity as doing something for the first time anywhere or creating new knowledge. Usually, innovation is viewed as a multistage process; creativity is only one stage of a multistage. Through some researcher make a distinction between creativity and innovation, with the former referring to the invention of an idea and the latter referring to that idea’s application, or regarding the former as one simply part of the latter, generally, the two terms are often used interchangeably in most relevant research. In this study, we consider creativity means a new and
worthwhile idea that is applied to improve the way an organization works. No distinction is made with innovation.

3. Conceptual model: Innovation Determinants, Organizational Process and firm environment

3.1 Critical factors for employee innovation

King & Anderson (1995) indicated that three level factors: Individual, team and organization are essential facets for organizational innovation. Many researchers are striving to explore the wide range of factors at the three levels of analysis found to be associated with innovation in the workplace. A variety of authors have examined the relationship among individual feature and innovation. Such research result point to the same set of critical individual factors involved in promoting and implementing innovations, which cover five-factor traits, generative thinking, conscientiousness, style of solving problem, self-discipline and so on. At group level, A substantial body of research has now accumulated on such factors as team task feature, team background, team structure, team processes and relationship between teams, which have been consistently found relative to innovation across several primary studies. With respect to the organizational level, the major factors enhancing innovation has been studied involves strategy, structure and systems, organizational culture, organizational climate for innovation, resources and skills, teamwork, Leadership and ‘‘in-house’’ research and the like. Based on literature, we propose innovation facilitators at deferent level have direct and indirect way to influence individual innovative behavior. Individual innovation is a function of all these antecedents. The organizational final innovation performance lies on the match between individual or team innovative behavior, market demand and organizational target. It is not enough to only consider the individual, team and organization level factors separately to propel innovation. We believe it is important to consider the effects of each of these factors and their interrelationships in making the organization more innovative. It is necessary to build a synthetical framework to integrate all the facilitators.

3.2 Function Mechanism Of Innovation Determinants

Innovation researchers classify their work in terms of whether it addresses the creative person, innovative product, innovative process, and the innovative press (environment and context), as can be seen in Figure 1 (Elspeth & Fadzean, 2001; Fellers & Bostrom, 1993), these
four factors (the “four P’s”) mutually influence each other and are hence intimately related. As Woodman (1993) revealed that organizational innovation is a combination of the creative process, person, situation, and how these components interacted together. This viewpoint highlights the interaction among workers, process and combined press in organizational innovation.

![Figure 1: Four Factors of Organizational Innovation](image)

Source: Elspeth & Fadzean, 2001

In seeking to understand how innovation is fostered in a work environment, previous studies have put the primary emphasis on psychological tools and management practices (Lapierre, 2003). A variety of authors have examined the relationship among individual behavior feature, cognitive ability and innovation. Several research result appear to point to the same set of critical individual factors involved in promoting and implementing innovation and creativity, which cover five-factor traits (Costa & McCrae, 1992); generative thinking (Broyles1996); conscientiousness (LePine, 1997); style of solving problem (Payne, Lane, & Jabri1990); independency and flexibility (Simonton, 1991); self-discipline (Mumford, 1988); Negative emotion (George & Zhou, 2002) and so on.

<table>
<thead>
<tr>
<th>Work Environment Factors</th>
<th>Perceptions of Work Environment</th>
<th>Assessed Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Encouragement of Creativity</td>
<td>Organizational Encouragement Supervisory Encouragement Work group support</td>
<td>+</td>
</tr>
<tr>
<td>Autonomy or Freedom</td>
<td>Freedom</td>
<td>+</td>
</tr>
<tr>
<td>Resources</td>
<td>Sufficient Resources</td>
<td>+</td>
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<tr>
<td>Pressure</td>
<td>Challenging Work Workload Pressure</td>
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<tr>
<td>Impediments to Creativity</td>
<td>Organizational impediments</td>
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In Table 1, the conceptual model of work environment for creativity is shown. Departing from the traditional psychological approach to innovation, which focuses on the characteristics of creative persons, Amabile(1996) proposed that everyone has the potential to
be creative, innovation can come from anywhere within an organization. In fact, people have creative styles that tend to make them better at producing one kind of innovation or the other. Such contextual theories of organizational innovation provide a framework to identify dimensions of innovation work environments. They indicated two general categories of environment (Amabile, 1996): stimulants and obstacles to innovation. Stimulants refer to organizational and supervisory encouragement, work group support, sufficient resources, and challenging work. Obstacles refer to organizational impediments and workload pressures. Her model of work environment factors for innovation and creativity see Tab 1. Based on this theory and previous empirical studies, Amabile (1997) combines both perspectives into one conceptual model (see Fig. 2). They are sure that organization can enhance creativity and innovation through adjusting the work innovation environment. Management usually determines the organizational context characteristics: whether or not be competent in management practices, provide sufficient resources for innovative progress, and lay an emphasis on creativity motivation, which can be served as innovation enabler. Apart from in-house capabilities, it is notable that high-tech firms rely on such managerial support as above to form positive work environment when developing innovations. Cummings and Oldham (1997) found that organizations, which provided a supportive innovation context for creativity, tend to reap greater benefits from employees who are innately creative. Sweetman, (2001) proposed that how to influence the work environment by managerial support is the major problem to foster innovation within organizations. So, the innovation enabler in the work environment is always the key of organizational innovation.

Figure 2: Impact of Organizational Environment on Creativity

Source: Amabile, 1997
3.3 Organizational Innovation Process Framework
Jones and colleagues (2003) proposed that innovation is the process whereby talent’s ideas are transformed, through economic activity into sustainable value-creating outcomes. Innovation systems approach has provided useful insights to a better understanding of innovation processes which holds that: learning is interactive and cumulative, and it is a crucial factor in innovation processes; interaction is central to the process of innovation; evolutionary processes play an important role; innovation is embedded in social relationships; innovation capabilities depend on talent’s sharing common knowledge and a set of rules, conventions and norms (Salazar, 2005; Mónica Salazar, 2006). Gilson (2005) proposed that innovation process involve such kind of people-related issues, as exchange of information (West & Anderson, 1996), social influence (Guzzo & Shea, 1992), the expression of approval or disapproval of group members (Guzzo & Shea, 1992), participation in decision-making (West, 1996). So, innovation occurs as a result of the interplay between talent and work-context factors. Mezias (1993) pointed that the amount and type of organizational innovation is related to talent’s intelligence. Glynn (1996) conceptualized the worker’s intelligence as information-processing capability that is used to solve problems or meet task challenges (Sternberg & Salter, 1988). Importantly, intelligence requires intentionality (of the actor), and it is flexibly adaptive, not rigidly stereotyped (Cantor & Kihlstrom, 1989). Fundamental to intelligence is expertise, the repertoire of knowledge used to solve problems. This repertoire consists of both declarative knowledge (i.e., factual information, causal beliefs, or perceptual orientations) and procedural knowledge (i.e., the strategies, rules, and skills for acquiring, storing, retrieving, and manipulating declarative knowledge) (Cantor & Kihlstrom, 1989; Glynn, 1996). Based on relevant studies, Glynn (1996) provides the conceptual framework to describe the talent’s intelligence-organizational innovation relationship in s, as shown figure 3. The researcher believe that talent’s intelligence is embedded in organizations and operates both through individual agents and institutionalized systems to affect organizational innovation.

3.4 Creating supportive environment for innovative behavior
Contextual theories of organizational innovation provide a framework to identify dimensions of innovation work environments. (Woodman et al., 1993; Amabile, 1996), they proposed that innovative behavior within organizations is a function of two categories of work environment
inputs: group characteristics and organizational characteristics. Adopt the implications of this theory, we give a model of supportive environments for employee innovative behavior. This framework depicts innovation process from the three levels: individual, team and organization, which are essential facets to shape organizational innovation. On the individual level, Personality (Costa & McCrae, 1992), thinking model (King, Walker, 1996) and academic basis (Amabile’s, 1996), KSAO (Stevens & Campion, 1994), motivation, especially intrinsic motivation (Frese et al., 1999) is four prepositive crucial factors for individual innovation. In work context, individual involve the innovation process through joining some innovative task teams. Organizational innovative output is largely achieved through the work of teams embedded in organizations (West, 2004), also popular in high-tech firms. According to Guzzo’s (1992) dominant input–process–output model for conceptualizing group performance, there are counterparts in the innovation setting. The inputs include the members’ individual factors as indicated above and aspects of organizational context, such as: Leadership, support for innovation, performance-reward and resources supplying, which will be discussed in some detail below. Given a predetermined group of individuals and a context, the deliberate use of processes is the principal means of producing desired innovative products. Teamwork creativity and innovation, which is called organizational climates for innovation. Hunter (2005) proposed that innovation occurs as a result of the interplay between individual and work-context factors, the most notable factor is the organizational climate. Climate for innovation is a cognitive interpretation of an organizational innovation-motivating situation, Individuals will respond primarily to cognitive representations of innovation environments rather than to processes involve several kind of interactions (Gilson, & May, 2005), including exchange of information (Gladstein, 1984; Guzzo & Shea, 1992; West & Anderson, 1996), social influence (Guzzo & Shea, 1992), the expression of approval or disapproval of group members (Guzzo & Shea, 1992), participation in decision-making (West & Anderson, 1996) and boundary management (Ancona & Caldwell, 1988; Gladstein, 1984). Innovation process is a social and cognitive process with the elements of the process being events that occur within person and between people. An striking element in the process is individual perceived support for the environments per se. (Scott & Bruce, 1994). For innovation team, its outputs are innovative behavior and innovative products. On organizational level, the final innovation performance lie on the match between individual or team innovative outputs and the outer market demand.
Individual innovation is a function of antecedent conditions, especially the factors on organization level that contribute to innovative climate. Three main leadership characteristics: domain specific expertise, social and problem-solving skills, and transformational leadership behavior have been proved to stimulate innovation effectively (Mumford, 2002), especially, transformational leadership and LMX style may contribute to intrinsic motivation, and in turn, has substantial enhancement of innovation. Research suggested that management practices designed to expose individuals to new and different experiences and to develop their skills are associated with high levels of innovation (West, 2004). This kind of activities are always viewed as
support for innovation. Additionally, management is open to new ideas, encourage risk taking, individuals have the autonomy to take initiatives, ideas are evaluated in a fair, supportive manner are also help to promote innovation. Other research suggests that performance-based rewards will encourage innovation implementation (Eisenberger, 1996). Cardinal (2001) found rewards are associate with innovation when viewed as performance acknowledgement. But the systems design should not displace works’ attention from the task to reward (Cameron, 1996). Adequate supplies of such resources as equipment, facilities, and time are critical to innovation (Angle, 1989), Dougherty (1996) also highlighted the resource availability when development, assessment, and implementation of creative ideas. For team, innovative resources include time, material, ideas, and information. Assembling these resources appropriately will enable individual participate fully in the creative task-oriented activities. Leadership, support for innovation, performance-reward and resources supplying serves as signals, based on which individual receives the concerning organizational expectations for his innovative behavior and potential innovation outcomes.

4. Conclusion
Scholars tried to go into the feature and process in organizational innovation, as well as to uncover the mechanism of antecedent factors of innovation; nevertheless, there are still few related researches in our country. In this paper, based on former theories, we summarize the key factors for organizational innovation, explored the mechanism of how to creating supportive environments for employee innovative behavior. The work might assist the managers in organizational innovation management.

Acknowledgments
The research is supported by the project of Humanities and Social Science Foundation of the Ministry of Education of China (No.10YJC630217), by the project of National Natural Science Foundation of China (No. 71172109).

References


