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The Role of Virtual Communities of Practice in Knowledge Management Using Web 2.0

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Abstract

Despite the critical importance of Knowledge Management (KM) in helping organizations to improve performance and achieve the desired goals, the reality of the application of KM indicates that there are still plenty of obstacles in the way; most prominent of which are the difficulty of tacit KM, the poor cooperation and sharing in KM, and the difficulty of dealing with KM techniques. This paper aims to determine how to take advantage of the virtual communities of practice that employ Web 2.0 technologies to overcome these obstacles. Employing the descriptive analytical approach methodology based on theoretical analysis of literature, the results revealed that Web 2.0 technologies involve important applications in personal KM, supporting participation in participatory KM, in addition to supporting communication and interaction mechanisms. Moreover, results indicated that Web 2.0 based communities of practice plays major roles in capturing tacit knowledge, facilitating innovation, as well as knowledge sharing and collaboration.

Key Words: Tacit Knowledge, Web 2.0, Virtual Communities of Practice, Knowledge Management.

Introduction

There is a growing recognition of the vital role knowledge plays in shaping the identity of contemporary societies and in determining their destinies in a world characterized merely by quality and competitiveness in light of the knowledge and the scientific revolutions and tremendous techniques. Among other factors, this has led to the emergence of KM as a science and a field of professional practice in contemporary organizations.

There has been a vast array of modern trends in KM, such as increased dependence on information and communication technologies (Kidwell, Linde & Johnson, 2000: 28) which facilitated the processes of knowledge acquisition, representation, exchange, and sharing (Nath, 2012). Amongst the most recent of these techniques was the second generation of the Web, such as social networking, that opened the way for promising trends in KM. The results of Razmerita, Kirchner and Sudzina's (2009) study, for example, revealed that Web 2.0 tools have facilitated the development of a new paradigm for the management of personal knowledge, which includes official and informal contacts, cooperation, and social networking tools. In addition, Levy (2009) found that Web 2.0 tools are closely related to the key principles of KM, and that these tools have considerable potential for improving KM processes in organizations.

On the other hand, communities of practice are among the leading KM practices in organizations that emphasize the social

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aspects included in the processes of creating, sharing, and application of the knowledge. The value of these communities grows, according to Chindgren-Wagner, (2009), when knowledge is applied for achieving specific purposes such as; the improvement and development of organizational performance. With the emergence of Web 2.0, many techniques that allowed considerable potential for developing communities of practice roles in KM processes have become available, which has, in turn, led to the emergence of "virtual communities of practice" concept (Vinson, 2013). The study of Kimble and Hildreth (2005) has highlighted the critical role that virtual communities of practice have played in KM initiatives. Social relations, using file-sharing services, as well as the various tasks achieved through electronic tools have played the major roles in KM.

In accordance with the modern trends in KM, the present paper aims to address the role that could be played by Web 2.0 based virtual communities of practice in KM of organizations.

Statement of the problem

Despite the importance of KM in supporting organizations' ability to achieve their aims and to increase their competitiveness, a vast body of literature as well as contemporary studies suggest that there are many obstacles that hinder the effective application of KM (see Al-Zaidi, 2011; Al-Otaibi, 2011; AL-Hussain, 2012; Nath, 2012). Among these obstacles are: the difficulty of managing tacit knowledge, the lack of experience in dealing with KM techniques, the lack of novelty of information and knowledge, and the absence of cooperation as well as collaboration in KM. These impediments highlight the urgent need to take advantage of contemporary developments in ICT; especially web 2.0 based virtual communities of practice.

In light of the above, this paper deals with the challenges associated with traditional approaches for KM, and the need to study the role that can be played by Web 2.0 tools based-virtual communities of practice in dealing with these challenges. This issue can be formulated in the form of the following main question:
What is the role of Web 2.0 tools based virtual communities of practice in KM?

This question can be answered by means of answering the following sub-questions:
1. What is the nature KM and what are the obstacles to its application?
2. What is the role of Web 2.0 tools in the KM processes?
3. How can Web 2.0 tools based virtual communities of practice help overcome the obstacles to KM?

Methodology

The present paper has employed the descriptive analytical approach. This method allow for the describing and analysis of the use of Web 2.0 tools based virtual communities of practice in KM. Theoretical analytical description is necessary in this case, based on KM and Web 2.0 relevant literature. So most related literature were studied and the main key related facts were extracted to suit the purpose of the paper and inform the recommendations in the conclusion.

Results

1- The nature KM and its obstacles

KM can be defined as "a set of processes that involve knowledge planning, production, generation, organization, dissemination and sharing, in addition to using it for the purposes of improving performance quality of the staff of the organization, as well as the performance of the organization as a whole. These processes are largely dependent on modern information and communication technologies; most notably Web 2.0 and virtual communities of practice tools. So KM involves various set of processes: (1) knowledge creation, (2) knowledge organization, (3) knowledge storage, (4) knowledge dissemination, and (6) knowledge application (Ramachandran, Chong & Hishamuddin 2009). The application of KM processes is faced with several constraints and challenges that have been subject to research and study. For instance, in

a recent study that has employed Delphi approach, AL-Hussain (2012) determined the major constraints against KM application in the Kingdom of Saudi Arabia in four key areas (organizational, technical, leadership and learning obstacles) as follows:

1. Organizational obstacles to KM: most notably the absence of regulatory training and the culture of knowledge sharing, the lack of effective organizational communication, and the poor confidence across the organization.
2. Technical obstacles to KM: most notably the lack of communication tools for KM, out of date information, and the absence of qualified staff in dealing with technology.
3. Leadership obstacles to KM: most notably the weakness of cooperation between leaders, the absence of utilizing application mechanisms of KM, and the poor experience in the field.
4. Obstacles related to learning: most notably the absence of knowledge sharing, the lack of specialists in KM, the lack of the culture of creative learning that generates knowledge, and the absence of training.

In light of other previous studies (Al-Wethenany, 2007; Al-Zaidi, 2011; Tashkandi, 2011; Al-Qathami, 2011; Al-Otaibi, 2011; Nath, 2012), the main challenges of traditional systems of KM, that are relevant to Web 2.0 tools and communities of practice, can be outlined in the following elements:

- Traditional KM systems emphasis is limited to dealing with explicit knowledge, with clear deficiency in dealing with tacit knowledge, which is of great importance to improve performance in organizations.
- Lack of cooperation between the working staff in KM, and the inability to share knowledge effectively.
- Unavailability of new information and knowledge, and the inability to constantly update knowledge.
- Lack of working staff's ability to use KM technologies.
- Poor information and communication technologies infrastructure used in KM.
- Traditional approaches to KM do not help the use of knowledge (especially tacit knowledge) to facilitate access to innovative solutions to problems.

2- Web tools 2.00 and its role in KM

Recently, unlike in the early days, when users request information or just wander into it, the Web push information to them automatically. The term used for this is "new Internet" or "Web 2.0". Web 2.0 is not a "new" Internet per se, but the term itself is intended to indicate a change in the way people use the Web, just like a version change in a software program indicates that a new release of the software is better than older one. The term was coined during a session between Media Live International and O'Reilly Media. During this session, Web technology characterisation was attempted to encompass the changes happening all the time in the internet. Also the session focussed on how these changes affected the way people used and accessed the Web. One of Web 2.0's main features is that it creates users who are actively participating in writing viewed contents. Because of this feature sometimes the term "user generated content" is used. In using the feature, Web 2.0 users are also given new and easy ways to create the generated information. Web 2.0 includes online social networks, mashups, photo- and video-sharing sites, blogs, microblogs, feeds, and podcasts. Web 2.0 tools as those mentioned, give users the ability to distribute gathered information from communities to other people around the globe. These can then take the information and work on it to improve, enhance, and then maybe forward it to new users and so on. Web 2.0 tools vary, but they are all relying on the communities interactions and generated information. They also includes a wide range of technologies that are characterized by several unique characteristics and advantages for KM; most prominent of which are: Wiki, Social Networks, RSS, Media Sharing, Podcasting, and Blogs (J Evans, 2013).

By analyzing literature that linked the characteristics of Web 2.0 tools and KM (Baroutis & Saleh, 2009; Levy, 2009; Razmerita, et. al, 2009; Titi, 2010; Garcia, Annansingh & Elbeltagi, 2011; Matschke, Moskaliuk & Cress, 2012; Nath, 2012), the characteristics of Web 2.0 can be outlined in the following points: (1) the active role of the user in building content, (2) facilitating posting multiple types of knowledge, (3) building on the collective intelligence theory, (4) the ease of use, (5) providing opportunities for personal dissemination and participatory authoring, (6) continuous updating of knowledge, (7) the ability to nominate information, and (8) cooperative classification of information.

Based on these characteristics, there are a number of Web 2.0 technologies applications in KM including; personal KM via tools such as blogs (Klamma, Chatti, Duval, Hummel, et al., 2007); supporting the creation and participation in KM by means of tools such as Wiki; and supporting the mechanisms for communication and interaction via tools such as social bookmarks, which index and classify sites on the Internet (Klamma, et. al, 2007).

3-The role of Web 2.0 based virtual communities of practice in KM

Virtual communities of practice can be defined as: "Groups of professionals brought together by shared goals and common concerns regarding participation, exchange, trading, organizing and management of their tacit and explicit knowledge in order to improve their professional performance, as well as the performance of their organizations as a whole. These communities are characterized by self-regulation. They rely on virtual space on the Internet, using social Web 2.0 tools, such as: social networks. Of the most prominent applications of virtual communities of practice is overcoming some of the most important challenges facing the traditional KM systems, as follows:

a. Capturing Tacit Knowledge

Traditional KM tools help capture explicit knowledge of an expert or a sole source of experience. Web 2.00 tools go further to enable participants in virtual communities of professional practice to share tacit knowledge, or that is being most applicable or of newsworthy nature (Richards, 2009).

One of the well-known methods for the management of tacit knowledge is the dialogue and interaction among individuals serving in the organization. In this respect, it is observed that virtual communities of practice that employ Web 2.0 would facilitate dialogue through social interactions. By means of Wiki, for instance, many individuals with different areas of expertise can socially interact and work together to achieve a common goal. Therefore, it can be said that the use of the Web 2.0 tools in the context of virtual communities of practice would resolve one of the biggest challenges of KM; that is to deal with the tacit knowledge (Wegner, 2006; Nath, 2012).

b. Knowledge sharing & collaboration

The need for cooperation among the staff and knowledge sharing is considered one of the most prominent challenges to the application of KM in organizations. The worth observing in this respect is that knowledge sharing is not just a physical transfer of knowledge as something that can be moved from one place to another, but that requires the sharing of social interaction during the exchange of knowledge.

Traditional approaches to KM, on the one hand, do not help achieve the desired level of cooperation and sharing of diverse knowledge, expertise, and ideas (Kang, Morris & Snell, 2008). Web 2.0 tools based virtual communities of practice, on the other hand, help in facilitating sharing various forms and media of information and knowledge, as in the media sharing services. These communities also offer exceptional opportunities for cooperation in KM; thanks to tools such as Wiki.

c. Facilitating Innovation

Effective management of knowledge requires the development of innovation and modernization by encouraging the development of tacit knowledge to solve problems faced by staff as well as the organization. Thus, KM requires not only knowledge sharing, but also the use of knowledge for innovation through collaborative thinking.

In this respect, traditional approaches to KM do not help the utilization of knowledge, especially tacit knowledge, to facilitate access to innovative solutions to problems (Nath, 2012). Web 2.0 tools based virtual communities of practice, on the contrary, take advantage of the collective intelligence and assembly knowledge principles; upon which Web 2.0

tools depend in the provision of innovative solutions to the problems faced by the organization, and facilitate, at the same time, the task of creating much of the applied knowledge that can benefit the organization.

Conclusion and Recommendations

Web 2.0 help resolving many issues related to KM. the following illustrate some of these issues and identify how they can be resolved:

1. Strategic planners in government organizations in Saudi Arabia, as well as knowledge managers can take advantage of virtual communities of Web 2.0 based virtual communities of practice in KM.
2. There is a need to train managers to employ Web 2.0 tools in KM, and to facilitate and take advantage of virtual communities of practice for the staff in the organization.
3. It is important to encourage staff in the governmental organizations of the Kingdom to build virtual communities of practice to exchange and share professional knowledge.
4. Inclusion of Web 2.0 applications, and virtual communities of practice is needed and KM topics should be introduced in university education, as well as in in-service training programs provided to administrative cadres in the Kingdom.

Future Work

Studying the Saudi Arabian organisational structures might help inform this research as KM depends strongly in it. So it will be worth in the future to study these structure in detail and analyse these while having Web 2.0 tools and KM in mind. Also qualitative and quantitative analysis to real life cases will be of substantial benefit to approve and confirm the recommendations above.

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