Building Organizational Knowledge Quality: Investigating the Role of Social Media and Social Capital

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Building Organizational Knowledge Quality: Investigating the Role of Social Media and Social Capital

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ABSTRACT

To the extent that knowledge is the most strategically important resource for sustainable competitive advantage, organizations must consciously and systematically manage their knowledge asset. In this paper, we explore how social media and social capital at the organizational level help organizations benefit from their knowledge management initiatives in turn improving organizational knowledge quality. A research model was developed and survey data were used to test the model. The preliminary results show that social media helps to provide the technical environment conducive to knowledge exchange and social capital enables the actual knowledge sharing between businesses. Both facilitate an organizational emphasis on knowledge management that leads to organizational knowledge of higher quality.

Keywords

Knowledge quality, knowledge management, social media, social capital

INTRODUCTION

Knowledge is a strategically important resource for sustainable competitive advantage in the economy has long been recognized and acknowledged (Teece, 1998). This notion of the strategic importance of knowledge is partly built on the Resource-Based Theory of the firm (Barney, 1991), which holds that valuable, rare, imperfectly imitable, and non-substitutable resources lead to sustainable competitive advantage. Knowledge owned by organizations can exactly be such a resource (e.g. Grant, 1996; O'Dell and Grayson, 1998; Teece, 1998). The past two decades have witnessed both firms engaging in knowledge management hoping to improve firm performance (Davenport and Prusak, 1998; Davenport, Prusak and Strong, 2008) and intensive research in knowledge management (Alavi and Leidner, 2001; Sambamurthy and Subramani, 2005; Schultzze and Leidner, 2002).

One important theme in knowledge management research has been on how to motivate knowledge contribution to increase the volume of organizational knowledge stock (Kankanhalli, Tan and Kwok-Kee, 2005; Rafaeli and LaRose, 1993; Wasko and Faraj, 2000). Recently, quality of knowledge contribution has received more research attention (Chen, Xu and Whinston, 2011; Durcikova and Gray, 2009; Wasko and Faraj, 2005). In this paper, we follow this trend and explore the link between organizational knowledge management efforts on the quality of knowledge they acquire. In addition, we attempt to tie organizational knowledge management efforts with social capital and social media.

The role of social capital (Adler and Kwon, 2002; Lin, 2001) plays in knowledge transfer and knowledge sharing – both at individual level (e.g. Wasko and Faraj, 2005) and organizational/business unit level (e.g. Tsai and Ghoshal, 1998; Yli-Renko, Autio and Sapienza, 2001) – has been well documented. As Tsai and Ghoshal (1998) showed, social capital allows frequent and close social interaction, creates common values and a shared vision, and establishes trust and trustworthiness between the involved parties. The overlap between the two research streams is apparent: researchers in knowledge management have long recognized and emphasized the importance of direct and frequent interactions (Brown and Duguid, 2001), shared interests, common language, and common value (Wenger, 1998), and trust (Kankanhalli, Tan and Wei, 2005). There is a natural fit between the two research streams. In this study, we argue that social capital facilitates organizational efforts in knowledge management.

Social media has seen exponential growth with blogs, Facebook and LinkedIn becoming widely used in organizations. Social media are web 2.0 technologies (Murugesan, 2007; O'Reilly, 2007; Shirky, 2009) that produce and share user generated content. This enables organizations to engage with customers, suppliers and vendors in novel ways and on a real-time basis (Kietzmann, Hermkens, McCarthy and Silvestre, 2011). This recent surge in social media usage has increased research on
social media technologies. Presently most research focuses on the marketing application of social media (e.g. Kozinets, de Valck, Wojnicki and Wilner, 2010; Wilson, Guinan, Parise and Weinberg, 2011), but the potential influences of social media on knowledge management cannot be overlooked. In fact, knowledge management research enjoys a rich tradition in user-generated content in online communities (e.g. Chen et al., 2011; Wasko and Faraj, 2005; Zhang and Watts, 2008b). In this paper, we explore how organizational assimilation of social media helps organizations facilitate knowledge management.

The rest of the paper is organized as follows: we begin with the theoretical development of the research model and subsequently present the hypotheses. We then describe the survey study that we conducted to assess the research model. Preliminary results from the survey study are presented next, along with a discussion of the findings. We conclude the paper with preliminary contributions, limitations, and implications of the study.

THEORETICAL DEVELOPMENT

The theoretical underpinning of the reported study is that to the extent that social media and social capital facilitates knowledge management, organizations should consciously take advantage of them when they engage in knowledge management in their pursuit for competitive advantage.

Knowledge Management and Knowledge Quality

For organizations engaging in knowledge management, one of their primary concerns is over the lack of employee participation in and contribution to knowledge management initiatives (Davenport and Prusak, 1998), especially when a technology-based solution such as a knowledge management system was deployed (Alavi, 1997; MacCormack, Herman and Voelpel, 2002; Zhang, 2006). Consequently, much research efforts in knowledge management have consistently focused on how to motivate knowledge contributions to increase the volume of organizational knowledge asset (Kankanhalli, Tan and Kwok-Kee, 2005; Rafaeli and LaRose, 1993; Wasko and Faraj, 2000).

Nevertheless, volume alone is not sufficient to ensure the success of knowledge management efforts. Research in knowledge management has long warned against the pitfall of building a “digital junkyard” filled with knowledge that nobody actually uses (McDermott, 1999). It has been further argued that it is quality, not volume, of the contributed knowledge that affects the success of knowledge repositories (Durcikova and Gray, 2009; Markus, 2001). Knowledge quality matters because knowledge of higher quality is more likely to be successfully transferred (Kane, Argote and Levine, 2005). In fact, one may argue that quality is essential to knowledge. After all, Nonaka (1994) defines knowledge as “justified personal belief”, where justification can be viewed as a quality control mechanism built into the knowledge creation process (Giroux and Taylor, 2002).

It has been shown that companies who acquire knowledge of higher quality are more innovative and financially better off (Soo, Devinney and Midgley, 2003). With more attention paid to the quality of knowledge contribution, we believe that organizational knowledge management initiative should lead not only to more knowledge but also – perhaps even more importantly – better knowledge. Following Durcikova and Gray (2009), we refer organizational knowledge quality to the extent to which an organization acquires precise and accurate knowledge that meets the organization’s knowledge need. We hypothesize:

H1: A higher level of organization emphasis on knowledge management is associated with a higher level of organizational knowledge quality.

Social Media and Knowledge Management

Knowledge management these days involves technological components (Hansen, Nohria and Tierney, 1999). It utilizes information and communication technologies to improve people-to-people connections (personalization in Hansen et al., 1999) and/or people-to-document accesses (codification in Hansen et al., 1999). While deploying codification-based technologies was popular in knowledge management (Alavi, 1997; Zhang, 2006), the philosophy underlying such initiatives was criticized (e.g. McDermott, 1999) and the value of such efforts doubted (Dong-Gil and Dennis, 2011; Haas and Hansen, 2005). Personalization-based technologies, on the other hand, complement codification-based technologies by connecting knowledge owners and knowledge seekers, facilitating the exchange of tacit knowledge (Ackerman, 1998). Even in text-based online communities, the electronic connections forged between community members can be surprisingly strong to support creation, transfer, and absorbing of knowledge of highly tacit nature (Zhang and Watts, 2008a; Zhang and Watts, 2008b).

Social media technologies were designed to promote knowledge sharing (e.g. online communities and blogs) and knowledge creation (e.g. wikis and crowd-sourcing) while others were designed to keep people connected (e.g. Facebook and LinkedIn).
Through social media, user-generated content provides endless supply for reusable knowledge (Kane and Fichman, 2009). Through bridging temporal and spatial gaps between knowledge seekers and knowledge owners, social media technologies can make it easier to access knowledge residing in experts’ mind (Ackerman, 1998). Social media also allows people to maintain large numbers of electronic connections. Such connections can be strong enough to foster trust, common value, and deep understanding, thus facilitating knowledge-sharing between users (Baehr and Alex-Brown, 2010). Even if the connections are weak, the sheer number of them made it possible for one to acquire new knowledge and new perspectives from them (Constant, Sproull and Kiesler, 1996; McEvily and Zaheer, 1999). Resultantly, social media facilitates communication (Garg, Smith and Telang, 2011; Li, Chau and Lou, 2005), collaboration (Jarvenpaa and Majchrzak, 2010; Ransbotham and Kane, 2011), and innovation (Leimeister, Huber, Bretschneider and Krcmar, 2009).

Thus, social media excels at supporting both people-to-document and people-to-people connections, bringing multi-fold benefits to knowledge management. Organizations should consciously choose to utilize social media and use it to support their knowledge management initiatives. Conversely, having social media technologies in place would provide the technological environment for organizations to commit to knowledge management initiatives. Hence we posit,

\[ H_2: \text{A higher level of organizational social media assimilation is associated with a higher level of organizational emphasis on knowledge management.} \]

**Social Capital and Knowledge Management**

Consistent with our interests in organizational knowledge quality, organizational emphasis on knowledge management efforts, and organizational assimilation of social media, in this study we are concerned about social capital at the organizational level. Social capital refers to the relationships between organizations and the meanings of these relationships thereby making it an important productive resource that organizations should profit from (Tsai and Ghoshal, 1998). Social capital has been conceptualized as having three dimensions: structural, relational, and cognitive (Nahapiet and Ghoshal, 1998): Structural dimension of social capital captures the interaction pattern between organizations; relational dimension refers to the relationship assets such as trust nurtured through the interactions; and cognitive dimension describes the extent to which the organizations share a common understanding emerging from these interactions. The attributes of each dimension facilitate the combination and exchange of knowledge between organizations (Tsai and Ghoshal, 1998).

**Interrelationships between Structural, Cognitive, and Relational Dimensions of Social Capital**

Structural links or ties are a fundamental aspect of social capital as they create opportunities for social capital transactions (Adler and Kwon, 2002). Organizations with more frequent and deeper social interactions can develop similar opinions of markets and technologies. In this way, social interaction can help shape a common set of goals, visions and values (Tsai and Ghoshal, 1998). Therefore,

\[ H_{3.1}: \text{A higher level of structural capital of an organization is associated with a higher level of cognitive capital of the organization.} \]

Interactions between organizations create opportunities for stimulating trust and perceived trust worthiness (Tsai and Ghoshal, 1998). As the social interaction grows trust between the organization and its network of organizations develops. Trust can play a pivotal role in the willingness of network actors to share knowledge (Levin and Cross, 2004; Szulanski, Cappetta and Jensen, 2004), and constitutes the relational dimension a social capital resource (Inkpen and Tsang, 2005). We therefore, posit:

\[ H_{3.2}: \text{A higher level of structural capital of an organization is associated with a higher level of relational capital of the organization.} \]

Cognitive dimension of social capital make the common values and shared visions possible. Meaningful knowledge exchanges require some shared understanding between parties (Grant, 1996; Nahapiet and Ghoshal, 1998). These shared values and interpretations encourage the development of trusting relationships. Trusting relationships between the organizations and its network usually means that common goals and values have brought and kept them together (Barber, 1983). Considering an entity that shares the network's common values is likely to be perceived as trustworthy by other members of the network, we hypothesize:

\[ H_{3.3}: \text{A higher level of cognitive capital of an organization is associated with a higher level of relational capital of the organization.} \]

**Linking Social Capital to Knowledge Management**
Social capital creates channels of communications that promote exchange, creation and recombination of knowledge among individuals, business groups and business partners (Tsai and Ghoshal, 1998). In this way, social capital enables knowledge management activity such as knowledge acquisition (Anand, Glick and Manz, 2002; Yli-Renko et al., 2001), knowledge transfer (Inkpen and Tsang, 2005), and knowledge contribution (Wasko and Faraj, 2005) within and across the firm. To the extent that social capital facilitates organizational knowledge management, organizations must treat it as a productive resource, and consciously take advantage of it.

Specifically, social interactions are essential to knowledge exchange between organizations. Intensive, close social interactions produce stronger ties with closure (Coleman, 1988) that leads to tighter communication between organizations (Hoffman, Hoelscher and Sherif, 2005), increasing the depth, breadth, and efficiency of both technical and market knowledge exchanges (Yli-Renko et al., 2001). Broad and large number of ties also help organizations to be exposed to diverse and novel external knowledge (Zhao and Aram, 1995), which is important to new knowledge creation (McEvily and Zaheer, 1999). Structural capital is thus fundamental to successful knowledge management and key asset to organizational knowledge management efforts. We propose,

**H4.1** A higher level of structural capital of an organization is associated with a higher level of organizational emphasis on knowledge management.

Cognitive capital includes a shared paradigm between knowledge-exchanging parties that is manifested as a shared vision and a common goal (Tsai and Ghoshal, 1998). Cognitive capital is instrumental to knowledge management as it embodies the joint enterprise that inspires knowledge-sharing and the shared repertoire that facilitates knowledge-sharing (Wenger, 1998). The common knowledge is essential to “share and integrate aspects of knowledge which are not common between them” (Grant, 1996, pp.115-116, emphasis original). To the extent that cognitive capital facilitates more effective knowledge management, we hypothesize,

**H4.2** A higher level of cognitive capital of an organization is associated with a higher level of organizational emphasis on knowledge management.

Relational capital is concerned with the nature of relationships between organizations. It describes the trust between organizations and their commitment to each other (Wasko and Faraj, 2005). Relational capital allows organizations to share knowledge willingly and openly without concern for opportunistic behavior by their counterparts (Tsai and Ghoshal, 1998). It also motivates organizations to absorb acquired knowledge once they have confidence in the competency of the knowledge source that increases the effectiveness of knowledge sharing (Levin and Cross, 2004). Thus relational capital provides the social and cultural environment in which knowledge management occurs. As relational capital supports knowledge management, we posit,

**H4.3** A higher level of relational capital of an organization is associated with a higher level of organizational emphasis on knowledge management.

We depict the hypotheses described above graphically in Figure 1. Figure 1 also includes the control variable, firm size. Control variable is needed to isolate the effects from the factors that may heavily correlate with knowledge quality. It has been well established in the IS literature that firm size is often a proxy for resource slack and infrastructure (Mohr and Morse, 1977; Utterback, 1974).
RESEARCH METHODOLOGY AND DATA COLLECTION

Methodology and Construct Operationalization

We used the survey method to test our model. A survey instrument was developed by identifying appropriate measurements from a comprehensive literature review. All constructs except organizational assimilation of social media were modeled with reflective constructs, and measured with seven-point Likert scales. For organizational assimilation of social media, representative social media technologies (web services, blogs, wikis, LinkedIn and Facebook) were taken into account and a formative construct was used. Items were measured with the Guttman scale (Fichman, 2001). Details for the constructs are presented in Table 1.

<table>
<thead>
<tr>
<th>Construct</th>
<th>Variable</th>
<th>Item</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organizational Knowledge Quality</td>
<td>KQ1</td>
<td>The content of organizational knowledge available in the knowledge-based systems meets my needs.</td>
<td>(Dureckova and Gray, 2009)</td>
</tr>
<tr>
<td></td>
<td>KQ2</td>
<td>Overall, the quality of knowledge available in the knowledge-based systems is high.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>KQ3</td>
<td>Knowledge available in the knowledge bases are accurate.</td>
<td>(Kears and Sabherwal, 2006)</td>
</tr>
<tr>
<td>Organizational Emphasis on Knowledge</td>
<td>OEMP1</td>
<td>Knowledge and intellectual capital are viewed as key organizational assets.</td>
<td></td>
</tr>
<tr>
<td>Management (Reflective)</td>
<td>OEMP2</td>
<td>We have ready access to expert knowledge within the organization.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>OEMP3</td>
<td>Organizational knowledge is codified and made available to all employees.</td>
<td></td>
</tr>
<tr>
<td>Organizational assimilation of Social</td>
<td>SM1</td>
<td>What is the status of use and implementation of Web services?</td>
<td>Adapted from Organizational IT assimilation (Fichman, 2001)</td>
</tr>
<tr>
<td>Media</td>
<td>SM2</td>
<td>What is the status of use and implementation of Blogs?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SM3</td>
<td>What is the status of use and implementation of Wikis?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>SM4</td>
<td>What is the status of use and implementation of social media tools such as LinkedIn and Facebook?</td>
<td></td>
</tr>
<tr>
<td>Structural Capital (Reflective)</td>
<td>STRT1</td>
<td>We spend considerable time on meetings and telephone conversation with our important customers.</td>
<td>(Leana and Pil, 2006)</td>
</tr>
<tr>
<td></td>
<td>STRT2</td>
<td>We engage in open and honest communication with our customers.</td>
<td></td>
</tr>
<tr>
<td>Relational Capital (Reflective)</td>
<td>REL1</td>
<td>We know our suppliers on a personal level.</td>
<td>(Leana and Pil, 2006)</td>
</tr>
<tr>
<td></td>
<td>REL2</td>
<td>In our relationship with suppliers neither side takes any advantage.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REL3</td>
<td>Vendors promotion of technology influences us to adopt them.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>REL4</td>
<td>We rely on vendors in helping us choose right technology.</td>
<td></td>
</tr>
<tr>
<td>Cognitive Capital (Reflective)</td>
<td>COG1</td>
<td>We share the same vision of the industry as our competitors.</td>
<td>(Tsai and Ghoshal, 1998)</td>
</tr>
<tr>
<td></td>
<td>COG2</td>
<td>Our competitors who have adopted new technologies are viewed favorably by others in the same industry.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COG3</td>
<td>Competitors who are important to us think that new technologies are useful.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>COG4</td>
<td>Competitors whose opinions we value think new technologies are beneficial.</td>
<td></td>
</tr>
</tbody>
</table>

Table 1: Construct Operationalization

Data Collection

A market research firm was used to obtain sample data. The firm has over 6 million members across various industry verticals and professions. It can offer panelists across 40 business profiles and 300 consumer panel segmentations. With this large number of panelists on its rolls, it can offer panel members with much finer granular attributes to suit academic research. This kind of survey process provides greater control (based on the attributes selected), and is getting progressively more common in academic research (Rogers and Bazerman, 2008; Thau, Bennett, Mitchell and Marrs, 2009). The
participants were mostly IT professionals and managers from a wide range of industries and firm sizes, and 300 usable responses were obtained. Over 60% of respondents had more than ten years of professional experience.

RESULTS
Assessment of Measurement Validation
The psychometric properties of the measurements are evaluated by the component-based partial least squares (PLS) approach with the Smart-PLS software package (Ringle, Wende and Will, 2005). Results suggest that the measurement models meet all recommended criteria to establish convergent validity, individual item reliability, composite reliability, and discriminant validity (Barclay, Higgins and Thompson, 1995). Due to space limitations we do not report the detailed measurement validation results here.

Assessment of Structural Model
PLS structural model results are summarized in Figure 1. All hypotheses are supported at $p<0.01$ level except H4.2 which is about the influence of cognitive capital on organizational emphasis on knowledge management. H4.2 is not significant at $p<0.05$ level. The model accounts for 54 percent of variance in organizational knowledge quality and for 37 percent of the variance in organizational emphasis on knowledge management.

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Hypothesis Details</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>A higher level of organization emphasis on knowledge management is associated with a higher level of organizational knowledge quality.</td>
<td>Sig. ($p&lt;0.01$)</td>
</tr>
<tr>
<td>H2</td>
<td>A higher level of organizational social media assimilation is associated with a higher level of organizational emphasis on knowledge management.</td>
<td>Sig. ($p&lt;0.01$)</td>
</tr>
<tr>
<td>H3.1</td>
<td>A higher level of structural capital of an organization is associated with a higher level of cognitive capital of the organization.</td>
<td>Sig. ($p&lt;0.01$)</td>
</tr>
<tr>
<td>H3.2</td>
<td>A higher level of structural capital of an organization is associated with a higher level of relational capital of the organization.</td>
<td>Sig. ($p&lt;0.01$)</td>
</tr>
<tr>
<td>H3.3</td>
<td>A higher level of cognitive capital of an organization is associated with a higher level of relational capital of the organization.</td>
<td>Sig. ($p&lt;0.01$)</td>
</tr>
<tr>
<td>H4.1</td>
<td>A higher level of structural capital of an organization is associated with a higher level of organizational emphasis on knowledge management.</td>
<td>Sig. ($p&lt;0.001$)</td>
</tr>
<tr>
<td>H4.2</td>
<td>A higher level of cognitive capital of an organization is associated with a higher level of organizational emphasis on knowledge management.</td>
<td>Not Significant</td>
</tr>
<tr>
<td>H4.3</td>
<td>A higher level of relational capital of an organization is associated with a higher level of organizational emphasis on knowledge management.</td>
<td>Sig. ($p&lt;0.05$)</td>
</tr>
</tbody>
</table>

Table 2: Results of Hypotheses Testing

DISCUSSION AND PRELIMINARY CONCLUSIONS
In this paper we reported a study on how organizations can utilize social media and social capital for their knowledge management efforts. We discussed how social media could provide a technical environment conductive to knowledge management and how social capital could facilitate knowledge creation and knowledge sharing. With data collected from a survey, we demonstrated both social media and social capital could help organizations in knowledge management initiatives thereby aiming to improve the quality of their knowledge asset.

While the literature on the impact of social media and social capital on knowledge management activities (such as knowledge creation or knowledge transfer) abound, this study differs from previous research in two aspects: first, we attempted to link social media and social capital to overall organizational knowledge management initiative. By introducing organizational emphasis on knowledge management into the model, we hope to highlight that organizations can consciously take advantage of social media and social capital and build competitive advantage based on them. Second, we focused on knowledge quality as our dependent construct. While research efforts have been mostly focused on the volume of knowledge, we believe that quality of knowledge is the true source for competitive advantage and thus the shift to knowledge quality is both necessary and timely.
REFERENCES


