# New Knowledge Creation As A Change Management Model

**Herbert Nold III, Universal Technical Institute, Orlando, USA**

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ABSTRACT:

Change is one of the few absolutes that exist in the world in general. The ability of an organization to change and adapt to changes in the internal and external environment is crucial for success. Many authors have proposed methods for facilitating change management within organizations. Many of these strategies rely on the organizations ability to create new knowledge, whether they call the process new knowledge creation or not. Historically, a common perception has been that creating knowledge management systems, primarily in the form of information technology infrastructure, automatically results in new knowledge creation. However, new knowledge creation also requires an environment that encourages individuals to interact using the technology as a facilitating tool. This essay summarizes some of the thinking on behavioral attributes needed for new knowledge creation and suggests possible methods to facilitate creation of an organizational culture that maximizes information technology resources with human behavior.

Keywords: *Change management, Knowledge management, Knowledge creation, SECI*

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## 1. Introduction

Few axioms exist that command virtually universal agreement. One common saying that is universally accepted is that change is the only constant environmental dynamic. It can be said with absolute certainty that the world will be different in 12 months and the environment in which businesses operate will have different dynamics. The advent of computing technologies, advances in transportation, communications at light speed, the internet, and other innovations continue to accelerate the rate of environmental and competitive changes that drive business in the 21st century. Siggelkow and Rivkin (2005) contend that the rapid rate of technological change, deregulation, and globalization increase competitive pressures resulting in growing turbulence in internal and external environments. In response to rapid changes companies have increased in size and complexity partially made possible by advances in technology and communications (Siggelkow & Rivkin, 2005).

Management techniques based on the classical bureaucratic structure described by Max Weber have proven to be inflexible in environments of rapid change and increased turbulence and complexity (Scott, 1981; Scott & Davis, 2003). Scott and Davis (2005) present a convincing argument that traditional management structures and practices that emphasize control and uniformity are essentially anti-change. That is, the culture and structure of traditional organizations are such that adapting to rapid changes is

inherently difficult and slow. If management focus is on, as Katz and Kahn (1978) wrote; “reducing the variability and instability of human actions to uniform and dependable patterns” (p.28), then creating an organization that adapts quickly to turbulence and complexity will be difficult indeed.

Various adaptive management structures and associated techniques have been suggested including virtual (Handy, 1995), learning (Senge, 1990), modular (Sanchez & Maloney, 1996), and knowledge creating (Nonaka & Takeuchi, 1995). A common thread among these management visions is the replacement of or added dimensions to traditional bureaucratic management styles. Siggelkow and Rivkin (2005) advocate replacing or enhancing formal coordination with social interaction, and organization intended to take advantage of processes or capabilities rather than functions, products, or regions. The accelerating rate of increasing global competition, rate of change, and organizational complexity demands that knowledge workers acquire a clear understanding of constantly changing threats and opportunities (Heinrichs & Lim, 2005). Organizations learn and create new knowledge through the experiences of other organizations and individuals therefore, accelerating the rate of organizational learning and knowledge creation (KC) represents a source of significant competitive advantage (Heinrichs & Lim, 2005).

Despite the large volume of studies discussing the competitive advantages created by knowledge, creating an environment to generate knowledge remains poorly understood (Einsenhardt & Santos, 2002). This essay aims to explore some practical implications for introducing management strategies to encourage the accelerating the rate of KC throughout an organization. Increasing the rate of new knowledge creation should yield faster and more effective decision and product innovation making the firm more adaptable to changes in the environment and ultimately yield superior performance compared to peers.

## 2. Knowledge Management Versus Knowledge Creation

Management of organizations is a diverse and complex task with many facets that include human resources, production, service levels, quality assurance, knowledge management (KM), and knowledge creation (KC), among many others (Miguel et el, 2008). The uncertain and competitive global business climate drives an increasing need for management to develop more effective strategies to maximize knowledge workers new KC (Heinrichs & Lim, 2005). Heinrichs and Lim continued to identify two determinants for management’s response to competitive pressures; *strategic information processing* and *knowledge creating capability*. Strategic information processing refers to the use of analytical tools and visual representations to present and evaluate information, knowledge evocation, technology transfer, and the use of web-based interactive learning environments to format information in a meaningful way (Brown et al, 1997; Chen & Macredie, 2002; Clark, 1992; Dos Santos & Bariff, 1988; Spence & Brucks, 1997). Knowledge creating capability refers to the effectiveness of an organization to learn which knowledge absorptive capacity, insight generation, organizational memory, and the existence of structured knowledge management process determine (Darr et al, 1995; Nonaka, 1991; Dorroh et al, 1994). Both determinants are necessary for an effective response strategy to competitive pressure.

KM systems typically represent technologies intended to distribute and store information throughout an organization to increase productivity by providing the capability for individuals to access information (Nishimoto & Matsuda, 2007). Sabherwal and Sabherwal (2005) provided convincing evidence that KM processes contribute to firm performance by facilitating individual employee efficiency, leveraging core business competencies, shortening product development times, reducing production cycle time, improved quality, and other critical processes. Jiming Wu (2008) evaluated 36 companies identified as having excellent KM systems and determined that a strong positive relationship existed between KM and market value as measured by Tobin's *q*. Tobins *q* is the ratio of a firm's market value and the replacement value of the firm's total assets (Tobin, 1978). Bharadwaj et al, (1999) determined that Tobins *q* quantifies the contribution of a firm's intangible assets, such as KM, to perceived market value. However, KM systems may contribute to firm value many existing KM systems have not fulfilled expectations of management (Nishimoto & Matsuda, 2007).

The creation of new knowledge using distributed KM systems requires an environment that promotes social interactions among people physically located in different parts of the organization (Un & Cuerco-Cazurra, 2004). Technology can facilitate information and knowledge sharing but single individuals create new knowledge (Un & Cuerco-Cazurra, 2004). Compared to establishing KM systems, a greater management challenge is to create an environment that promotes social interaction that facilitates creation of both explicit and tacit knowledge as well as sharing of explicit knowledge (Nonaka, 1994). Additionally, Un and Cuerco-Cazurra suggested that effective KC is accomplished when individuals with different knowledge sets interact rather than those with similar backgrounds and expertise. Nonaka (1994) and Nonaka and Takeuchi (1995) presented convincing arguments and cases to illustrate the effectiveness of engaging individuals with diverse knowledge sets in the KC process. Grant (1996) presents an argument that relational networks overlapping organizational boundaries facilitate the integration of knowledge throughout an organization. Clearly, KC requires interaction among individuals with diverse knowledge sets who are able to be both sources and recipients of information and knowledge. By sharing knowledge, people acquire knowledge that was lacking, synthesize this knowledge with preexisting knowledge to create something new (Nonaka & Toyama, 2003).

## 3. SECI

In 1995, Nonaka and Takeuchi introduced the SECI cycle (socialization, externalization, combination, and internalization) to describe the cyclical process of converting tacit knowledge to explicit knowledge and back again to tacit knowledge in the form of new knowledge. The SECI cycle describes four steps in a continuous cycle of knowledge creation and regeneration.

1. Socialization – describes an environment where individuals or groups of individuals share personal experience or tacit knowledge through individual direct interaction. Knowledge sharing is limited to the boundaries of the group or between specific individual.

2. Externalization – describes a process whereby tacit knowledge is converted into a form that is capable of being transmitted to others, outside of the immediate group through creation of procedures, emails, and any other forms of media that transmits knowledge to a wider sphere.

3. Combination – describes a process whereby individuals outside of the immediate sphere of personal contact receive knowledge that has been shared through some common media and begins to combine the shared knowledge with existing tacit knowledge.

4. Internalization – describes a process whereby individuals or groups process newly received knowledge with their own tacit knowledge and through by merging knowledge from internal and external sources create an entirely new nugget of knowledge that is unlike either, previously existing knowledge sets.

Visualizing the SECI cycle as a continuously regenerating process it is possible to picture a condition whereby increasing the speed of completing the cycle could result in accelerating the rate at which new knowledge is being created.

## 4. Change Management Strategy

Mintzberg, Lampel, Quinn, and Ghoshal presented the change cube model for organizational change initiatives (Mintzberg et al, 2003). The change cube model presents two major dimensions that are instrumental to the process; *strategy* and *organization*. Each dimension contains elements that comprise the dimension ranging from concrete to conceptual. Further, effective intervention at any of the elemental levels requires that all the more concrete elements below must be modified before attempting to change the target element. Attempts to change organizational culture must be preceded by changes to systems and people otherwise the basis for the cultural change will not exist and the initiative will fail. The change cube concept is relevant to initiating change toward KC because without existing information technology systems to preserve and disseminate information it is not possible for individuals to interact unless physically co-located in the same space. However, as Nishimoto and Matsuda (2007) observed, most large enterprises have invested heavily in KM systems so that the structure and systems exist but that a "computer can manage 'data' but not 'knowledge" (p.412).

## 5. Knowledge Creation Strategy

The existence of organizational and informational silos throughout most organizations is well known and well documented. Assuming, the enterprise has an existing KM system then the management challenge is to infuse a change into the culture so that people share knowledge. C. A, Un and Alvaro Cuervo-Cazurra (2004) investigated two strategies that built upon existing KM systems infrastructure to introduce cultural changes that encourage KC; *organizational strategy* and *project team strategy*.

Organizational strategy has three major components each based on a body of work from other noted researchers. Organization-level *integrative reward* seeks to encourage

individuals to become willing to interact and share knowledge through a reward system (Galbraith, 1977; Katz & Allen, 1985; Lawrence & Lorsch, 1967; Morrill, 1995). Unlike typical reward systems where recognition follows the reporting or organizational structure, functional managers outside of the normal operational sphere of interaction determine integrative awards. The idea is to encourage people to interact with others in different functional areas. Organization-level *integrative socialization* encourages employees to engage in cross-functional socialization thereby exposing individuals to a variety of knowledge sets (Katz, 1997; Nohria & Ghoshal, 1997; Nonaka & Takeuchi, 1995). People are encouraged to build social ties with others throughout the organization that will promote trust and a willingness to share knowledge. Trust between and among interactive groups is identified throughout the literature on KM and KC by virtually every author on the subject. Roberts (2006) identifies trust as an essential precondition for effective information sharing and transfer of knowledge among group members and between functional groups. Organization-level *routine communication* is an initiative to develop formal and informal communication patterns both up and down the organization as well as across functional areas at all levels (Lawrence & Lorsch, 1967; Morrill, 1995; Nohria & Ghoshal, 1997). Promotion of cross-functional communications represents an expansion of typical communications between management and employees following traditional reporting structures.

The project team strategy investigated by Un and Cuervo-Cazurra (2004) was defined as management initiatives that encourage formation of cross-functional teams focusing on specific objectives, processes, or tasks. Rewards were based on team performance, integrative socialization was achieved through the involvement of individuals representing diverse functional areas, and communication patterns were established within the team. Essentially, each team was endowed with the same elements as those at the organization-level only on a smaller and more controllable scale.

Un and Cuervo-Cazurra (2004) concluded that both management strategies that were studied were effective in promoting organizational cultural to facilitate more effective KC. Both strategies generated statistically significant improvements in product innovation, technological innovativeness, speed-to-market, customer satisfaction, and efficiency. Results clearly suggested that the organization-level strategy was more effective but also took longer for results to become apparent and was significantly more costly than the project team strategy. Un and Cuervo-Cazurra did not evaluate leadership skill however, could be hypothesized that executing the organization-level strategy would demand a higher level of leadership ability than the project team strategy due to the size, scope, and complexity of managing a much larger group of people. Evaluating leadership skills needed to execute these strategies represents an opportunity for further study.

## 6. Conclusion

Ramaraj Palanisamy (2008) observed:

> *The process of knowledge storage does not necessarily lead to enhanced performance of an organization and effective knowledge application does. The*

*performance depends on applying the stored knowledge of the individuals as well as organizational memory and turning into effective actions (p. 105).*

Palanisamy is not alone in this observation that has been made by many researchers therefore, the logical conclusion must be that effective utilization of KM systems is dependent on the ability of management to create a culture that encourages individuals to interact, internalize information, and create something new.

Sugiyama (2007) emphasized the cyclical nature of the SECI (socialization, internalization, combination, internalization) cycle popularized by Nonaka and Takeuchi (1995) and illustrated how small research project become more effective if group members move quickly from one SECI step to another. In plain language, Sugiyama observed that the project team got smarter, faster. Combining the observations of Palanisamy, Sugiyama, Wu and others it is possible to hypothesize that management intervention to encourage social interactions that share knowledge throughout functional disciplines would result in improved firm performance. Increasing the rate of new knowledge creation within an organization would allow that organization to better keep pace with rapid changes in internal and external environments. Logically, management decision making would be more effective and the firm would be able to maintain competitiveness relative to peers. The enterprise's agility, flexibility, and adaptability would, in theory, increase in proportion to the rate of acceleration of the SECI cycle. Change strategies yielding results could be recognized quickly and expanded while those not meeting expectation could be reevaluated and modified or canceled so that valuable resources might be redirected to more effective initiatives. All these hypotheses represent opportunities for future research.

The study by C. A. Un and Alvado Cuervo-Cazurra (2004) offers practical suggestions for change management through new knowledge creation. Initiating project teams focused on specific issues represents a low cost, immediate solution to developing organizational KC. However, the ultimate goal of management must be to change the culture of the organization so that knowledge sharing becomes standard practice and the norm. Developing a culture that values new knowledge and does it quickly is the secret for success in the rapidly changing 21st century business climate.

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**Meet the Author:**

Herbert (Herb) Nold MS, CPA is a doctoral student at the University of Phoenix, School of Advanced Studies. He is currently regional controller with the Universal Technical Institute at the Orlando, Florida campus. His specialty has been in the areas of strategic planning, organizational design, and change management covering a 30-year career.

Herbert Nold III, 1624 Kinsman Way, Lakeland, Florida, 33809 USA; phone: 863-853-8150 (home); 863-397-2865 (cel); Email: hnold@verizon.net

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