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Crossing power and knowledge boundaries in learning and knowledge sharing: the role of ESM

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Crossing power and knowledge boundaries in learning and knowledge sharing: the role of ESM

Abstract

Purpose – *The purpose of this paper is to investigate the crossing of knowledge and power boundaries within a bureaucratic organization using Enterprise Social Media (ESM). Carlile's (2004) boundary crossing framework is used to guide this research.*

Design/methodology/approach – *This is a qualitative study based on semi-structured interviews and observations in a large Norwegian public sector organization.*

Findings –*We find that crossing knowledge and power boundaries using ESM is problematic at both a syntactic, semantic and pragmatic level. ESM is used predominantly for sharing, storing and retrieving explicit knowledge, which is a display of crossing the information-processing boundary. While the use of ESM allows for potential power shifts among different levels, shared meaning, taking the perspective of other and new knowledge-in-practices are not achieved. Therefore examples of crossing the semantic and pragmatic knowledge boundaries are rarely found.*

Research limitations/implications – *The framework could be applied to a variety of contexts to further explore the role of ESM in learning and knowledge sharing and its ability to cross power and knowledge boundaries.*

Practical implications – *Organizations will benefit from understanding issues related to the use of ESM to enhance knowledge sharing, learning and the development of new practices, as well as potential power, knowledge and trust issues that may arise in connection with the use of ESM.*

Originality/value – *This paper addresses a gap in the literature around discussions of power, trust, boundary crossing and the use of enterprise social media for knowledge sharing and learning.*

Keywords *Knowledge sharing, ESM, Power, Learning, Trust, Boundary crossing*

Paper type *Research paper*

Introduction

Learning in and by organizations is intimately tied up with the acquisition, storage and sharing of knowledge (Huber, 1991; Van Grinsven and Visser, 2011). In order to enhance learning through knowledge sharing, many organizations have made substantial investments in intranet and Enterprise Social Media (ESM) programs, but the success of these programs is both unclear and underexplored. Some studies indicates that blogs, depended upon its use, can support the social process of organizational learning which promote collective dialogue and ensure organizational learning through knowledge sharing (Baxter and Connolly, 2013). But for the most, studies have scrutinized these programs primarily through the lens of technology usage, and tend to miss some of the dynamic, collaborative and interactive processes that are vitally important for knowledge sharing (Leonardi *et al.*, 2013). First of all, knowledge sharing programs' functionality is limited to sharing of explicit knowledge only. Second, the lack of considering how interpersonal context and individual characteristics influence knowledge sharing is problematic (Carlile, 2004). Third, the fact that knowledge sharing may be related to costs of making one's ideas available to a large audience is not considered (Cabrera and Cabrera, 2002). Fourth, the unwillingness to use technology due to negative experience and low expectations needs to be acknowledged (Venkatesh *et al.*, 2003). Finally and most importantly for the purpose of this paper, employees' fear of losing power is considered to be a major inhibitor of learning through knowledge sharing (Newell *et al.*, 2009), and such fears are believed to be greater when knowledge sharing occurs electronically (Gupta and Govindarajan, 2000).

The purpose of this paper is to investigate to what extent ESM, as a knowledge sharing tool, enables the crossing of knowledge and power boundaries, thus adding to the organizational knowledge and learning literature. Towards that purpose, in this paper first three types of knowledge boundaries are discussed, followed by research methods and empirical results and discussion. Finally, the paper ends with conclusions.

Knowledge boundaries

Following Carlile's (2004) integrated framework for managing knowledge across boundaries, in this paper three types of boundaries are distinguished that play a role in knowledge sharing, storing an organizational learning: syntactic/information-processing, semantic/interpretative and pragmatic/political.

Syntactic/information-processing boundaries

At the syntactic/ information-processing boundary, knowledge transfer processes between a sender and a receiver are observed. By transferring knowledge, the syntactic boundary is crossed and a common lexicon is developed. It is recognized that most traditional technology-based knowledge sharing programs are following such information-processing assumptions, where explicit knowledge is transferred.

Semantic/interpretative boundary

At the semantic/ interpretative boundary, shared meaning is created through knowledge translation. In crossing the semantic boundary, the emphasis is put on knowledge translation and common meaning development. At this level the differences in meaning as well as the importance of context-specific aspects of knowledge sharing, especially in relation to tacit knowledge sharing, are recognized. Based on the interactive nature of Enterprise 2.0 tools, it is suggested by the organization that implementing ESM would provide space for open discussions and help create shared meaning and enhancing knowledge sharing within and across communities.

Pragmatic/political boundary

At the pragmatic/political boundary, a difference in interests is observed, ultimately resulting in conflicts among different actors. In order to resolve these conflicts, different actors need to be willing to negotiate their existing practices and to transform the existing knowledge, leading to common interests development. At the pragmatic boundary it is argued that knowledge is shared through a process of transformation of diverse knowledge where co-creation of common grounds and understanding occurs, which leads to new practices (Bechky, 2003).

In hierarchical organizations with clear power differences, knowledge and information may be unevenly distributed, giving higher management echelons a privileged position in shaping organizational practices and sensemaking, maintaining their positions and securing their interests (Weick and Ashford, 2000). Wang and Noe (2010) argue that by sharing knowledge in a community of practice facilitated by technology, e.g. ESM, a broader audience can be reached, and hence, personal power and recognition from the other users can be gained.

Research methods

The study was conducted in 2014 in a large bureaucratic and hierarchical Norwegian public sector organization, referred hereafter to as BA. BA has 4,000 employees responsible for high-level expertise within transport and security to deliver, support and administer the Norwegian National Railway System. In 2012, top management made a decision to implement a new software solution (ESM) to improve knowledge sharing and the flow of information by linking employees with related and cross-functional competences closer together through ESM. The ESM tool is based on a 360 degree and a SharePoint-solution, and includes functions such as blogs and wikis, discussions forums, connecting functions, electronic archives and online chat-functions. BA has previous experience with another IT-system, so ESM is to increase the facilitation of learning through knowledge sharing. BA is found suitable for investigating knowledge sharing and possible knowledge boundaries.

BA provided the possibility to study knowledge sharing in depth, which is beneficial as most knowledge sharing studies rely on quantitative studies without the possibility of exploring the characteristics of knowledge boundaries between professions. The choice of informants was motivated by searching to cover several geographic locations, as BA is a cross-national organization. Further, the informants have experience with using ESM, preferably representing several professions or employees that need to work across the whole organizations. A total of 10 informants were selected, 5 male and 5 female, with an age span from 25-58 years and with experience in BA between 3 and 33 years. They all had experience with previous versions of intranet as well as the new ESM tool. One was a top manager and another one was a middle manager, supervising 25 employees. Three were engineers and five worked on different locations as HR-director or HR-adviser.

An interview protocol was developed and used to guide the semi-structured interviews. Additionally, a substantial number of documents related to ESM were collected. Also, in order to grasp in more detail how ESM was used, blogs, discussions and comments were analyzed. Hence, the way BA used ESM was observed through a number of examples.

All interviews were transcribed, imported, and coded in NVivo. The analysis of the interviews involved, first, detailed and descriptive write-ups, where transcribed interviews were coded. Second, open and axial forms of coding were used to identify categories and related sub-categories (Strauss and Corbin, 2008). Observations from ESM use and notes from the observations along with informal conversations were also transcribed and coded into NVivo.

Results and discussion

Our findings show that the use of ESM for crossing the three knowledge boundaries of transferring, translating and transforming knowledge is problematic.

Crossing the syntactic boundaries

When crossing the syntactic boundary, a transfer of documents is observed resulting in development of a common lexicon with a primary focus on knowledge storage and retrieval (Carlile, 2004). The results show that the use of ESM enacts syntactic boundary crossing as the system is widely used to share, store and retrieve explicit knowledge. Such use of the ESM is observed across different levels, where top management is noticed to be particularly active in sharing knowledge in a form of posting weekly newsletters. This is well-received by the employees and it is explained that

"…you can have discussions with the leaders, there are posted articles with different topics where everybody can comment. The fact that our CEO has a weekly letter where she updates us on what has happened over the week is very positive. It is arranged so that you can be heard if we got something that you wish to comment on." (I2)

However, crossing the information-processing boundary is found to be sporadic, and despite the top management's endorsement, it is not achieved frequently. Some issues identified in that respect are related to the quality of the information, difficulty in using the system and finding information on it, experience, and technology adoption issues. While employees appreciate the opportunity to share knowledge between different departments and hierarchical levels, they also recognise that *"what's posted on the front page should be quality checked in some way or another"* (I4). It is further recognised that finding information on the ESM is difficult. Employees further explain that overall, the new system is difficult to use and is not very intuitive, which additionally obstructs knowledge sharing and crossing the syntactic knowledge boundary;

"The thing is that you need a training course in order to use it, and also it [Sharepoint] isn't intuitive – you know, like Apple. So it is completely hopeless, to say it like that. It is not user friendly" (I6).

The comment above relates to some apparent technology adoption issues, such as performance expectancy, effort expectancy, social influence, facilitating conditions, experience (Venkatesh *et al*., 2003). The perceived difficulty in using ESM is a clear illustration of effort expectancy issues, related to the ease of use of the system. The perceived difficulty of using of the system is also related to the user's experience. The results show that people who are less experienced with social media in personal life hesitate to use the ESM system;

"I've clicked on the 'like'-button a couple of times, but that's the only thing I've done and the furthest I've gone. That is perhaps why I'm not on Facebook, I don't have the need to write about what I am doing" (I4).

Even experienced social media users express some frustration toward the current utilization of ESM, as

"I do believe it has a huge potential that we don't use. That we don't manage. Because if you're going to use these discussions…I think it would be fun to post discussion threads…There are some communities that are much better,…and they have fun discussing, and post tips on books…we don't do that. We sit by ourselves and fumble too much alone" (I5).

The informants recognise that part of the issue of under-utilization of ESM is related to facilitating conditions, such as training provided to support the use of the system (Venkatesh *et al*., 2003). Provided training needs management support for using ESM to enhance knowledge

sharing activities (Paroutis and Al Saleh, 2009).The informants recognise that the uptake of ESM as well as the lack of awareness of its wider functionality could be due to the way training has been arranged. Training courses have been organized on a voluntary and individual basis. Individual training sessions are claimed to help employees by positively influencing their understanding and utilization of the ESM tool. However, employees explain that because of the voluntary and individual nature of training they are less able to discuss issues and challenges between different departments. The voluntary nature of training has resulted in low attendance rates, especially amongst middle management;

> "I think leaders' use of it [Sharepoint] has been poor. Because... often it is the case that employees are sent to courses, and then leaders are those who are supposed to 'brand' that you are going to make use of it. But then there is a lack of knowledge among them [leaders], because they don't prioritize to go to the same course" (I7).

It is further pointed out that many middle managers continue working with old practices, such as sending out emails with large-size attachments, which contradicts the new goals set by top management on how to use ESM. One informant explains:

> "I don't think we are good enough in sharing things we know. And of course, the leaders have a job to do, because when... we've had leaders who work with ESM, but not all have fully taken on the role and utilized ESM. So it sort of stops there... that leaders send out things via e-mail and such instead" (I5).

The low level of knowledge about ESM among many middle managers and their lack of participation, as well as their mixed messages about the use of the system, seem to result in diminished trust both in management and the ESM tool. This further affects the employees' views on using the system and is recognized as a significant barrier to utilizing full ESM's functionality. The lack of involvement of middle management displays a clear issue with social influence as "*the degree to which an individual perceives that important others believe he or she should use the new system*" (Venkatesh *et al*., 2003, p. 451). The lack of support, endorsement and enthusiasm from the middle managers sends employees a message that this is not important and that ESM can just be used to reinforce old practices. The long transition period has also created uncertainty among employees who explain that:

> "It should have been decided that R [the old practice] was to be shut down within a specific date, so that it didn't exist any longer from 'that' specific date. And that has happened now…But I think it should have been done before, not after two years…There has not been a clear demarcation from going over to a new system" (I6).

Top management fails to bring about the desired behavior in that a seemingly large proportion of employees continue to perform old practices with respect to document storing. Adopting new practices is not firmly encouraged, thus ESM is used as a new tool to perform old practices of storing and retrieving knowledge, i.e. crossing the information-processing boundary.

Lastly, it is noticed that the information-processing boundary gets crossed upon request, when someone is specifically asked for help. As explained by one informant: *"...when you ask, people share. But you kind of have to ask 'have you got anything on this?' I don't think we are good enough to publish stuff that we've got*" (I5).

The findings show that within BA, ESM is used to share explicit knowledge, which illustrates crossing of the information-processing boundary. Also, knowledge sharing appears to be a sporadic process obstructed by difficulty to use the system and to find information on it, experience, i.e. predominantly technology adoption issues.

Crossing the semantic/interpretative boundaries

The findings show that top management continuously encourages employees to participate in discussions and blogs. Employees appreciate that they take the time to reply to questions that are posed, regardless whether comments are positive or critical of management's point of view. As a result of such engagement, employees recognize a number of areas where ESM plays a role, such as discussions, access to broad range of topics and information, and the possibility to convey their own opinions. However, quite controversial views are expressed in relation to the effect these areas have on knowledge sharing, which subsequently reveal that the interpretative boundaries get rarely crossed. Issues obstructing the crossing of the sematic boundary are related to the perceived value of the discussions, misinterpretations, language, own image, negative comments, and the preference to ask people for clarifications.

By posting articles with a broad range of topics and inviting viewpoints from across the organization, participants may gain novel perspectives and new information. However, some employees feel that the majority of articles and stories are too much about the result and too little about the process in order for them to learn. Thus common and shared meaning is not constructed:

> "(…) people like to hear about good and bad stories, but there are many *good* stories. It does not show that much… it lacks details, and they could have published reports about experiences. Instead of just 'happy-news' things could have been a little bit more constructive so that others can learn from it. In my opinion, it is perhaps too little of that [experiences]" (I6).

Because common/shared meaning is not created using the ESM, people prefer to ask colleagues to provide them with additional clarifications and help. Informants explain that:

> "When facing a problem, I ask colleagues if they can share their experience. The threshold is lower for sharing knowledge when you contact colleagues directly" (I1).

> "People are practically oriented…through practical work they find solutions...they do not focus on sharing knowledge by using a computer" (I3).

It is further pointed out that people follow the discussions but rarely contribute to them, which prevents shared meaning formation. It becomes apparent that part of the lack of participation is based on fear of misinterpretation, especially when dealing with challenging tasks. The perceived danger of misinterpretation is strongly evident when employees consider publishing a discussion topic or a comment. It is evident that participants recognise the lack of common meaning as problematic and acknowledge that the trade-off using ESM to meaning creation requires great efforts and commitment. Part of these efforts is related to language issues as employees struggle to make sense of the appropriate language tone. Hence, they spend a lot of time formulating their own contributions in a formal tone:*"...I think there are many who are afraid that what they write is not correct…It is a lot of negativity, especially among regular users, nitpicking if things are not correct or can be understood in different ways*" (I2). Some participants consider the language barrier so significant that they would not even attempt to cross it as they worry that they might be misinterpreted. Additionally, employees are concerned with other people's reaction and with their own image. People are generally apprehensive about others' opinions and negative comments, which as a result affects people's proclivity to contribute and create shared meaning;

> "...the fact that others can comment, and that their feedback can be crass, might make it more difficult to participate. If a person has decided to share something, and someone answers with a lot of criticism, then I think the threshold for further participation increases a lot. I am absolutely certain of that" (I2).

The lack of politeness of a minority of colleagues makes potential contributors refrain from sharing and transforming knowledge on ESM.

"Because in a way, you have to cope with silly comments, at the same time you have to think 'What if someone say this about me? Do I want to be seen in that way?' So for me it is a threshold to get over" (I5).

This small minority of regular contributors with rude behaviors dominate ESM usage, in terms of setting a standard for what type of knowledge to be involved in discussions, as well as discouraging others from contributing, due to insensitive behavior (which earned these regular contributors the nickname 'intranet trolls'). A troll is a person who makes a deliberately offensive or provocative online posting, and is regarded as an individual who intentionally disrupts normal on-topic discussions (McAfee, 2006). The effect these "intranet trolls" have on knowledge sharing and crossing knowledge boundaries is threefold: setting a benchmark for content, discouraging others from contributing, and using defensive, unprofessional and negative comments towards colleagues. First, the strong presence of the minority seems to suggest that they are in some control over what sort of information others might expect to find. Second, the regulars are not necessarily viewed upon as credible carriers of expert knowledge by other employees. It is stressed that their offensive, negative and provocative style results in employees resistance to participate, as *"just what is perfect will give you necessary mobilization to undertake silly and hurting comments once your contribution is explored for the whole organization to see"*(I3).

Interpretative knowledge boundaries are rarely crossed through using ESM. Participants find it hard to actively participate and to create common meaning for reasons such as to the perceived value of the discussions, fear of misinterpretations and negative comments, danger of damaging own image and reputation.

Crossing the pragmatic/political boundaries

The informants emphasize that often the discussion topics are generic, which is found neither to be useful to people nor to benefit their practice and interests. This is an illustration of an obstacle to crossing the political boundaries as the discussions on ESM do not connect with other people's interests and do not trigger negotiations, transformation of knowledge and new practices;

"Usually the leaders in the upper echelons are the ones who post the first blogs. And then there is a regular bunch of people who reply [laughter]" (I3).

The regular users are often described in a negative tone, as people who comment on a variety of topics without necessarily having relevant expertise, i.e. the intranet trolls. The crossing of political boundaries are obstructed by the intranet trolls because their contributions are found to hinder constructive debate "*…one sees that some…don't have any inhibitions. They just keep repeating themselves over and over again*" (I7).

The other major obstacle in crossing the political boundary to knowledge sharing is the fear of loss of power and status. Employees are either afraid of making mistakes or they are not willing to give away too much knowledge; "*You are afraid of making mistakes, you know*" (I2).

Also, some informants strongly point out that people hold back contributions due to concerns of feeling exposed to new ways of working and are also afraid to reveal how they work. They don´t trust their colleagues and questions their benevolence, which makes them vulnerable in exposing their knowledge (and what they don't know);

"I understand why some people don't want to publish half-finished sketches, because then you reveal some things of yourself and how you work. And people work very differently" (I5)

The reasoning behind this could be that if people know too much about how someone works they could take advantage of it. Additionally, there might be a fear of being judged for not

having interesting knowledge, or not being knowledgeable enough to share. Another major obstacle in crossing political boundaries is a loss of power, and the informants have recognized that knowledge is power, thus knowledge might be withheld deliberately;

> "I guess it has been a culture, historically, that the more knowledge you possess the more special you become in the organization, and then you can take advantage of that situation" (I6).

The use of ESM does not seem to facilitate crossing this boundary due to great fear of loss of power and status and uncertainty about the usefulness and the practical benefit of the discussions formed in ESM.

Conclusion

We find that crossing knowledge boundaries using ESM as a boundary object is problematic on both a syntactic, semantic and pragmatic level. ESM is used predominantly for the transfer, storage and retrieval of explicit knowledge (or information), not for knowledge translation and transformation. ESM is used for information management (Alin *et al*., 2013). A number of issues around the quality of the information published on ESM, difficulty in using the system and finding information on it, i.e. technology adoption issues is identified, which obstructed the information-processing boundary crossing. It was noted by the informants that training courses were provided, which could be seen as boundary objects, described as "representing, learning about, and transforming knowledge to resolve the consequences that exist at a given boundary" (Carlile, 2002, p. 442). However, the informants further stressed that the training courses provided were more about explaining the technicality of ESM as new ways of storing and improving search for documents than ESM possibilities for knowledge sharing. This revealed a lack of facilitating conditions to help understand the benefit of the system to enhance learning through knowledge sharing. Facilitating conditions are shown to have a positive effect on system's usage and need to be taken into account (Venkatesh *et al*., 2003).

The lack of social influence and managerial support additionally sent mixed messages about the importance and the value of using the system. Employees are less likely to willingly make use of the new technology when not aware of possible improvements to knowledge sharing offered by such new tools (Orlikowski and Scott, 2008). In fact, Baxter and Connolly (2014) literature review on implementations of Web 2.0. tools, accentuate the importance of ensuring a common vision between management and employees on why the technology should be used for knowledge sharing. In our study, however, middle managers did not utilize the new tool, not sharing the vision of its importance, which was noticed by their employees. This point also adds to the stream of research that underlines the strategic significance of middle managers as change agents, who influence employees' sensemaking and motivate them in co-constructing work practices, consistent with the goal of facilitation of knowledge sharing (Mumford *et al*., 2007; Maitlis and Christianson, 2014; Filstad, 2014). The role and support of management is crucial to ensure a smooth implementation (Baxter and Connolly, 2014).

The lack of endorsement from middle management as well as the low perceived value of the discussions, fear of misinterpretations and negative comments, and apprehension towards damaging own image appeared to be some of the prominent issues obstructing the shared meaning formation, i.e. crossing the interpretative knowledge boundary. While a number of employees recognized some benefits of using ESM in terms of reaching broad knowledge and discussions, apart from the regular users, most people appeared to be passive participants and did not contribute to any discussions. In that respect, it is argued that ESM can serve as perspective making boundary object when people are actively engaging in discussions, but also as perspective taking for those who only read these discussions (Boland Jr and Tenkasi, 1995). Therefore, the passive use of ESM as a boundary object may be found to be beneficial

in perspective taking, providing access to diverse knowledge from different communities (Carlile, 2002).

However, while the political knowledge boundary was rarely crossed, the use of ESM bestowed employees with an increased sense of power as they received the ability to comment on top management blogs and contradict their viewpoints, i.e. challenging the legitimate power within the organization. For some employees this arena was found to function as a door opener to develop and nurture weak ties in order to exchange experiences and thus learn from each other. This can serve as perspective taking where different communities engage in dynamic interactions and to produce new knowledge (Boland Jr and Tenkasi, 1995). However, it is stressed that new knowledge creation and knowledge transformation, which characterize this boundary, are the result of questioning and revising existing practices and routines (Huber, 1991; Carlile, 2004). This can be achieved through the discussions on ESM serving as boundary objects which are central in stimulating dialogue, recognizing differences and bridging different perspectives. Through spanning the political boundary, a shared understanding between groups is achieved which leads to new learning practices where knowledge gets incorporated into the work of others (Bechky, 2003). However, in this study it was found that this boundary was rarely crossed as it created conflicts between ESM users. Also, knowledge sharing is based on trust among parties, where trust related to competence and benevolence is crucial (Abrams *et al.*, 2003). Instead, the empowerment of people to openly share their opinions and contradict top management's views was seen as intrusive and not productive, which was recognized as a barrier to negotiating common meaning and achieving common interests and new practices, i.e. crossing the interpretative and the political boundaries. As such it contradicts the emphasis many organizational theorists place on the importance of on an open learning climate, in which opinions can be freely exchanged and management's views freely put to common inquiry (Huber, 1991; Van Grinsven and Visser, 2011).

References

Abrams, L.C., Cross, R., Lesser, E. and Levin, D.Z. (2003). "Nurturing interpersonal trust in knowledge-sharing networks," *Academy of Management Executive,* Vol. 17 No. 4, pp.64-77.

Alin, P., Iorio, J. and Taylor, J. (2013), "Digital boundary objects as negotiation facilitators: spanning boundaries in virtual engineering project networks", *Project Management Journal*, Vol. 44 No. 3, pp. 48-63.

Baxter, G. J. and Connolly, T. M. (2013), "The "state of art" of organizational blogging", *The Learning Organization,* Vol. 20 No.2, pp. 104-117

Baxter, G. J. and Connolly, T. M. (2014), "Implementing Web 2.0 tools in organisations: feasibility of a systemic approach", *The Learning Organization,* Vol.21 No. 1, pp. 6-25

Bechky, B. A. (2003), "Sharing meaning across occupational communities: The transformation of understanding on a production floor", *Organization Science*, Vol. 14 No. 3, pp. 312-330.

Boland Jr, R. and Tenkasi, R. (1995), "Perspective making and perspective taking in communities of knowing", *Organization Science*, Vol. 6 No. 4, pp.350-372.

Cabrera, A. and Cabrera, E. (2002), "Knowledge-sharing dilemmas", *Organization Studies,* Vol. 23 No. 5, pp. 687-710.

Carlie, P. (2004), "Transferring, translating and transforming: An integrated framework from managing knowledge across boundaries", *Organization Science,* Vol. 15 No. 5, pp. 555-568.

Carlie, P. (2002), "A pragmatic view of knowledge and boundaries: Boundary objects in new product development", *Organization Science*, Vol. 13 No. 4, pp. 442-455.

Filstad, C. (2014), "Learning and knowledge as interrelations between CoPs and NoPs", *The Learning Organization,* Vol. 21 No. 2, pp. 70-82.

Huber, G.P. (1991), "Organizational learning: The contributing processes and the literatures", *Organization Science*, Vol. 2 No. 1, pp. 88-115.

Leonardi, P., Huysman, M. and Steinfeld, C. (2013), "Enterprise social media: Definition, history, and prospects for the study of social technologies in organizations", *Journal of Computer-Mediated Communication,* Vol. 19 No. 1, pp. 1-19.

Maitlis, S. and Christianson, M. (2014), "Sensemaking in organizations: Taking stock and moving forward", *Academy of Management Annals,* Vol. 8 No. 1, pp. 57-125.

McAfee, A. (2006), "Enterprise 2.0.: The dawn of emergent collaboration", *MIT Sloan Management Review*, Vol. 47 No. 3, pp. 21-28.

Mumford, M., Hunter, S., Eubanks, D., Bedell, K. and Murphy, S. (2007), "Developing leaders for creative efforts: A dominant-based approach to leadership development", *Human Research Management Review,* Vol. 17 No. 4, pp. 402-417.

Newell, S., Robertson, M., Scarbrough, H. and Swan, J. (2009), *Managing Knowledge Work and Innovation*, 2nd edition, Palgrave Macmillan, London.

Orlikowski, W. and Scott, S. (2008), "Sociomateriality: Challenging the separation of technology, work and organization", *Academy of Management Annals*, Vol. 2 No. 1, pp. 433-474.

Paroutis, S. and Al Saleh, A. (2009), "Determinants of knowledge sharing using Web 2.0 technologies", *Journal of Knowledge Management,* Vol. 13 No. 4, pp. 52-63.

Strauss, A. and Corbin, J. (2008), *Basics of Qualitative Research*, Sage, Thousand Oaks, CA.

Van Grinsven, M. and Visser, M. (2011), "Empowerment, knowledge conversion and dimensions of organizational learning", *The Learning Organization*, Vol. 18 No. 5, pp. 378-391.

Venkatesh, V., Morris, M., Davis, G. and Davis, F. (2003), "User acceptance of information technology: Toward a unified view", *MIS Quarterly*, Vol. 27 No. 3, pp. 425-478.

Wang, S. and Noe, R. (2010), "Knowledge sharing: A review and direction for future research", *Human Resource Management Review,* Vol. 20 No. 2, pp. 115-131.

Weick, K.E. and Ashford, S.J. (2000), "Learning in organizations", in Jablin, F. and Putnam, L. (Eds), *The New Handbook of Organizational Communication,* Sage, Thousand Oaks CA., pp. 704-731.