Social Software Support for Collaborative Innovation Development within Organizations

Michael Reinhardt, University of Erlangen-Nuremberg, Germany
Martin Wiener, University of Erlangen-Nuremberg, Germany
Marc René Frieß, Technische Universität München, Germany
Georg Groh, Technische Universität München, Germany
Michael Amberg, University of Erlangen-Nuremberg, Germany

ABSTRACT
Applying a design science approach, the authors developed and tested a social network-based open innovation platform prototype that supports two major aspects of an organization’s ability to drive ideas into innovation concepts. First, the system implements a structured and transparent process logic that enables knowledge aggregation through content sharing and information integration as well as individual workflows of single actors. Second, the platform shapes a collaborative, time- and space-independent common context, which enables employees to build and run an open innovation community. Based on a prototype, the authors also evaluated the platform’s usability as well as its usefulness for collaborative development of innovative concepts.

Keywords: Innovation Process, Open Innovation, Prototype, Social Software, System Requirements

TOWARDS IT-SUPPORTED INNOVATION INTERACTION
Within companies, organizational units still often resemble single “islands” with regard to information and knowledge sharing. This is also true for many companies’ innovation management activities: their units and employees are only integrated into the innovation process at fixed points. From an employee perspective, innovation management is often limited to idea submission by means of a physical or virtual mailbox. If accepted, an idea is typically handed over to the internal R&D department (Chandler, 1990) and then processed without further interaction with the idea initiator and other potential contributors (Bansemir & Neyer, 2009). Here,
research and practice have produced a sound body of knowledge and a considerable number of IT systems for this traditional innovation management (e.g., Ardilio et al., 2004).

However, recent research on innovation capability highlights the importance of an organizational unit’s access to external knowledge as well as its internal learning capacity, as ideas and knowledge are stimulated through social interaction (Tsai, 2001). Therefore, next generation innovation management systems should take into account the stimulation of an interactive and efficient innovation development (Bartel, Ichniowski, & Shaw, 2007). In this context, easy to use and cooperation-oriented Web 2.0 concepts and applications – like social networks, wikis, and blogs (O’Reilly, 2005; Ma, & Agarwal, 2007) – seem to be promising for fostering collective innovation within an organization, what we call corporate open innovation.

Even though open innovation usually refers to the inclusion of externals (Chesbrough, 2003), we believe that the open innovation paradigm can also be transferred to a corporate setting. Therefore, our definition of open innovation includes all innovation activities that are performed outside of a dedicated R&D organization or organizational unit respectively. In this context, we can observe a growing number of practice-driven web platforms for open innovation across organizations. However, none of these platforms explicitly addresses the unique challenges of corporate open innovation.

This article aims at harnessing the potential of collaboration-oriented, interactive social software by designing and implementing an IT solution adequate for supporting corporate open innovation. It addresses the following research questions: “What are the specific requirements for corporate open innovation?” and “How can these requirements be supported by a social software based IT system?” To examine these research questions, we employ a design science approach using an exploratory case study, practice-linked prototyping, and a field study for designing and evaluating a system prototype. The article is structured as follows: the next section positions our research in the context of prior literature. We then describe our research methodology. Finally, we present our results and conclude by discussing the paper’s findings and implications.

THEORETICAL BACKGROUND

Innovation Process

In prior literature, there exists a multitude of different process models for innovation management (e.g., Hughes & Chafin, 1996; Vahs & Burmester, 1999). The organization’s industry and culture is expected to have a significant impact on any applied process model. However, prior research does not suggest a specific process model for corporate open innovation in regard to phases and their sequence. Here, we assume that potential differences are located within single process phases, i.e., in specific actions taken. As a consequence, we based the development of IT for open innovation support described in this article upon a generic five-phase innovation management process in the style of Tidd and Bessant (2009), as shown in Figure 1. In our search for IT requirements and prototypical system support for corporate open innovation, we focused explicitly on the early stages of this innovation management process; more precisely the search, the refinement, and the selection of innovative ideas (see grey highlighted phases in Figure 1). This is because of the particular criticality of these early phases for discontinuous innovations (Khurana & Rosenthal, 1997; Rice, O’Connor, Peters, & Morone, 1998). In contrast, we exclude the implementation phase, due to its traditional project management character, and the capturing phase, due to its retrospective point of view (Tidd & Bessant, 2009). These two phases incorporate a different set of actions, methods and stakeholders, and therefore require separate research study.

The initial search phase deals with the identification of existing problems and the generation of basic ideas that might grow into innovations (Tidd & Bessant, 2009). In the
Related Content

The Systems View of Information Systems from Professor Steven Alter
www.igi-global.com/article/systems-view-information-systems-professor/2541?camid=4v1a

Modeling Uncertainty with Interval Valued Fuzzy Numbers: Case Study in Risk Assessment
www.igi-global.com/article/modeling-uncertainty-with-interval-valued-fuzzy-numbers/204600?camid=4v1a
Intellectual Capital
[www.igi-global.com/chapter/intellectual-capital/48994?camid=4v1a](www.igi-global.com/chapter/intellectual-capital/48994?camid=4v1a)

Knowledge Power
[www.igi-global.com/chapter/knowledge-power/83667?camid=4v1a](www.igi-global.com/chapter/knowledge-power/83667?camid=4v1a)