

Social Software for Professional Learning: Examples and Research Issues

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Abstract

Social software is used widely in organizational knowledge management and professional learning. The PROLEARN network of excellence appreciates the trend of lowering the barriers between knowledge and learning management strategies for organizations and individuals. But, companies should not underestimate the needs for systematic support based on sound theories and technologies. We illustrate the requirements by examples and research issues for collaborative adaptive learning platforms for workplace learning in organizations.

1. Introduction

Social software can be defined as software that supports activities in digital social networks. Because of the close relationship between knowledge management and professional learning [3], we want to investigate the use of social software in the context of the workplace supporting learning. Our approach is the systematic integration of social software in new collaborative adaptive learning platforms (CALP). In this paper, members of the PROLEARN Network (www.prolearn-project.org) discuss different past and ongoing projects within this area and explore research issues for social software which has become a new work package in 2006. The remainder of the paper is organized as follows. In Section 2 we draw on the current use of social software in organisation. Section 3 gives examples from current research and creates a list of research issues. We conclude and give an outlook on further activities.

2. “Blogging for Business”

Because social software was not intended specifically for professional learning, many challenges are raised by the ready acceptance of these technologies. The perceived usefulness and the

perceived ease of use of social software, e.g. tagging learning resources, contrasts with the need for efficient data structures, algorithms and interoperable infrastructures to store, maintain, and deploy learning objects on the web. We discuss blogs here as an example for a class of software used now often in organizations, e.g. corporate wikis, social bookmarks, RSS web feeds [8]. One drawback of a blog is a lack of continuing input. The most popular blogs are those that receive regular updates. Their sequential nature also means that old postings are almost never revised or updated, but commented, perma-linked, and track-backed [2]. Successful corporate blogging programs have tended to focus on a very simple business aim. The most visible are those with a simple ‘public relations’ function. In the UK for example **Cadbury Schweppes** have tasked a set of “graduate recruits” in its key business areas to help get a better idea of what it’s like to work for the company. In Germany, **SAP** has tasked some key executives to maintain a set of public blogged conversations to help frame a public view to their clients and partners. This level of ‘senior staff’ presenting the face of the company is a relatively common use for blogging in organizations [1]. Breaking up the barriers between personal and professional networks has a potential added value in store for the workplace organization. Social capital theory [6] supports the idea that the weak ties are important for the exchange of knowledge. One of the major features of blog is the “reputation management” of participants. Indeed, we have recently seen the emergence of so called “Ghost Blogging” services for companies who want more professional marketing and support of their blogging output. Blogs can show participants’ daily engagement with key issues. Participants can gain significant reputation in their community by “being seen” publicly creating valuable artifacts that is of use to new members of their group. The individual satisfaction and perception of effectiveness in that sense is closely related to the commitment of the individual to contribute and actively participate. Social exchange literature [5]

describes four main incentive mechanisms that are relevant to motivate and encourage community members to commit and contribute to common activities, those are **personal access**, **personal reputation**, **social altruism**, and **tangible rewards** [7].

Currently an integrated approach that allows rewarding and incentive mechanisms on different levels of sharing and exchanges is researched in the **TENCompetence** project (see www.tencompetence.org/). A main critical point in building social software that is actually used and in developing communities that become active learning networks [15] is the engagement in the sense of active participation and contribution of the individuals. In the **WINDS** [9] project university professors and their colleagues have created 21 online courses in Architecture and Engineering Design (see <http://winds.fit.fraunhofer.de/>). The WINDS experience shows that teachers, even without programming skills, can create web-based adaptive courses and students can benefit from the usage of these courses. **Open Classroom** [10] is a software platform that enables real time collaboration and authentic real world learning experiences, e.g. school classes visiting a chemistry lab without leaving the classroom or meeting friends and business partners from all over the world (see <http://oc.fit.fraunhofer.de/>).

Social software techniques enable richer capturing of context in which content has been produced. Finer granular and explicit capturing of this kind of context offers substantial potential for automating metadata production. We are integrating this sort of social software in our **Automated Metadata Generation** framework [4]. Similarly, social-software-based context capturing offers great potential to create advanced tools and services for dealing with the need for content. A rather simple example is to augment user queries with metadata that constrain results to those that are relevant to the context at hand. A more advanced example is to alert users to relevant content by automatic attention tracking, even before they are aware that it may help them in the task at hand. **Confolio** (see www.confolio.org/) is a semantic web-based electronic portfolio system [13]. The Confolio system also contains a distributed opinion publication network, where each portfolio owner can publish opinions on anything that has a publicly retrievable URI which of course is anything on the Semantic Web. Although such opinions are directly visible on their “annotation target”, they are in fact controlled by the annotator and stored in her/his own Confolio. This has powerful implications on learning, as well as on social software in general, since it makes easily visible what

people actually think of the resources on the web – creating what in evolutionary terms could be called a selection pressure for the enhancement of quality.

Two major critical success factors for professional learning social software are high **usability** and good **sociability**, with each of them comprising a set of criteria and measures [12]. Whereas usability is concerned with how users interact with technology, sociability is concerned with how members of a community interact with each other through the enabling technology [14]. Four key quality attributes and their sub-attributes for social software are identified: **Usability**, **Functionality**, **Interactivity**, and **Naturalness**. There exist no standard ways to measure the above attributes, making benchmarking studies especially difficult. Evaluation of social software is demanding, given the high variability in users, tasks and contexts. We deploy cross-media social network tools within the framework of Actor-Network Theory [11] for monitoring and self-monitoring purposes of the affected communities.

3. Collaborative Adaptive Learning Platforms

These approaches lead to new **collaborative and adaptive learning platforms (CALP)** which neatly integrate elements from social software use with the need for business oriented learning management systems for professional learning. The primary goal of CALP is to connect people to people and people to the right knowledge object. CALP encompasses these elements:

- (a) Support for personal professional knowledge management using personal blogs to help people organizing and exchanging their personal knowledge and the knowledge they have acquired.
- (b) Support for co-operative learning object creation using group blogs and wikis as collaborative and effective knowledge capture systems that support learning communities in designing, creating, reviewing, commenting, modifying, and posting learning objects as support for real time collaboration and authentic learning experiences.
- (d) Support for LOM-compliant automatic metadata generation to enable indexing, storage, search, and retrieval of appropriate learning objects and learning paths relevant for a specific learner or a group of similar learners.
- (e) Support for distributed opinion publication networks and other Semantic Web technologies.
- (f) Support for access and search across content, metadata, web feeds. A learner should be able to query remote learning object repositories or blog-based

distributed learning communities to quickly locate appropriate learning resources.

(f) Support for personalized learning object delivery through an intelligent adaptive engine, being able to connect people to the right knowledge and deliver quality learning resources that are tailored to the learner's preferences and learning goals.

(g) Support for personal social networks to facilitate bottom-up socialization, that is, help people build new relationships and enable them to join learning communities based on their preferences.

(h) Support for personalized expert/community retrieval. The idea is to connect people to people through content. By searching blog-based distributed communities via metadata and web feeds and assessing the blogger's digital reputation, it is possible to identify experts inside or outside the organization with the required know-how that can help achieving better results or persons who share the same interests.

(i) Support for evaluation by quantifying and qualifying user experiences by joining HCI, social capital theory, social exchange theory and Actor-Network Theory.

4. Conclusions and Outlook

The PROLEARN network of excellence has recognised the obvious trend of social software use in professional learning. We have tried to illustrate the motivation for the trend and to give some theoretical background. From our experiences in previous and ongoing projects we are motivated to identify some systematic solutions for professional learning at the workplace. We sketched some key requirements for collaborative adaptive learning platforms. Evaluating such platforms by providing companies and people with tools for self-monitoring their behaviour in social networks is a great challenge. In the PROLEARN network, the work package "social software" has dedicated to tackling this issue. We will organise a series of events around the topic of social software for professional learners, aiming to bring together social software researchers and practitioners in an open space for in-depth conversations about their work, possible trends, and visions. The topics covered include business perspectives such as the potential of software tools for knowledge sharing and professional learning.

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