

Pre-requisites to transferring tacit knowledge using social media

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Driven by a knowledge economy, many organizations have recognized knowledge as a valuable intangible resource that holds the key to competitive advantages (Taylor 2007) and have increasingly supported the development and growth of communities of practice's to meet their business needs and objectives. With the advent of social web initiatives, many organizations are turning to social media tools to support communication, information and knowledge exchange. In 2013, the KNOWNET (Engaging in **Knowledge Networking** via an interactive 3D social supplier Network) project was launched under the direction of Dr Susan Grant (PI) with the specific aim of exploring knowledge transfer across a multi-level supply chain in the UK insurance sector using interactive social web tools. The key objectives being to explore the value of community centric platforms using social media tools to support tacit knowledge sharing across insurance supply chains. Amongst some of the key requirements of the research, was a focus on an industrial sector that uses traditional top down knowledge management systems and trialing the social supplier network (SSN) across two European supply chains in order to highlight cultural differences in knowledge sharing using these tools. A measurement tool was also developed to measure knowledge sharing (Vol of contribution)+(the quality of the knowledge asset being shared : degree of usefulness/helpfulness)+ the type of knowledge being shared.

In this paper an understanding of knowledge transfer is sought, and in particular the role Social media tools play in this process. Of central concern is the role social media tools may have in the transfer of tacit knowledge.

Tacit knowledge which was first used by Michael Polanyi (2009) is the knowledge that people usually acquire individually or as a group in the workplace in the process of learning by doing. It is always viewed in contrast to explicit knowledge which is articulated, written down, or published academic knowledge found in books, manuals, papers, etc. In contrast, tacit knowledge is more dependent on its holder, attached to a person's mind, difficult to communicate easily, and deeply grounded in an individual's action and experience. Nonaka and Takeuchi (1995) identified two elements of tacit knowledge: cognitive and technical. The Cognitive dimension includes beliefs, ideas, paradigms, values, intuition, and mental models. The Technical dimension is more related to "know-how", crafts and "informal skills" which are commonly accepted definitions of tacit knowledge (Leonard and Insch, 2005; Haldin-Herrgard, 2000; Nonaka, 1994).

There are elements of tacit knowledge, which can only be transferred successfully through a process of demonstration, or show-how, facilitated though face-to-face contact between the transmitter and receiver (Leonard 2005). High levels of face-to-face contact and a process of socialization are usually required to establish and reinforce a relationship of trust and confidence between individuals or groups before the process of transfer of knowledge can take place. The presence of a relationship of trust between individuals indicates an ability to share a high degree of mutual understanding, built upon a common appreciation of a shared social and cultural context. Both trust and mutual understanding, developed in their social and cultural contexts, are prerequisites for the successful transfer of tacit knowledge (Nahapiet and Ghoshal 1997)

Over time, individuals and groups will develop an appreciation of their trading partner's social context. Together they will establish their own social norms and expectations of one another, thereby enabling the development of trust and with it the successful exchange of knowledge. The facets of social capital — social interaction ties, trust, norms of reciprocity, identification, shared vision and shared language have long been associated with the influence of an individuals' knowledge sharing in virtual communities (Nahapiet and Ghoshal 1997). Establishing a level of trust required to facilitate the exchange of knowledge also favours co-presence and co-location.

The two tools used on the KNOWNET project included a Social networking site that utilized web technologies with characteristics such as multiple-way communication, user-generated content, possibility for global networking, multimedia-oriented, and user-friendliness (Panahi et al., 2012). The main focus of social web technologies is on enabling users to be more active on the internet, to produce, participate, collaborate and share knowledge or communicate with other people. Social interaction is central to effective knowledge sharing and learning (Kekwaletswe 2007), and the social media tools promote social interaction at a distance.

Examples of social web technologies include blogs, wikis, social networking sites, micro-blogging, social bookmarking, virtual world environments etc. The combination of those features and associated tools have made the social web a good channel for knowledge sharing activities, including knowledge sharing of the tacit variety.

Blogging, message streams, wiki's provide a communication channel for people to broadcast information that they likely would not share otherwise using existing channels (e.g., email, phone, IM, or weblogs). Informal communication posts provide a variety of impacts on collaborative work (e.g., enhancing information sharing, building common ground, and sustaining a feeling of connectedness among colleagues). In brief, knowing what others have been doing and thinking and what new things may have happened or are now happening to them may help one to develop more accurate person perceptions of others (e.g., knowing people's competence, personality, behavioural characteristics) Kraut et al 1993).

Through conversations in informal communication, people often hear stories about each other's experiences and thoughts, which may produce a more memorable set of information to use in constructing schemas about others. Similarly keeping aware of others' personal life updates via SNS's may help update people's schemas and build a background perception about a person. Keeping in touch with colleagues may increase the chances of sharing personal life updates, and may raise the possibilities for discovering similar experiences and attitudes (e.g., places both have visited, similar reactions to current events).

Personal Benefits

Informal communication with people at work (both related and unrelated to active projects) can lead to acquiring valuable information that is beneficial for one's personal work goals. For example, keeping in touch with co-workers from different business units may help employees acquire new information and knowledge about their professions, gain different perspectives for their own jobs, and even discover new collaboration opportunities (Whittaker 1994).

Researchers studying social networks have suggested that a greater proportion of novel information flows to individuals through weak rather than through strong ties. This is not only because novel (and thus potentially more valuable) information is more likely to be gained from people outside of one's daily activities (Granovetter 2004), but also that rapid feelings of mutual trust - called 'swift' trust - are more likely to form in weak tie interactions (Levin et al 2002). Weak ties are the most common social relationships that people have in their personal social networks. Thus an increased level of informal communication *throughout* one's social network at work may increase the chances of sharing and gaining valuable information. In one's social network, there are often individuals who have common interests (e.g., profession, hobbies) but different specific experiences. Informal conversations might often come about via shared interests but distinct expertise, so as to increase possibilities of information exchanges that they perceived as valuable as well as from trusted sources.

In addition to the social network platform a virtual world (VW) environment was created. VW's are environments where "thousands of individuals can interact simultaneously within the same simulated three-dimensional space" and engage in collaborative knowledge sharing and learning activities. The use of avatars in the 3-D environment provides richness, realism, and heightened levels of co presence/social presence (Majewski 2011).

The capacity of the virtual world medium to transmit information in particular about facial expression and non-verbal cues contribute to the degree of social presence of a communications medium. Differences in how these factors contribute to social presence and the importance of each of these factors are highly individualized. According to Homer, Plass, & Blake (2008), a general finding of the body of research into social presence and learning is that when information is presented in a way that increases social presence, it is better remembered by learners and the

learning process is considered more engaging. Social presence gives a sense to extent to which a communication medium facilitates awareness of another, or the degree to which a person experiences the presence of another person. It is also the degree to which a person is perceived as a 'real person' in a mediated communication (Gunawardena 1995). Biocca and Harms (2002) have made significant advances in developing a more comprehensive theory of social presence. In line with most other definitions, they define social presence as a "sense of being with another in a mediated environment". They continue their definition by stating that "social presence is the moment-to-moment awareness of co-presence of a mediated body and the sense of accessibility of the other being's psychological, emotional, and intentional states" (p.14). Many studies found social presence increases with the provision of graphical product and service information Heerink et al 2008, Steinbruck et al 2002. Kaplan and Haenlein (2010) classify Virtual world environments such as Second life as having high levels of social presence and media richness and social networking sites as having moderate levels of social presence and media richness. Both these social media tools offer a high degree of social interaction, and to varying extents a degree of co-presence and co-location (moderate to high). In this respect, such tools may aid the transfer of tacit knowledge.

Facilitating tacit knowledge sharing among individuals, such as the sharing of experiences, skills, know-how, or know-whom, and also retaining this knowledge in organisational memory has always been of interest to organisations (Taylor, 2007). However, finding the right conditions, incentives, and mechanisms for sharing this unstructured knowledge has long been a major issue of organisations and knowledge management (KM) research (Allen, 2008). Prior research shows that various factors affect the tacit knowledge sharing behaviour of individuals in the forms of enablers, motivators, inhibitors, or facilitators (e.g. Chennamaneni and Teng, 2011; Joia and Lemos, 2010; Li et al., 2010).

Information technology (IT) has been regarded as one of the main enablers of knowledge sharing activities. However, currently there is no consensus on whether IT can facilitate tacit knowledge sharing. Traditionally, IT has been criticised for ignoring one of the main components of KM which is 'people'. It has been argued that traditional IT had been more focused on information management rather than facilitating interaction among the knowledge holders which is necessary for tacit knowledge sharing (Huysman and Wulf, 2005; Marwick, 2001).

As Nonaka (1994) makes clear, although explicit knowledge may be easier to access and transfer (especially through information technology systems), managing both types of knowledge is important to achieving the objectives of knowledge management. Organizations need to be able to transfer the tacit knowledge found in its employees' diverse experiences in order to succeed and this is most often achieved through richer forms of knowledge transfer like interaction between groups and individuals.

The organization that participated in this research did not appear to differentiate specifically between types of knowledge to be managed—most organizations emphasized the broad challenges of knowledge management and did not link particular types of knowledge to particular KM instruments. Nevertheless, the different KM tools deployed by the companies did, implicitly, distinguish different types of knowledge. For example, explicit knowledge was managed primarily through people-to-information mechanisms which relied primarily on IT. Tacit knowledge was managed primarily through people-to-people mechanisms such as communities of practice.

Some of the most interesting and fruitful areas of KM occur at the interface of tacit and explicit knowledge. For example: In order to utilize tacit knowledge more fully, companies have sought to convert tacit knowledge into explicit knowledge. Most companies have instituted project reviews where “lessons learned” are distilled and entered into a database. Most companies have used IT in order to increase the efficiency of person-to-person transfers of tacit knowledge. For example, most of the companies we studied have instituted some form of “expert locator” or “corporate yellow pages” that enables individuals with particular experiential knowledge to be identified and contacted. Most of the knowledge being managed by the companies comprises both tacit and explicit knowledge. For example, one of the most important areas of KM among the oil and gas companies is *best practices transfer*. Best practices tend to be recognized through explicit performance data, but their analysis and transfer requires substantial levels of tacit knowledge both at the level of individual expertise and in organizational routines.

Methodology

The KNOWNET project has adopted multiple methods to collect and analyse the knowledge data generated from the SNS platform and virtual world environment.

To date, the KNOWNET Social networking platform has been running for 9 months and generating copious amounts of conversational thread data, totaling in excess of 200 pages. This reflects a good degree of activity, given that there are currently 99 participants from the Insurance market using this social network. The social network consists of 3 groups, including members from home, Pet and motor insurance. Some 50 plus file uploads exists -examples of case studies, processes described, images, documents (uploads), survey results, regular features (weather, customer service issues).

The range of methods include:

1. Usage statistics: Measure how many hits per day.
 - Reaction and interaction – the members approve or disapprove of the content, by liking, disliking, sharing, etc
 - Participation and influence: member creates new content (comments to threads, reviews, uploading files, images, etc)- site analytics.
 - Directly measurable outcomes. e.g. Setting up a supplier workshop/meeting - costs directly measurable (travel, time away from

desk, subsistence, hotel accommodation etc). These need to demonstrate clear gains- otherwise network may prove unsustainable.

2. Web based surveys, in-depth interviews with users to probe their opinions and experiences of knowledge sharing with the network.

3. Quality of knowledge assets(self report measures) + academic assessment (scheme: rank and categorise)- involve coding the conversations (Nvivo)

Questionnaires designed to include both sender and receiver perspectives

Quantity of knowledge assets (counting the no. of knowledge assets)

4.A knowledge Classification scheme was produced (Type of knowledge)

5. A final stage of the data collection includes follow up surveys on 'learning that has been undertaken', to assess the evolution of the network – how people are using it, changes in posts, knowledge transfer etc.,

The knowledge classification scheme includes

- **1. Me:** the author posted something about him/her self. Including what he/she was doing in work/ self introduction/ expertise
- **2. Conversation seeking/knowledge/info seeking:**

The author posted something seeking a reply, such as asking for comments or opinions on an issue. Questions seeking a specific answer. Messages directed to a specific person(s) were placed in this category.

- **3. Updates and Notifications :** the author posted news, events or URL's to share with others. Includes internal news (workshop at 3.00 tomorrow at ...) and external news (check out the preview on)
- **4. Share Information (or explicit knowledge):** the author posts information on a particular process, survey, results of a survey that have been involved with, case study, report. No expectation of a reply
- **5. Share** insights, past experiences, ideas, stories etc no reply expected.....
- **6. Other.**

If messages fall into more than one category- Have added priority rules to coding schema. 4>5>2>1>3>6.

Using this coding scheme- the messages will be coded independently by at least 2 researchers. We will be using the kappa coefficient to measure the agreement between two raters who are rating the messages. The scheme in effect shows us how and why the SSN members were using the platform- which category is most prolific. SNA will show us who are the most prolific posters, and connectors to other groups and which categories are most used by the poster. SNA will also reveal who is on the periphery of the network

6. Finally, a Virtual World environment was specifically designed and created on the Brunel University virtual world platform, virtual Brunel. Prior to the creation of this area, the RSA KNOWNET social network platform (SNS) for typical comments and areas of interest of the participants. It was found that a lot of the discussions were weather related. Therefore it was determined that the created area should

have the ability to stream real time data from a meteorological source. The United States Geological Survey (USGS) Earthquake feed was chosen, since it is highly stable and the stream can be used to show data in real time.

An IM was sent out on the RSA Yammer platform to ask for participants for a VW platform pilot study. A number of people responded, which resulted in 10 people who were the initial group of volunteers for the first VW pilot study. Parameters for the study included: How easy/hard did the participants find using the VW, did the platform enable knowledge exchange and how immersive did the participants find the experience. In addition the authors were interested in any suggestions or ideas that the participants might have for the use of the VW platform in the context of knowledge exchange in complex supply chains. The initial trials were very successful with none of the participants reporting difficulties in immersing in the virtual world platform. The only difficulties that were experienced were related to the company firewalls. As an insurance company, the RSA have extremely secure firewalls which they were not able to alter for this study. Participants needed to be outside of the firewall to connect to the platform. The participants had extensive conversations regarding the environment and how this might be used in context with their work at the RSA. In addition it was observed that participants engaged in 'water cooler' conversations. These included the weather at their location, chat and references to other employee's and general 'social' conversations. Several people suggested future use for the virtual world platform in context with their role as 'home workers'. This generated considerable dialogue and will be considered in the next stage of the study.

Data analysis on the project is currently underway.

Conclusions

Theoretical implications:

More research on enterprise/supply chain micro blogging and the organisational application of social media is needed especially with regards to knowledge sharing. Many existing studies, are limited by exploring one case. With more organisations adopting the new technology, and with more case studies appearing in the research space, meta studies, which compare findings across cases, become more feasible, which will finally contribute to more generalised findings with regards to the practices, potentials and role of micro blogging in particular, and social media technologies in general. We explore this phenomenon across two countries supply chains

Managerial implications:

The business community has increasingly become interested in micro-blogging. Enterprise collaboration tools such as Yammer, has been adopted by many companies. Enterprises hope that it will empower knowledge exchange and sharing, and enrich interactions among employees. However, because enterprises have limited experience in micro-blogging, people are still making sense of what role it may play in the work environment and how it might affect knowledge

exchange, collaboration and social interaction within an organization. Systematic research is needed in this emerging area.

In RSA, Yammer is still in the early adoption stages of the platform. It is important to examine the evolution of changes that take place in messages, content, knowledge etc over time. The idea is to extend the trail to beyond 12 months to track the evolution of knowledge sharing behavior over time, as well as track the changes if any in knowledge being exchanged.

Understanding what and where the gaps are in knowledge exchange will help us re-design these systems to better fit the new workplace needs. Combining individual usage statistics with survey results will enable us to examine behaviours and perceptions. We can identify users from their posting activities, reading behaviours, perceived value and benefits, and features preferences.

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