Enabling Organizational Ideation with Cognitive Dexterity using Social Media: An Exploratory Study

**Emergent Research Forum paper: Research-in-Progress**

**Pratyush Bharati**  
University of Massachusetts, Boston  
pratyush.bharati@umb.edu

**Abhijit Chaudhury**  
Bryant University  
achaudhu@bryant.edu

**Kui Du**  
University of Massachusetts, Boston  
kui.du@umb.edu

**N. M. Agrawal**  
Indian Institute of Management, Bangalore  
agrawal@iimb.ernet.in

**ABSTRACT**

Cognitive dexterity is a collective level dynamic capability to rapidly intuit, interpret, integrate and assimilate knowledge from a variety of sources in order to promote enhanced ideation in a firm. Building on the social capital theory and the theory of organizational learning, we developed a conceptual model that we are in the process of validating by employing an exploratory qualitative case study. The preliminary results indicate that with the advent of social media firms are confronting an increasing volume, velocity and variety of information with often suspect quality. We found strong evidence that some firms were exploiting this opportunity to enhance their firm-level cognitive dexterity by instituting appropriate incentives, structures and processes so that larger volume and variety of quality ideas are generated within the firm.

**Keywords**  

**INTRODUCTION**

In a knowledge-based economy, with increased competition, firms are under pressure to make best use of information and knowledge available from both inside and outside the organization (Dess & Picken, 2000). A social media (SM) platform is one means by which firms are organizing themselves to cope with this knowledge-based competition. We conducted an exploratory qualitative research to study ideation and social media. We focused on the types of social media technologies in use and how the usage of social media platforms leads to trust-based communities. Social media has the potential to promote learning across multiple levels in the firm and leading to enhanced ideation at the firm level.

**THEORY**

The social capital theory is a mature but growing area of research according to Kwon & Adler (2014). Social capital is a valuable organizational resource that resides in the networks of relationships characterized by mutual acquaintance and recognition (Nahapiet & Ghoshal, 1998). Social capital has three dimensions, namely, structural, relational, and cognitive (Nahapiet & Ghoshal, 1998). Structural capital refers to the configuration of network ties and their appropriability, relational capital refers to trust, obligations, and identification between firms, and cognitive capital refers to shared beliefs, mental models, norms, and codes. Scholars have investigated innovation in firms and communities using social capital (Nahapiet & Ghoshal, 1998; Chiu et al., 2006; Roberts et al., 2008; Molina & Martinez-Fernandez, 2010). One basic schema in this theory is that social capital promotes learning activities, which in turn leads to innovation outcomes. We use this baseline proposition for our theory development (as depicted in Figure 1).
Previous information systems scholars have paid considerable amount of attention on the influence of social media on organizational learning (e.g., Beaudry & Pinsonneault, 2005; Faraj et al., forthcoming; Kane et al., 2014; Majchrzak & Malhotra, 2013; Schlagwein & Bjorn-Andersen, 2014). Among them, models differ in what is characterized as organizational learning and what innovation outcome is in focus. A popular model of learning activity used by many researchers (Tsai & Ghoshal, 1998; Nahapiet & Ghoshal, 1998; Yli-Renko, et al, 2001) is described as resource combination and exchange. Bharati et al. (2015) explore social media’s impact on organizational knowledge quality through the theoretical lens of social capital and resource exchange. A variant of the resource exchange model that includes learning concepts such as exploitation and exploration (Zahra and George, 2002) has been used by Malgone & Bhattacharjee (2014). Bharati et al. (2014) have found that institutional pressures are an important antecedent to absorptive capacity, an important measure of organizational learning.

Through its focus on learning activities, research based on social capital theory intersects with the much larger field of research in organizational learning (OL), and consequently it inherits the challenges and inadequacies of the OL field. The large amorphous field of OL consists of multiple inter-related streams that focus on different levels of analysis and are rooted in different theories (Crossan & Apaydin, 2010).

There are two areas of inadequacies in the field of OL that is relevant to our research. First is multi-level organizational learning. In their recent review of challenges in the OL field, Argote & Miron-Spector (2011) mention multi-level learning in firms and their interactions across different levels in an organization. A few recent studies have tackled the multi-level nature of OL explicitly, therefore, there is a need to comprehend how the levels relate and constitute OL (Crossan et al., 2011). The second focus is on the actual tool-using act of innovation. Argote & Miron-Spector (2011) point out how “research on how tools affect knowledge creation and organizational learning is in its infancy” (p.1129). In a similar vein, Patterson et al. (2012) report that “there has been a lack of a cohesive theoretical understanding of how employees create new ideas and apply those ideas in organizations” (p. 163). This is related to the fact “that the act of innovating itself seems to have been given lesser attention” (Teerikangas & Valikangas, 2012, p. 55). Thus, the role of tools in the act of innovation and ideation has been overlooked.

We are generally blind to how technology impacts us and to its essence (Heidegger, translated, 1977). It is our view that learning activities in the OL literature are described at an abstract level that is at considerable phenomenological distance from what the participants actually experience while engaged in the act of innovation (Barbaras, 2005). For instance, take the notion of exploitation and exploration: it is difficult for a participant or an observer to accurately identify as to which of these two activities they are engaged in. Generally concepts that work at one level prove to be inadequate to describe the phenomenon at some other level (Polayni, 1965) and therefore complicate efforts at building multi-level theories in any field.

In order to cope with the above limitations in social capital and OL literature, we are building on a framework for multi-level learning proposed by Crossan, et al. (1999) as the 4I model of Organizational Learning. There are 4 process constructs in the 4I framework that allow us to characterize multi-level innovation-related activities (Aponte et al., 2013) and include concepts that participants are likely to use in describing their activities. The model provides us with the scope for identifying how information technology tools are impacting actual innovation activities.

The four constructs of the 4I model are: intuition at the individual level, defined as “the pre-conscious recognition of the pattern and/or possibilities inherent in a personal stream of experience” (Crossan et al., 1999, p.525). The second construct, interpreting happens at both individual and the group level and defined by Crossan, et al. (1999) as “explaining through words and/or actions, of an insight or idea to oneself or to others” (p.525). The third construct is integrating which is defined as “the process of developing shared understanding among individuals and of taking coordinated action through mutual adjustment” (p.525). Integration happens at the group and organization level. Finally, the fourth construct is institutionalizing, “the process of embedding learning that has occurred by individuals and groups into the organizations and it includes systems, structures, procedures and strategy” (p. 525). Institutionalization happens at the firm wide level.

We conceptualize learning activities in our model as cognitive dexterity, the ability to rapidly intuit, interpret, integrate and institutionalize knowledge using a social media platform. Rapid sense and response ability is the essence of this capability. Our revised model of innovation in this research is shown in figure 2. Our innovation outcome is based on the concept of ideation, and it is characterized by the quantity, variety and quality of ideas (Reinig et al. 2007).
METHODOLOGY

Due to the lack of theories that integrate the social capital theory and the organizational learning theory, we employed a case study approach for theory development (Yin, 1994; Sarker et al, 2013). In particular, we used a mix of multiple mini-case studies for two reasons. First, because our theoretical framework is comprehensive, there is probably no single case that can provide rich insights on every component of the framework. Second, multiple mini-cases allow us to triangulate our findings from different angles and thus improves the overall rigor of the research. Following studies with similar methodology (e.g., Mandviwalla & Watson, 2014; Weill & Olson, 1980), our mini-cases were sourced using interviews, analysis of public documents and, where-ever applicable, review and evaluation of relevant firm websites. The key concepts that helped build elements of the framework were induced from the various mini-cases.

Our research framework was developed iteratively by using qualitative data in the following way: 1) Feedback from about 20 chief knowledge officers (CKO) and senior managers of knowledge management and innovation in multinational IT, IT services and software firms. This session was organized by KM (knowledge management) community of the Confederation of Indian Industry (CII), a major Indian industry association, in Bengaluru. 2) Feedback from a research forum on social media and innovation co-organized with the Center for Software and IT Management at Indian Institute of Management Bangalore and the University of Massachusetts Boston. The research forum was attended by 200 participants representing 60 IT and software firms. The research forum was held in collaboration with CII’s K Community Bangalore, National Association of Software and Services Companies (NASSCOM), National Human Resource Development (NHRD) Network Bangalore and the Fulbright Foundation in India. The senior executive presentations and feedback from experience sharing and ideation sessions were transcribed. 3) Feedback and documents generated by full time IT and software managers and professionals, who were pursuing a graduate degree. They were explained the research questions and requested to interview senior managers regarding social media and ideation. 4) Feedback and documents generated by full time middle and senior managers, who were pursuing an executive MBA. They were explained the research questions and requested to interview senior managers regarding social media and ideation.

The electronic documents were organized, coded, and analyzed using NVivo. We started with within-case analyses by coding key words from each case material that respond to our conceptual framework. Then, cross-case patterns were searched and compared to generate relationships among keywords (Eisenhardt, 1999; Eisenhardt & Graebner, 2007). An iterative process started as we continuously shaped our conceptual constructs and propositions by enfolding both the case insights and the relevant literature (Eisenhardt, 1999). The preliminary results are presented in this paper.

PRELIMINARY FINDINGS

Our exploration is theory-driven as per our framework shown in figure 2.

Social Media & Social Capital Generation
Challenges related to the data cycle are best categorized as volume, variety, veracity, and velocity. There were innumerable comments about how with the SM platform data deluge seems to have overtaken some of the operations. Many comments were made about structured and unstructured data from a bewildering variety of sources, such as blogs, wikis, newspapers, email, reports, voicemails, videos, and conference reports. It is reported that not all the data flowing in is of high quality and veracity, and data quality control is inadequate. The cycle of action, response and feedback has sped up, and this velocity is putting stress on some firms.

Our study found very strong evidence of the presence of the three dimensions of social capital, including structural, relational, and cognitive capital (Nahapiet & Ghoshal, 1998), in the context of social media usage. Transcripts show in many places how elements of social connections, trust, and shared vision resulting from the use of SM within and outside the firm. A consequence of increased social capital is that firms are able to reorganize themselves to become more agile and responsive to the environment.

Relevant phrases used were: “know about people”, “share their interest and what they are passionate about”, “connect people to people, connect people to communities”, “help establish buddy and on-boarding programs”, “help in knowing people across the globe”, “help build trust among employees as they know each other more” “it is the comfort factor which is really important”, “build bond of emotional equity”, ‘shape identity and form social bonds”, “understand culture across globe”, “help build relation”, ‘promote vision of the organization”

Social Capital, Social Media & Cognitive Dexterity

SM platform makes many-to-many open conversation possible. This appears to be having numerous OL consequences of this mode of communication at individual, group and organizational level:

- In a SM rich environment, employees develop insights through communicating with a diverse set of partners who are involved in a decision situation (intuiting and interpretation).
  - Phrases used were: “capture ideas”, “share knowledge”, “discussion capability”, “deeper understanding”, “pick trends”, “capture information”, “unlock insights”, “understand cultures across globe”, promote “cross functional teams”
- SM reduces the steps involved in strict hierarchical flow of messages. Managers involved at the strategic level are getting to communicate directly with frontline employees. This is leading to flattening of organization levels. Good ideas spread quickly through the firm (institutionalization).
  - Some of the relevant remarks in this context were: “share thought leadership”, “platform where they can hear from various levels of management”, “reach out and educate”, “advocacy and engagement”, “access to wealth of constantly evolving information”, “bright performers get more visibility from higher management”, prevent “middle managers practicing nepotism to promote their loyal employees”
- Communication across groups, departments and other firms becomes common and leads to a more amorphous and permeable firm and department boundaries (integration and interpretation).
  - Relevant phrases used were: “sharing”, “collaboration”, “started to share tips and tricks, became a knowledge base for the company”, “recruiting through corporate networks”, “connecting sales and marketing people to collaborate”, “the ability to utilize knowledge from external audience around the globe”, ‘global discussion about ideas and actions”, “no one team has the all the answers, This is where a social platform is critical”, building “communities of practice”
- Firms are seen to begin with some overarching vision of the role of SM and its strategy inside the firm. The vision emerges through discussion and later is sold to employees (interpretation & integration).
  - “contact with 3000 managers and through an innovative communication interface, hammered out a new direction and philosophy for the company”, “promotes the vision of the organization which is then driven through the employees”
- Top management leads by participating on SM platforms, which legitimizes such activities in the eyes of the employees (institutionalization)
  - Remarks were: “shared incentives”, “senior executive sponsorship”, “engage with community”, “gave other employees confidence that this is a right channel to participate”, mentoring ‘so that sharing of ideas happen”, “senior management initiate the flow”
- Care is being taken in the name of privacy and security, so the SM platform does not degenerate into islands of e-meeting rooms or groups of small groups which defeats the basic purpose of SM use (integration).
"many thousands of eRooms, each with a small group of people sharing documents... results were perceived as poor”, “established a clear no private spaces policy”, “our default open behavior”,

- SM platform more than sharing of documents and having free and open conversation is found to be critical to its usefulness (interpretation and integration)
  - Relevant quotes were: “social listening dashboards”, “natural engagement with users”, “help us build a listening and dissenting corporate culture”, “conversation collaboration, not just document sharing”
- Young employees who are generally SM friendly are harnessed in these efforts. Active users are acknowledged through awards, certificates, more responsibilities related to running the SM platform (institutionalization).
  - Relevant remarks are: “recognize employees”, “badges”, “reward recognition”, ‘identifying champions’
- Employees are using data mining and analytics on social media data which aids in generating insights (intuition)
  - “deriving intelligence”, ‘enrich through data analytics”, become “experts in their specific domain”

**Enhanced Ideation**

SM promotes a quicker sense- think-act cycle and helps a firm to become more agile. Active employees become more visible and it helps them to acquire more autonomy from immediate supervisors. Their visibility protects them as they generate more ideas and become even more creative. There are multiple references to real-time sensing of a changing environment, acquisition of new sources of information, creation of new ability for insights (data mining, co-creation), coping with new forms of information flow, and improved decision-making in areas such as customer support and product design.

Some of the phrases used were:

- “innovation department”, “innovation culture”, “co-innovate with customers”, “quickly share information”, “reduce cycle time for proposal development”, “shaving days off their bid and proposal process”, “employees can react & respond to it instantly”, “rich pickings for driving innovation, productivity, and process improvement”, “ideas get ratified with ease”, ‘improved the time to market”

**PRELIMINARY CONCLUSIONS**

We developed a model for ideation in the context of social media by employing the social capital and organizational learning theories. We are in the process of validating the model using mini-case studies. Our preliminary results indicate that firms are confronting an increasing volume, velocity and variety of information when using social media platforms. Firms are exploiting this opportunity to enhance firm-level cognitive dexterity by instituting appropriate incentives, structures and processes so that high quality and varied ideas are generated within the firm. The final results will be shared at the conference.

**ACKNOWLEDGEMENT**

This study was partly funded by the Fulbright Senior Researcher award and faculty study abroad award received by one of the authors.

**REFERENCES**


