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Project Title: A study on structuration of knowledge creation and agent
Field of Study: The knowledge-based theory of the firm and corporate strategies
IRB: I completed the IRB training and the survey is in the process of approval.
Start date of project: January 01, 2013
End date of Project: December 31, 2015

Project Abstract

The global economy has been changing rapidly in recent years and knowledge has become the most important input in economic change. Obviously, firms around the world place strategic importance on knowledge creation for their competitive advantages and use the corporate structure as a strategic variable to create knowledge and new products (i.e. Apple, Google and Dow Chemical). This project is to study knowledge creation structure and agent of firms in the U.S. The sources of new knowledge elucidated by Polanyi (1966) and Whitehead (1929) are tacit knowledge and lived experience; personal knowledge and employees' experiences are sources of this knowledge. Knowledge is created by a team in an organization and team members interact in the knowledge creation process. This raises several issues in team production. The structure of the organization is designed to address these issues because it has effects on their behavior. Giddens' structuration theory (1979, 1984) may offer a framework for explaining the relationship between structure and agent in knowledge creation, as it is concerned with understanding the activities of knowledgeable human actors and the structuring of social systems.

We argue that Giddens' duality of structure (1979, 1984) can be adopted for the analysis of the actors and structure of knowledge creation. For Giddens (1979, 1984), structures are rules and resources. He regards the rules of social life as "techniques or generalizable procedures applied in the enactment/reproductions of social practices" (1984, p. 21), considering three dimensions of social structure in his structuration theory: signification, legitimation and domination. In knowledge creation, the signification (meaning) structure is shared rules, concepts and theories which actors can draw on to make sense of knowledge creation; each actor makes sense of what others say and do in his interactions with other members by interpreting them. Each actor also receives intimation from reality, as stated by Polanyi (1966) and Whitehead (1929). Sharing and communicating with team members can be helpful in making sense of and drawing meaning from each actor's experience and the intimation that each actor is receiving from the hidden reality. As interactions with team members clarify concepts and theories, they help create new knowledge.

Why do we study knowledge and competence creation? This question is about firm innovation and firm performance. Some firms perform better than others. Knowledge and competence creation has emerged as the most important source of a firm's sustainable competitive advantage. Considering the importance of the subject, we need to examine factors contributing to knowledge and competence creation. My study will investigate the impact of organizational culture and environment, organizational structure and practices, knowledge management and leadership on knowledge outcomes. I will also study the emergence of new organizational structure in knowledge creation. Therefore, findings of the study will offer a guideline for knowledge and competence creation to practitioners as well as researchers. Findings will also be very important sources for innovation in products, processes and services for firms in the U.S. and innovation makes firms competitive in the global economy. Knowledge creation has become the most important research topic in our time.

Theoretical Framework

      Since Knowledge is tacit and lived experience (Polanyi, 1962; Whitehead, 1929) and locked in the human mind (Kim and Mauborgne, 1998), the decision to share or hoard knowledge has been the classical dilemma for exploiting knowledge in an organization. Therefore, creating shared sets of values and ideals among actors in an organization is crucial for organizational knowledge creation. This legitimation structure lays a theoretical ground for the importance of inter-personal trust among members in a knowledge creation team.

      Giddens' structuration theory (1979, 1984) may offer a framework for explaining the relationship between structure and agent in knowledge creation, as it is concerned with understanding the activities of knowledgeable human actors and the structuring of social systems. Giddens (1984) argues that domination depends upon the mobilization of two distinguishable types of resources (1984, p. 33): allocative resources and authoritative resources. Allocative resources refer "to material resources involved in the generation of power, including the natural environment and physical artifacts; allocative resources derive from human domination over nature" (Giddens, 1984, p. 373). Authoritative resources refer to "non-material resources involved in the generation of power, deriving from the capability of harnessing the activities of human beings; authoritative resources result from the domination of some actors over others" (Giddens, 1984, p. 373). According to Macintosh and Scapens (1990), both types of resources facilitate the transformative capacity of human action (power in the broad sense), while at the same time providing the medium for domination (power in the narrow sense). They further point out that power in its broad sense is the ability to get things done and to make a difference in the world. Because employees or subordinates can exercise significant power in the knowledge creation process managers' domination over employees tends to be more congenial than domineering because of this nature of knowledge. A study by Srivastava et al (2006) found that empowering team leaders and employees relates positively to both knowledge sharing and team efficacy.

      Giddens' (1984) focus on the understanding of human agency and social institutions uses human agents and actors interchangeably. According to Sewell, Jr. (1992), Giddens (1984) places a great deal of weight on the notion that actors are knowledgeable, defining knowledgeability as "everything which actors know (believe) about the circumstances of their action and that of others, drawn upon in the production and reproduction of that action, including tacit as well as discursively available knowledge" (p. 375). Actors become knowledgeable about knowledge creation structures as they develop a set of dispositions on structures, which Bourdieu (1977) refers to as habitus. For Bourdieu (1977), habitus is a system of dispositions (lasting, acquired schemes of perception, thought and action). The individual agent develops these dispositions in response to the objective structure that the individual encounters. He argues that agents inculcate objective social structures into the subjective, mental experience of agents. Because a habitus tends to favor the particular social arrangement of society and reproduce the very structure of society, Bourdieu insists that sociologists must pay conscious attention to the effects of their own position on distortion or prejudice. This reflexivity can impel sociologists to correct their biases and prejudices. Ösbilgin and Tatli (2005) review Bourdieu's work and argue that his work can contribute to organization and management studies in three substantial ways:

      through (1) offering a conceptual framework for a multilevel research agenda in organization and management studies, (2) presenting an epistemological and methodological framework for tackling issues of reflexivity in the research process, and (3) proposing a methodological and epistemological way to overcome the dualities between structure and agency and objectivism and subjectivism (Ösbilgin and Tatli, 2005, p.855).

Therefore, the reflexivity of individuals can be a key factor contributing to knowledge creation.

      Similarly, Giddens (1984) addresses issues in the interplay of agents' action as well as social structures in the production, reproduction and regulation of social order. For Giddens (1984), the duality of structure means that structures shape actors' practices, and their practices reproduce structures. Reflexive

moitoring of an agent's action and interaction helps recognize intended and unintended consequences.

Agents address problems of adverse unintended consequences that can lead to changes in structures.

We argue that Giddens' duality of structure (1979, 1984) can be adopted for the analysis of the actors and structure of knowledge creation. For Giddens (1979, 1984), structures are rules and resources. He regards the rules of social life as "techniques or generalizable procedures applied in the enactment/reproductions of social practices" (1984, p. 21), considering three dimensions of social structure in his structuration theory: signification, legitimation and domination. In knowledge creation, the signification (meaning) structure is shared rules, concepts and theories which actors can draw on to make sense of knowledge creation; each actor makes sense of what others say and do in his interactions with other members by interpreting them. Each actor also receives intimation from reality, as stated by Polanyi and Whitehead. Sharing and communicating with team members can be helpful in making sense of and drawing meaning from each actor's experience and the intimation that each actor is receiving from the hidden reality. As interactions with team members clarify concepts and theories, they help create new knowledge.

Macintosh and Scapens (1990) draw on Giddens' structuration theory as their framework for management accounting. According to Macintosh and Scapens, legitimation involves the moral constitution of interaction. They argue that the legitimation structure is mediated through norms and moral codes which sanction particular behaviors, and they further point out what comprises the legitimation structure:

> It comprises the shared sets of values and ideals about what is to be regarded as virtue and what is to be regarded as vice; what is to count as important and what is to be trivialized; what ought to happen, what not to happen (Macintosh and Scapens, 1990, p. 460).

Giddens refers the actions taken by individuals to agency. These actions taken by individuals (agency) take place as a continuous flow of action. Macintosh and Scapens (1990) sum up Giddens' agency and structures and present them as a figure. Agents are purposive and know a great deal about why they act in the way they do. They can and do provide rationales for their actions and interactions. However, although many of the consequences of agents' behavior are intended and known, other consequences may be both unintended and unknown. In their reflexive monitoring of action in social settings, agents rely on both their discursive and practical consciousness and are motivated by an unconscious need for ontological security (Macintosh and Scapens, 1990, p. 4). At the discursive level of consciousness, agents are able to give reasons for their behavior, and at the practical level of consciousness, agents understand what to do in social situations based on stocks of knowledge they acquired. The practical level of consciousness has an affinity to Bourdieu's habitus. Acts have unintended consequences and unintended consequences may systematically feed back to the unacknowledged conditions of further acts. Therefore, structure is dynamic, a continually evolving outcome and matrix of a process of social interaction (Sewell, Jr. 1992).). Agents are empowered by structures, both by knowledgeability of structures and by the access to resources that enable agents to enact structures. Therefore, reflexive monitoring of actions and interactions leads to making changes in structures and agents' behavior.

Giddens uses the concept of routine in organizations to provide a sense of ontological security and trust on the actions and interactions among agents. Giddens (1984) refers to routinization as "the habitual, taken for granted character of the vast bulk of the activities of day-to-day social life; the prevalence of familiar styles and forms of conduct, both supporting and supported by a sense of ontological security" (p. 376). Actors' reflective monitoring and organizational routine make the transformation of structures in social settings dynamic and stable. The organization needs to make continuous changes, but at the same time needs to maintain stability to stem the flux and uncertainty of actions. Fuchs (2003) attempts to integrate Giddens' structuration theory to the theory of social self-organization, Fuchs (2003) pointing out that "Giddens' structuration theory fits well into the framework of a theory of social self-organization that stresses the role of human actors as creative beings" (p. 133). Fuchs argues that "the interactions between components result in new properties of the system that cannot be fully predicted and cannot be found in the qualities of the components. Microscopic interactions result

in new qualities on the macroscopic level of the system" (p. 135). Changes in structures on the macroscopic level of a system are caused by actions and interactions of conscious knowledgeable actors.

Giddens' structuration theory provides a framework for knowledge creation structures and agency. If we assume that there are two employees in a knowledge creation team, both have tacit knowledge and lived experiences from their respective jobs. They have acquired knowledge from customers, investors, partners, competitors and the scientific community. Therefore, individuals engaged in knowledge creation are knowledgeable, conscious and reflexive. Individuals can also anticipate possible future states, based on their abilities to detect intimation from the hidden reality in their fields (Polanyi, 1969). They can anticipate change in technologies, markets and regulations. A knowledge creation team consists of individuals with these traits who participate in knowledge creation. According to Fuchs (2003), creativity is the ability to create something new that seems desirable and helps to achieve defined goals. Based on anticipation of the future, the knowledge creation teams design/create new products, processes and services and provide solutions to problems. Individuals' participation in knowledge creation can be regarded as a micro-foundation; their interactions result in new knowledge. Thus a new knowledge creation structure may emerge from actions, interactions and reflexive monitoring of individuals.

Structures enable and constrain actions and interactions of individuals. Individuals are affected by mission, culture and leadership in the organization and take purposeful and strategic actions to enhance their utility, forming dispositions to navigate structures (Bordieu's habitus). Individuals further develop dispositions for enhancing their knowledgeability in organizational structures as well as organizational environments. Therefore, research on structuration and agent is crucial for understanding of knowledge creation and new product development.

Research Questions

Key research questions are: What is the impact of structures of knowledge creation on knowledge creation? How do aggregate structures, institutions and cultures emerge from individual actions and interactions in knowledge creation? What is the impact of the corporate governance on knowledge creation? What is the process of sorting or self-selection into an organization? These are important research questions in knowledge creation and I propose to investigate them with the grant.

Research Methods and Procedures

I have completed a draft of a theoretical paper and I need to collect primary data to conduct empirical tests for my theory and knowledge creation model. I am planning to survey U.S. firms to collect primary data. The survey questionnaire is complete (see the appendix). The survey questionnaire consists of four components: organizational structures; organizational culture and environment; knowledge management practices; leadership; outcomes of knowledge management. I will mail the survey questionnaire to 5000 U.S. firms and expect to have a 10% return rate. I will use a stratified random sampling method in the sample selection to reflect the population of U.S. firms.

Impact of the Research Project on Faculty, Community and the University

The full impact of research is difficult to know in advance because research publications are followed by many scholars and they interpret research results differently from the author. Interactions between the author and readers and among readers themselves make the research endeavor open new possibilities and creates new knowledge and improves the quality of life for all human beings. The university will gain a good reputation as my research is recognized by peer scholars and graduate students worldwide. Most of all, my continuous research on knowledge made me more conscientious in my teaching and research. My students will have accesses to state of the art knowledge on knowledge creation and knowledge management. The local community can benefit from my research as I share research findings with them. I have already interviewed and shared my views on new competence creation with Mr. Mark Whiteman who is the president of Dow Global Technologies, Inc. for my theory paper.

Description of last 5 years of teaching, research, and service demonstrating past performance and contributions

I have taught principles of macroeconomics, managerial economics, statistics and

microeconomics for managers at SVSU. I have been working on knowledge management for several years. I taught knowledge management strategy of management classes for the School of Management while I was an international scholar at Kyung Hee University in Korea. I hope to establish a knowledge and innovation management class during the proposed research project period. This is a newly emerging field and my research makes it possible to establish the class at SVSU. This is what a professor and scholar is supposed to do at the university. My continuous research on theories of the firm has begun to bear fruit and I have been productive for the last five years and for my whole career at SVSU. I presented many papers at various international conferences and four papers are included in conference proceedings. I published four articles in referred journals in 2012 alone and four papers are currently under publications reviews (see the attached short version of the curriculum vitae). I am currently working on a family business research project with my colleagues at the College of Business & Management (CBM) and coauthored numerous papers with my colleagues in the CBM. My research has been timely and relevant. I continue to serve a couple of committees each year. I received the person of the year award for my accomplishments in research and leadership in the Korea-America Economic Association from my alma mater (Kyung Hee University, Seoul, Korea) on January 14, 2011. It is a prestigious award and five major Korean daily newspapers reported on the event and the recipient of the award.

I published a paper on knowledge management in 2011 and completed a draft of another paper. I am confident that I can publish three empirical papers based on the proposed research project. Then, I will become a recognized scholar in the field. If one publishes several papers in the same field, she/he gets recognition from scholars in the field. My article on work incentives and job turnover functionality in 1994 has received 63 Google scholars' citations and over 1000 secondary citations. I coauthored four papers with my colleagues in the College of Business and Management on supply chain management in early 2000 and these articles have more than 26 citations according to Google scholars' citations. One of my articles is included in the collection of classical papers on global supply chain management which is an honor for a scholar. I published two research monographs and several research papers on Korean firms based on my Fulbright scholar's program to Korea in 2002 and 2003. I was invited by the editor of Vanguardia Dossier (Spanish magazine in Barcelona, Spain) to write on Korean business reforms (Issue 43, 2012). These examples show that I have been a productive scholar from the beginning of my career at SVSU and have contributed to the improvement of the reputation of SVSU.

Research Activity Outcomes and Timeline
Anticipated outcomes of this research proposal are two empirical papers and a research monograph.
1. Complete two research papers: 1) "Impact of knowledge creation structure on knowledge creation," January 1, 2013 – December 31, 2013; 2) "Relationship between knowledge creation structure and Agent," January 1, 2014 – December 31, 2014.
2. A research monograph (book) based on my stream of research on the theories of the firm and corporate strategies: January 1, 2013 – December 31, 2015.

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    Accounting, Organization and Society, 15 (5), 455-477.

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Budget

I will use the fellowship to fund the following:

Year 1

1 course release (4 cr.) during fall and winter semester: est. $2,800/adjunct for fall term and winter term. $700/cr. x 4 cr.	$5,600
Data analysis for SVSU student assistant during fall and winter semesters. $8/hr * 10 hr/wk * 25 weeks	$2,000
Survey of 5000 U.S. and 5000 Korean firms	$4,900
Total	$12,500

Year 2

1 course release (4 cr.) during fall and winter semester: est. $2,800/adjunct for fall term and winter term. $700/cr. x 4 cr.	$5,600
Publishers' Permission to use my published articles for my book.	$3,675
Data analysis for SVSU student assistant during fall and winter semesters. $8/hr * 10 hr/wk * 20 weeks	$1,600
Travel funding for international conference - Flight $1625	$1,625
Total	$12,500

Year 3

1 course release (4 cr.) during fall and winter semester: est. $2,800/adjunct for fall term and winter term. $700/cr. x 4 cr.	$5,600
Travel funding for international conference: Flight $2,000/trip; Perdiem $35 * 5 days = $175; Hotel $200/night * 4 nights = $800/yr; taxi - $40 X 5 = $200. Conference fees - $500	$3,675
Summer Stipend – includes $2,695 retirement and $530 fica	$3,225
Total	$12,500