Computers in Human Behavior 30 (2014) 637–647

Contents lists available at ScienceDirect

Computers in Human Behavior

journal homepage: www.elsevier.com/locate/comphumbeh

Global social knowledge management – Understanding barriers for global workers utilizing social software

Henri Pirkkalainen *, Jan M. Pawlowski [1]

Mattilanniemi 2, Agora Building, FI-40014 Jyväskylä, Finland

ARTICLE INFO

Article history:
Available online 20 August 2013

Keywords:
Barriers
Knowledge management
Knowledge sharing
Social software
Global collaboration

ABSTRACT

Utilizing social software as a part of a global knowledge management strategy has raised increasing interest in enterprises as well as in the educational domain. Rather than being proactive, organizations tend to face barriers related to knowledge management after the problems occur. When dealing with social technologies in a distributed setting, organizations and individuals face a variety of barriers currently unrecognized in knowledge management literature. Within the study, we analyze knowledge management literature extending the body of knowledge with barrier analysis regarding global challenges as well as social software. Our focus is especially on knowledge exchange and globally distributed collaboration activities in organizations. We argue for contextualized understanding of the barriers, recognizing the challenges studied in similar activities. The paper concludes with a synthesis of these interrelated components, proposing a Global Social Knowledge Management-barrier framework that demonstrates the wide spectrum of possible challenges in globally distributed, social software supported knowledge management activities.

1. Introduction

Managing knowledge in a global context is a complex process in virtual teams as in distributed collaboration in general. Especially in virtual teams that may not have opportunities for face-to-face collaboration, problems may rise from differing and unusual modes of interaction (Sivunen & Valo, 2006), language and cultural differences (Noll, Beecham, & Richardson, 2010), because of the geographical distance (Pallot, Martínez-Carreras, & Prinz, 2010) and so forth. From the technical point of view, collaborators have to deal with systems they might not be accustomed with or feel unease to apply. Social software is seen as a potential solution for supporting knowledge management across global settings, which seems to be established as a new research focus, or even a trend. The possibilities rise from the opportunities to utilize social software for various business operations and collaborative tasks (Kaerkkaeinen & Jussila, 2010; Zhang, 2010) and to knowledge management activities ranging from knowledge retrieval to sharing (Zheng, Li, & Zheng, 2010). Social software can be seen as a set of technologies to support user communication, group building, cohesion, networking and so on (Wever, Mechant, Veevaete, & Hauttekeete, 2007). It even has been seen as a prominent solution and a cure for many challenges caused by the lack of physical collocation given that the organization is committed to the adoption and allocates support accordingly (Kaerkkaeinen & Jussila, 2010; Noll et al., 2010). As discussed by von Krogh (2012), social software might enable faster local decisions and improve efficiency when applied to organizational social practice. Still, researchers across disciplines have indicated lack of organizational adoption of social software for collaboration, because of barriers.

Previous literature has indicated barriers relating to usage and adoption of specific technologies such as social software in an organizational context. Such could be "lack of understanding for the possibilities of the tool" when the potential of social software is not fully harnessed, i.e. collaboration mechanisms provided by the tool are not taken up in practice or the stakeholders that could be reached through the tool are not involved (Kaerkkaeinen & Jussila, 2010). Widely discussed threat is related to privacy of social software. Different types of social software services store a variety of information about the users in the user profiles but also on the actions the users take in the systems (Campisi, Maiorana, & Neri, 2009). The user actions and discussions held in the system may encompass confidential data that can easily leak to unwanted hands of web attackers (Yang, Lutes, Li, Luo, & Liu, 2012). As social software such as social networking sites might differ drastically from services like blogs, differing perceptions of users and unequal adoption of the technologies is likely to occur when the software is adopted by organizations (Onyechi & Abeysinghe, 2009). However, the existing literature does not elaborate on the variety of

* Corresponding author. Tel.: +358 40 0247684.
E-mail addresses: henri.j.pirkkalainen@jyu.fi (H. Pirkkalainen), jan.m.pawlowski@jyu.fi (J.M. Pawlowski).
[1] Tel.: +358 50 4432389.

0747-5632/$ - see front matter © 2013 Elsevier Ltd. All rights reserved.
http://dx.doi.org/10.1016/j.chb.2013.07.041

challenges that also relate to those circumstances and the implications such barriers might have. A variety of those versatile challenges are related to managing knowledge in enterprises. The inclusion of social software tightly connects to (distributed) collaboration practices that can be asynchronous or synchronous and take place closed for the organizational units or crossing the intra-organizational boundaries towards external stakeholders and communities. Barriers related to distributed collaboration are versatile in nature focusing on aspects such as geographical distance, lack of trust, differing languages and cultures and so on (Noll et al., 2010). It is crucial to study the interdisciplinary research to understand the challenges in global, social software supported knowledge management initiatives.

Our study gives a holistic state of the art literature review of barriers for global Knowledge Management, focusing on information exchange activities and processes that are accomplished or aided by using social software in an international context. We focus on barrier-related literature for distributed teams and heterogeneous organization types, emphasizing the research disciplines of global knowledge management (including global collaboration/team work practices) and social software. The leading research question for the study is: "What type of barriers global knowledge workers face when collaborating and interacting through social software?" As a result, a better understanding of the barriers, their context-dependency and their relation to one another is achieved.

The paper is structured as following: In the second section, we describe the key components of our study and present the methodology to capture the barriers. The third section describes how barriers have been addressed in different research disciplines and finalizes the analysis by the construction of a barrier framework (Global Social Knowledge Management) for global workers utilizing social software. The paper concludes with a summary of results, clarifying the contributions to theory and practice.

2. Theoretical foundation and methodology

Within this section, we lay the theoretical foundation for the study. Following the Global Social Knowledge Management research (GSKM) approach (Pirkkalainen & Pawlowski, 2013), we merge the research fields of *Global Knowledge Management (GKM)*, and *Social Software* to understand the barriers of utilizing social software in globally distributed knowledge management efforts. As to be discussed within this paper, *barriers* have been addressed from many perspectives in the literature related to globally distributed collaboration. For the purpose of this paper we will focus on GSKM challenges according to the barrier-definition of Pirkkalainen and Pawlowski (2013): "A barrier is any challenge, risk, difficulty, obstacle, restriction or hindrance that might prevent a single person, a group or an organization to reach an objective and success in a specific context when the challenge is related to acting or working in a collaborative cross border setting".

Through the *GKM* component we observe the organizational as well as individual challenges arising in collaborative distributed settings. These include situations where knowledge is being created, shared and adopted by groups of people. We observe literature and barriers that have been studied especially in knowledge management. We extend the focus to virtual teams and (geographically and temporally) distributed collaboration to lay a foundation for recognizing the barriers for GKM.

Social software can be applied to manage knowledge and collaboration from multiple perspectives. Within the study, we analyze social software from the knowledge exchange perspective but also as a tool for engaging with external audiences. As evidenced by Richter (2013), social software use in organizations often passes the organizational boundaries to reach stakeholders and networks of experts for innovation potential, increased visibility and future viability of the organization. Even as the term social software is frequently used, there is still no commonly agreed definition. One way of defining social software is that it enables interactive collaboration, managing content and networking with others. It supports the desire of users to be pulled into groups in order to achieve their personal goals (Wever et al., 2007). We acknowledge the obvious overlaps to other terminology such as Web 2.0, Social Media and Collaboration tools that are in many cases used to explain the same phenomenon and technologies. Within this analysis, we have focused on the following types of software: social networking services, wikis and collaborative writing, blogging and microblogging, social bookmarking and media sharing. As a key component for our study, we strive to understand its influence on knowledge management in global settings.

2.1. Method

Our analysis focuses on the following objective: To perform a systematic literature review on the barriers for global knowledge workers. The goal of the analysis was to answer the following research questions:

1. What type of barriers global knowledge workers face when collaborating and interacting through Social Software?
2. How are the GSKM barriers reflected in different research disciplines?

The literature review for the barriers was accomplished using the systematic approach by Fink (2005) as method to describe available knowledge for professional practice. The rigorous approach should be *systematic* with clear methodology, *explicit* in the procedures, *comprehensive* in the analysis and *reproducible* by others (Fink, 2005). The literature review followed the steps defined by Kitchenham (2004) for conducting a rigorous analysis. The steps include: (1) Identify need and define the method, (2) create research question(s), (3) conduct the search for relevant literature, (4) assess the quality and appropriateness of the studies, (5) extract data from the studies, (6) conduct data synthesis and finally (7) interpret the results and write a report.

During the literature analysis process we expanded social software related searches to social media, web 2.0, collaboration tools and specific tool categories mentioned previously. This allowed us to have a better overall scope of the barriers as the terms are often used to express the same phenomenon. For all of the key literature, the main entry points were IEEE Xplore bibliographic database, ACM Digital Library as well as SciVerse Sciencedirect. Additionally, top journals based on Association of Information Systems (AIS) rankings were included depending on the discipline and focus. As our analysis is a cross-disciplinary effort, it was crucial that in the quality/appropriateness assessment phase (Kitchenham, 2004) every included publication was analyzed in terms of the study aims and the domain of interest in search for the barriers. This is seen necessary as past research has pointed out the essence of contextual influence for describing the importance and relevance of barriers (Gao, Dai, Fan, & Kang, 2010; Kaerkkaeinen & Jussila, 2010). For global knowledge management and related literature on globally distributed collaboration, 135 papers were included in the final analysis for the barriers. For social software related literature, 83 articles were included.

The synthesis part of the literature review takes a constructive approach (Crnkovic, 2010). Constructive research is suitable for construction of a solution (artefact or a theory) that is based on existing knowledge (Crnkovic, 2010). In our case the approach is to build on existing knowledge on barriers and to construct an