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Adopting Enterprise 2.0: A Case Study on Microblogging

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Abstract

Microblogging is currently one of the most discussed topics on the World Wide Web. The success of services like Twitter raises questions about their potential for organisations. In this case study we provide insights from an early adopter who implemented his own microblogging system. We aim to explain what use cases in professional contexts can look like and, primarily, to suggest a more precise description of what enterprise microblogging is.

1 Introduction

"What are you doing?" is the new catchword of the digital society. The so-called microblogging service Twitter[1] is gaining increasing popularity. It can be considered mainstream in the US following the significance of its role in the country's election campaigns in 2008. While the tool from a software engineering point of view is very simple, the way it enables interaction between its members seems to hit the nail on the head, fulfilling their requirements.

For decades researchers and practitioners in fields such as Knowledge Management were active in creating systems for the allocation or externalisation of people's knowledge. However, the critical element of such systems seemed to be participation. Participation is one of the central characteristics of the so-called Web 2.0 (O'Reilly 2005). As recent research shows, Internet users contribute their knowledge to Web 2.0 tools such as wikis, weblogs and social networking services without any direct incentives and due only to their genuine motivation. As an example, a study of Wikipedia shows that factors such as the perceived autonomy (in use), the significance of their task (to other users), the proliferation of requirements and the feedback from other users motivate the contributors (Schroer & Hertel 2009). For this reason there are efforts towards the implementation of such tools in the corporate context. The adoption of Web 2.0 approaches to the business environment offers powerful op-

[1] http://www.twitter.com

portunities to distribute "tacit knowledge" and "best practices" companywide. For in-company operation, these tools are adjusted to the company's context and additionally enriched by experiences with existing intra-company tools (Back et al. 2008; Koch & Richter 2008, McAffee 2006).

This development includes the deployment of microblogging in the business environment. But, whereas the approach of enterprise microblogging seems really promising, not much research has been done in this field, since this phenomenon is quite new.

Thus, this paper wants to explain what use cases in professional contexts can look like and, primarily, to suggest a more accurate definition of enterprise microblogging. We proceed as follows: The next section presents an introduction to microblogging and summarises existing research. In the third section we describe the research method used. We present our findings in section four, in the form of a case study. Finally, a discussion and a conclusion wrap up the paper.

2 Microblogging

In November 2008 the social networking service Facebook offered $500m in shares for the best-known microblogging tool Twitter. This is a remarkable amount for a service with estimated 6million users worldwide, whilst in the middle of a recession (Kazeniac 2009). It seems that Facebook, for years the star in the World Wide Web, sees rising importance in the subject and has high expectations for its role in the future web. But why would that be the case?

Microblogs can be described as a smaller version of weblogs enriched with features for social networking and with a strong focus on mobility. Users have their own public microblog where they can post short updates. Other members can be "followed" by adding them to the personal network. As with weblogs, the messages appear in chronological order on the user's start page. Microblogging services often support a wide range of contribution possibilities. For example messages to Twitter can be posted via mobile text messages, desktop clients or several third party applications, such as Tweetdeck[2].

A special characteristic of microblogging is its ability to heighten awareness. Dourish and Bellotti (1992, 107) define awareness as "an understanding of the activities of others, which provides a context for your own activity" and stress the importance of awareness when coordinating group activities in different task domains.

Gutwin et al. (1996) distinguish four basic types of awareness information. In the following we give short examples of how twittering can help to build this kind of awareness:

- Informal Awareness (e.g. information on actions or intentions of others): "Now in a meeting with Andrea concerning our new project".

[2] http://www.tweetdeck.com

- Social Awareness (e.g. information about the emotional state of others, which is typically perceived in a social or conversational context): “Really interested in meeting Franz”.
- Group-structural Awareness (e.g. information about the group and its members, their roles and responsibilities): “Peter will join our team and coordinate meetings”.
- Workspace Awareness (e.g. information about the interaction of other users with the shared workspace and contained artefacts): “Now working on the new project presentation”.

These examples show how microblogging can help create awareness in a company to support collaboration, communication and coordination.

As microblogging is a very new phenomenon there has been little academic research on the topic to date. Most work focuses on the description and explanation of Twitter (Barnes & Böhringer 2009; Huberman et al. 2009; Erickson 2008; Krishnamurthy et al. 2008; Java et al. 2007) and on microblogging as a learning tool (Ebner & Schiefner 2008; Skiba 2008; Ullrich et al. 2008). Less research has been published on the further development of microblogging from a design science point of view (Böhringer & Röhrborn 2008; Passant et al. 2008) and on microblogging as a mobile application (Barkhuus et al. 2008; Gaonkar et al. 2008).

The technology research company Gartner (2008) added microblogging to its hype cycle in 2008, predicting a sharp rise in popularity. According to Gartner, leading-edge companies are investigating the potential of microblogging to enhance other social media and channels. However, until now little has been known about enterprise microblogging. As with social networking services before (cf. e.g. Richter & Koch 2009) the development of enterprise microblogging, the discussion of usage within the intranet is driven primarily by concerns of privacy, customisation, and restriction to use within the company firewall.

3 Research Method

Microblogging and especially its application in the corporate context is a very new field of research. To date there is no broad user base and no “best practices” are available. Even more critical is the fact that it is not even clear what the term “enterprise microblogging” exactly stands for. This is why we chose the case study method to show the process of conceptualisation, implementation and diffusion of an enterprise microblogging system.

According to Yin (2003) evidence for case studies may come from six sources: documents, archival records, interviews, direct observation, participant observation, and physical artefacts. In this case we had the opportunity to attend the project right from its start. Given this great chance we decided to build our case study on direct observation. We underpin these findings with the resulting software as a physical artefact. Finally, statistical data about the first six months of use and five interviews help to measure the project’s success.

Referring to Flyvbjerg (2006, 221) we suggest that this case study should be perceived as a way to understanding the aspects of this very new field of research and to learning from its

example: “First, the case study produces the type of context-dependent knowledge that research on learning shows to be necessary to allow people to develop from rule-based beginners to virtuoso experts. Second, in the study of human affairs, there appears to exist only context-dependent knowledge, which, thus, presently rules out the possibility of epistemic theoretical construction.”

Our study is based on direct observation of the first author during an enterprise microblogging project. He attended important project meetings and had access to the tool right from its conception in order to obtain a deep understanding of the case (Myers 1999). Field work took place from March 2008 till March 2009. The implementation project started in the late summer of 2008. The following paragraphs describe our findings.

4 Case study

In order to present context-dependent knowledge from the current case, we are going to describe in detail the company involved and the background to the microblogging project. We then go on to present its procedure to conceptualise and implement an enterprise microblogging service. Finally, we have a look at the resulting software artefact and usage data.

4.1 Background

Communardo Software GmbH in Dresden, Germany offers software solutions and consultancy in the context of knowledge management and team collaboration. The company has been growing sharply during recent years and has about 150 employees. For the most part the employees work in knowledge-intensive project contexts with flat hierarchies. The internal IT environment contains group-supporting applications like an intranet wiki, blogs and project spaces.

As Communardo itself is a vendor and consultancy in the area of Web 2.0 its employees are affiliated with the early adopters of new web services. Some of them tried Twitter and realised its potential to improve their collaboration at work. In spring 2008 they suggested using Twitter or a Twitter-like tool for the company’s project teams. Until then broad email conversations or the usage of the wiki’s discussion pages were common and lead to a large number of unmanageable information silos. The anticipation of the benefits of microblogging was that it would reconnect different parts of the company which were separated during its growth and that it would be the best tool for representing the flow of information in the project teams (providing a “single point of truth”).

The initial decision was against using a public microblogging service like Twitter for internal use. The reasons for this were the perceived functional deficits (e.g. no rights management, few possibilities for search and filtering) and strategic reasons (data protection, security of investment and reliability). Since there were no solutions for enterprise microblogging available at this time, the only fast and easy way to set up a microblogging-type system was the use of the blogging software Wordpress enhanced with a special theme called Prologue. This

setting was tested in a project team. The approach in general was found very useful, and hence it was adopted company-wide. However, the modified Wordpress did not ultimately meet functional expectations.

4.2 Conceptualisation and Implementation

Communardo formulated the following requirements for its internal microblogging tool:

1. Topic-centred content structuring and rights management should be available.
2. Information management should be possible through tagging and filtering.
3. Various integration scenarios should be supported (LDAP, RSS, portlets, mobile client, XMPP, corporate identity).
4. Security features like encryption, user management and robust software design should be included.
5. The system should be easy and fast to use

The first requirement represented a remarkable difference from the example of Twitter. It was argued that the so-called noise postings – which are not relevant for the user but because of their quantity hide important ones – should be minimised. A topic-centred structuring was also seen as the condition for effective rights management. The assumption behind this was that each person acts in different roles, such as project manager and CEO. So it should be conceivable that project-relevant postings by each person would be accessible only to co-workers involved in the same project. The possibility of establishing rights settings for every single posting, however, was rejected in favour of simplicity. Thus, the solution was the conceptualisation of multiple microblogs where single users could be added.

The approach was implemented in a non-functional user interface prototype. In this early stage of the project special usability consultants were asked to test the prototype including different versions of tagging. The aim of these tests was to find out if the handling would be intuitive. The findings were used to rework the first concept.

After the conceptualisation phase Communardo decided to move on and started the implementation phase. The technological planning took place parallel to the screen design. The project team kept the iterative proceeding and published the resulting tool as quickly as was possible. This is what we are going to describe in the next paragraphs.

4.3 Resulting software artefact

The resulting software artefact is a browser-based microblogging system. It uses Web 2.0-typical technology (i.e. Ajax) and design. Communardo chose the name “Communote”– a combination of the company’s name and the word “note”. A screenshot of the software from February 2009 is shown in figure 1.

At first glance Communote looks similar to Twitter. In fact the key elements are the same: the posting stream is the major part of the system and a panel with filtering and navigation options is situated on the right. A major difference is the drop-down list on the top. This UI element is used to choose the microblog in which to post. The first page shows a combined view of all postings from one user's microblogs. To post a message the user has to either choose a single microblog using the drop-down list or reply to an existing message. In the first case it is one additional click compared to Twitter, in the second case there is no extra effort.

The panel on the right contains a dynamic tag cloud and additional filtering possibilities. Filters are available for tags, free search, authors, microblogs and time periods. They can be combined freely. Every filter combination is also available via an RSS feed.

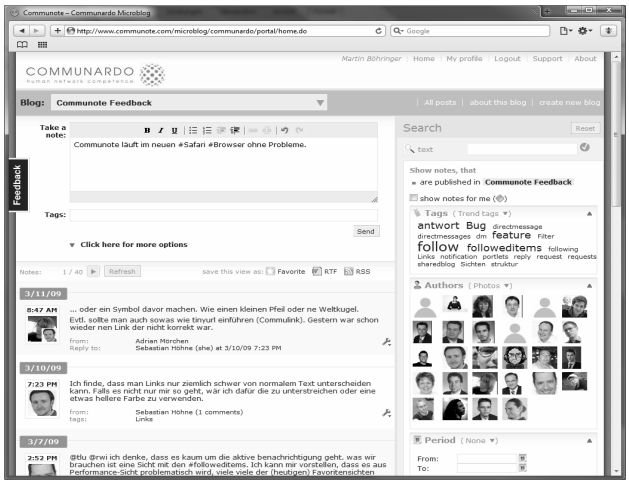

Figure 1: Screenshot of "Communote"

4.4 Rollout and Usage

The first postings are dated the end of September 2008. Communote was published internally as quickly as possible and was available to everyone via the existing LDAP logins. The tool was not promoted, nor were there training sessions. Usage adoption started with the project team itself and expanded virally throughout the company.

In February 2009, 57 users were registered with Communote. They had created 109 microblogs and posted 3,519 messages since September 2008. Figure 2 shows different user profiles in the system: The majority of users post, on average, one to ten messages per week, power users up to 35 postings. Approximately one third of the user base writes less than one posting per week. As our interviews show these users do not necessarily refuse to use Communote. On the contrary many say that they use the microblogging system quite often. However, they are mostly passive users and do not actively contribute to a great extent.

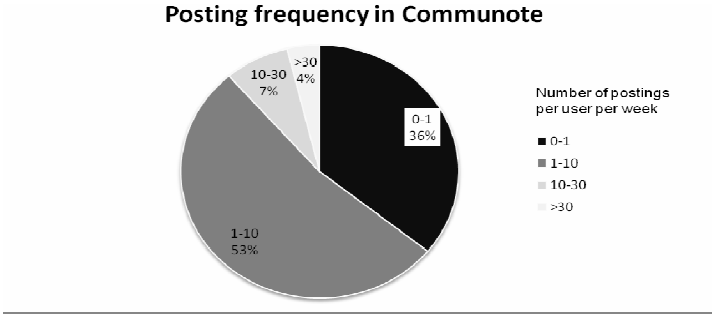

Figure 2: Posting frequency in Communote

There is an anecdote from the Communote project which aptly describes the operating principle of enterprise microblogging. With a view to the imminent launch of the service for external customers[3] the head of the project assigned a lawyer to the formulation of the terms of service and the privacy policy, but did not consider that the two documents should also be available in English. The error would normally only have been discovered days later when the documents would be needed. The use of microblogging led instead to the following dialogue:

16:41, User A (project manager): "Telephone call with #attorney: [...] concerning #termsofuse, #privacy: draft by friday, coordination on Sunday, fine tuning monday [...]"

16:52, User B (team member): "@UserA: Does the # attorney consider an English version necessary as well?"

There are a number of similar cases concerning the use of microblogging at Communardo. What most of them have in common is that the crucial input comes from colleagues that normally – in the case of email or direct communication – would not have been informed or included. In the following we want to sum up some lessons learned from the development, implementation and deployment.

4.5 Lessons Learned

Only a few months after deployment Communote is considered to be the central information and communication channel within the company. Communardo calls it an efficient alternative to email for internal communications. Furthermore, a general awareness of the activities, thoughts and feelings of the co-workers has been established. Surprisingly, the use of Communote doesn't seem to kill informal small talk during coffee breaks. In fact it is reported that microblogging has enriched these talks as they quite often begin with "I have read in Communote that you...".

[3] Communardo offers Communote also as a commercial service for external customers.

One of the project's lessons is that microblogging cannot be taught. Every user has to find out how he or she wants to use the system. Crucial to the sustainable use of the service seems to be intrinsic motivation. This arises only when the user is convinced of its benefit. Early adopters at Communardo were in particular those employees who already had experience with Twitter. Other users tested the tool and gathered experience "tweet by tweet". In this context it can be considered important that the users had the ability to test the functionalities informally. This also applies to secondary functions such as tagging.

Another lesson learned concerns the adoption of public internet technologies. Remarkably, it was discovered that some users already using Twitter had difficulties with Communote, resulting from the unfamiliar concept of different microblogs to post in as well as the rights-management issues. It was therefore important to Communardo that these users were informed that Communote would not be a "Twitter for the enterprise", but an enterprise microblogging system. This changed their perceptions of the system and let them understand its concept more fully.

5 Discussion and Conclusion

In this paper we presented the case of Communardo, a company that extended the microblogging approach, as we know it, from Twitter. We described experiences from the phases of conceptualisation, implementation and deployment of the enterprise microblogging tool Communote. A main point of discussion is whether the resulting system, with its rights management functionality, multiple non-personal microblogs and missing character limitation can be called a microblogging tool at all. To answer that question it would be necessary to have an accurate definition of microblogging. However, existing definitions consist only of descriptions of Twitter's functionality (e.g. Krishnamurthy et al. 2008; Java et al. 2007). From our point of view Communote clearly is a microblogging system by its character. According to the linguistic origin of "microblogging" the meaning is the informal exchange of small information snippets. There are similar opinions in the blogosphere, too. Some even argue that Twitter is not a microblogging service at all because of its lack of central blogging functionality like tagging (Hodson 2008). If one were to follow this argument, Communote can clearly be categorised as microblogging tool with enterprise features. To clarify this understanding of enterprise microblogging we suggest the following definition:

Enterprise microblogging is technologically supported interpersonal interaction utilising short information snippets within a separated information space (i.e. company, department, project) in order to create informal, social, group-structural, and workspace awareness.

Enterprise microblogging is a very interesting field of research and we expect further works on this topic to be published soon. The presented case is still at an early stage and further questions can be raised after Communote's usage has settled. Future research could specifically address the efficiency of microblogging (awareness vs. time & effort) and a comparison with other enterprise microblogging tools in order to identify best practises and generalise our results.

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