8-2010

Enterprise Microblogging: Procrastination or productive use?

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ABSTRACT

There are growing fears amongst corporate managers that the introduction of Social Media and related technologies such as microblogging platforms will lead to large-scale time-wasting with negative impacts on corporate productivity. Our research analyses the communication practices of a corporate team that has embraced an Enterprise Microblogging platform and embedded its use into their day-to-day activities. We conduct a genre analysis of the team's microblogs and compare our results with a recent study of public microblogging on the Twitter platform. By analyzing genre repertoires we have shown that enterprise microblogging can be significantly different to the public equivalent, and that in the corporate context, microblogging platforms can be used in productive ways.

Keywords

Microblogging, Twitter, Enterprise Microblogging, Social Media, Group Work.

INTRODUCTION

The popularity of Microblogging has grown significantly since the launch of Twitter. Using Twitter individuals are able to broadcast what they are currently doing to a global audience. Microblogging messages are short (up to 140 characters), the user interface is simple, and a wide range of tools provide ubiquitous access. Twitter belongs to an emerging class of technologies known as Social Media. These have gained significant coverage from the popular press and management-focused media alike, spurring organisations to begin trialling 'social' applications. Many have trialled and implemented such technologies in their Intranet domains, for facilitating collaborative processes among employees (e.g. McAfee 2009).

A growing number of vendors offer platforms to facilitate Microblogging "behind the firewall". However, it is unclear if *Enterprise Microblogging* (EMB) leads to improvements in team communication. Moreover, the manner in which EMBs can be effectively appropriated and used in a corporate context is relatively unknown. Typical claims regarding the usefulness of EMBs include the sharing of information and exchanging of ideas. While platform vendors and consultants point to the novel functionalities of their platforms, little is known about what impact social media may have in the corporate realm. In fact, many decision makers have voiced concerns that the deployment of social media in organisations can engender some of the typical (and less desirable) behaviours associated with the use of social media on the public Internet (e.g. Howlett 2009).

In this paper we report on a case study where we explore the use of and practices surrounding EMB in a corporate context. Our case company had adopted and used an EMB platform for several months. We apply genre analysis to identify communication types and reason concerning the role of this new platform in a team context. We also compare our results with similar studies on Public Microblogging (PMB) using Twitter. Our results show that EMB as a phenomenon is very different from PMB. While in both cases the underlying technology is quite similar, the appropriation and use in a corporate context are structured by the needs of the tasks at hand and by a *shared* group context.

MICROBLOGGING

The principle underlying the practice of microblogging is simple, individuals using a microblogging web-site can post short messages on in their own private web-page. These short messages called *tweets* on the Twitter platform, and can contain up to 140 alphanumeric characters. Other individuals can decide to 'follow' a microblogging user and can subscribe to receive

their messages. These appear in chronological order on the following users' web-page on the microblogging service. On Twitter, arguably the most dominant microblogging website, such messages can be 'sent' using a wide range of third party services. For example, messages can be created with third party software solutions, posted via mobile text messages, or via several other third-party applications on various mobile platforms.

Twitter

Twitter, and more generally microblogging, has recently become the subject of research in different disciplines. Most of this research has focused on descriptions and explanations of Twitter (e.g. Barnes & Böhringer 2009; Huberman et al. 2009; Krishnamurthy et al. 2008), and the reporting of a wide range of usage patterns demonstrating the fact that microblogging is an open medium with multiple contexts in which users appropriate this technology. For example, there are studies on the use of twitter for political campaigning (Cetina 2009), in the context of civil unrest and protesting (Fahmi 2009), as a form of electronic word-of-mouth for sharing consumer opinions (Jansen et al. 2009), as well as on Twitter as a tool for social activism (Galer-Unti 2009). A recent study which has investigated usage patterns on Twitter (Naaman et.al., 2010) identifies typical communication types and reasons and associates this with types of users. This study is very similar to the approach we have taken and hence ideal for comparing our results in Enterprise Microblogging with the *prima facie* similar practices in the public space. In order to aid our comparison we briefly introduce the results of this research into Twitter.

Naaman et.al. (ibid.) show that 80% of Twitter users can be classified as so-called 'me-formers', who mainly make themselves the object of their communications. Just 20% are seen to be true 'in-formers', who post content that is targeted and might be of interest to other users. Naaman et.al. carried out a content analysis of Twitter posts, which is similar to our approach. Specifically, they identified different communication types (or genres). Most of the communication they observed related to postings that place the individual (i.e. the sender of the post) at the focus of what is written. Consequently, information about themselves (41% e.g. "I'm tired"), random thoughts (25%: "Blue sky in Winter") and opinions (24%, "Great game yesterday") emerged as the most common categories of communication, while true exchange of information ("New Study on Enterprise 2.0: http:// ...") occurs in only 21% of all posts. The results are in line with and seem to confirm the appropriation of the Twitter platform in much the same ways, as intended by the developers – to share what one is doing/thinking at the moment.

Microblogging in the Enterprise

As microblogging in public space (the Internet) has gained momentum, corporations have begun to investigate how they might exploit the potential of this technology for internal group communications. Meanwhile, more than 30 microblogging platforms have emerged (Hoewner 2009). While the platform vendors claim a range of benefits, such as improved communication or group awareness, decision makers have been thus far reluctant to adopt this new technology in the corporate space. We question the suitability of microblogging for corporate application. The potential benefits and risks associated with corporate social media is the topic of lively discussion amongst interested parties in Internet Blogs and other Internet Commentary outlets (the *blogosphere*). Among the general concerns is a belief that in the corporate context, employees will be reluctant to use such tools and that many organisations might not be culturally ready to implement social media (Marchionda 2009). Moreover, some company executives appear concerned at the potential for time-wasting, or "the great chatter" associated with Twitter and the like, potentially leading to productivity losses in their companies (e.g. Duperrin 2009). Our research is motivated by this ongoing discussion surrounding social media and its potential application. We compare Enterprise Microblogging in our case study with the Twitter usage patterns identified by Naaman et.al. (2010).

OUR STUDY

Our study explores the usage practices of an Enterprise Microblogging platform which we compare with Naaman et.al.'s study of Twitter usage. We have applied genre analysis to textual data that we have collected from the case company's EMB platform. We have identified communication genres in our data which we interpret as representing EMB communication practices. In the following section we introduce the case company, provide an overview of the case sampling methodology and describe our genre/data analysis protocols.

Communote Enterprise Microblogging

Communote is a browser-based platform that is based on the concept of multiple microblogs (blog streams) to which users can be added. The majority of the key features of this platform are similar to those of Twitter: the posting stream is the main element and a panel with filtering and navigation options is situated on the right. However, a major difference is that users can choose specific streams in which to post. Therefore, rather than posting messages in one large general stream as with

Twitter (where users then need to configure their own personalised streams by way of creating a list of people they follow), Communote allows the setting up of distinct blogs/streams that are explicitly associated with projects or teams. Users are then given access to these blogs, and can decide in which *context* to post. A user's start page then shows a synthesis of postings from the user's microblogs. In order to read the individual messages associated with a project, users can simply select the respective blog and view the emerging stream of messages.

Communote has been developed by Communardo Software (Germany). The company has developed it to firstly serve their own internal communication needs and then to market the software to external clients. Our case study that is reported in this paper focuses on the internal usage of the platform in one of the Communardo internal teams.

The case company

Communardo was founded in 2001 in Dresden, Germany and has since grown into a company of 180 employees. It offers software solutions and consultancy in the context of knowledge management, team collaboration and project & portfolio management. Its employees work in knowledge-intensive projects and as such, teams are an essential component of the way the company is organized.

Caused by the company's rapid growth, difficulties emerged in sharing information and ideas between organizational units and across projects, which inspired the adoption of the microblogging idea. In spring 2008 an employee suggested that the company investigated the use of Twitter or a Twitter-like tool to facilitate team communications. Until then, broad email conversations or the use of wikis with their associated discussion pages were common. Reportedly, this lead to a large number of information silos, which became unmanageable. Management embraced the idea of microblogging and hoped to use this technology to integrate the different parts of the company and to facilitate the flow of information in project teams (to provide what was called a "single point of truth"). Communardo's management decided against using a public microblogging service and as enterprise microblogging solutions (at that time) did not fulfil their requirements, the company developed their own solution. They called this Communote which is a combination of the company name and the word "note".

Sampling: team selection

In order to collect data for our research the company granted us access to the blog streams on their Communote platform (except for some parts which were earmarked as confidential). In order to arrive at a manageable data set, we focused on one team within the company – the software engineering team for knowledge management solutions. We selected the team that had been using the EMB platform the longest. This team had also reportedly showed significant adoption. It consists of a team leader, four software engineers, two consultants and five support workers. From this team, we analysed blog streams which had at least ten posts. We excluded blogs that were set up very recently and others that focused on narrow topics and contained too few posts. In total, we considered 10 blog streams for our research containing 648 posts with a total of 36,867 words. All texts were extracted and analysed using the qualitative data analysis software atlas.ti 5.0.

Genre identification by way of text analysis

Genres are "socially recognized types of communicative actions […] that are habitually enacted by members of a community to realize particular social purposes." (Yates et al. 1999, 84) They develop over time as a response to recurring communication situations and in turn function as socially agreed upon templates on which group members routinely draw when they communicate with each other (Orlikowski and Yates, 1994). Genre analysis serves as an instrument to understand the communication practices of a social group, because "in identifying and labelling genres we try to capture the gestalt of the various components of the communicative act" (Kwasnik and Crowston, 2005, 80).

In order to identify communication genres, we first needed an understanding of how a genre can be recognized. Conceptually, a genre is a class of communicative events; communication events in turn are instantiations of a genre (Swales, 1990). The communication events people engage in during their daily routines, such as a post (a written utterance) in a microblogging stream can be observed in context. 'Purpose' is a criterion by which to communication genres can be classified (Askehave and Swales, 2001).

Using the data we collected from our case company, we identified genres by coding every blog post according to a communication purpose (i.e. what is this communication trying to achieve?). In doing so, two researchers have read and coded the texts, discussing and refining any possible deviations in interpretations along the way. We identified a total of 912 single genre appearances across the ten streams that we analysed. While most posts have one purpose and are thus regarded as an instance of one genre, many of the longer posts represent different communicative events and thus contain more than

one, sometimes several instances of different genres. On average 1.4 genres were assigned per blog post; table 1 shows an example of a blog post with multiple genre instances. In total, we identified 6 genres, which are made up of a total of 18 sub genres. Due to space limitations in this paper we will not discuss the sub genres in any detail.

Blog post	Genre codes (sub genres)
"WuLa-platform is #Live!	:Provide update (update on event)
Great @ejc @lue @esa	:Coordinate Others (provide social feedback)
Need to send out support offer.	:Coordinate Others (post to-do items)
#Essa is next topic	
We get a reference release from #HAS	:Ask Question (how-to question)
@oha how do I do that?"	

Table 1. Example of a complex blog post with multiple genre instances

COMMUNICATION GENRES IN ENTERPRISE MICROBLOGGING

In this section we describe the communication genres that we identified through our analysis of postings on the microblogging platform. Since genres are classified by *purpose* they represent distinct communicative types, which in their totality (as a genre repertoire) provide a rich picture of *why* our case study users engage in EMB in their team context. Moreover, the genres allow us to reason about the purpose or role that EMB serves in this team context. Table 2 illustrates that most of the communication on the platform belongs to one of four genres, while the remaining two genres only account for a very small set of communicative events. We will focus our discussion on the four most prevalent genres (this is similar to the approach taken by Naaman et. al. (2010)).

The genres in table 2 represent *reasons for* and *ways of engaging* with others on the EMB platform. For example, users can post in order to ask questions, to share information they found elsewhere, discuss a project matter, coordinate others in the team context, provide updates on matters invisible to others and post information to be recorded for future reference.

Genre name	Share	Description
Provide updates	43.8%	Users inform others about ongoing activities and events in the shared workspace. People post, in order to update the whole group, when they have finished a task, when an event occurs, a decision was made, or when someone has spoken with an outside person (e.g. a client).
Coordinate others	20.9%	People post in order to delegate a task to others, record lists of items the team needs to attend to, or to provide social feedback.
Share information	15.9%	Users share information with others, such as relevant references (e.g. URLs), their expertise in solving a problem or ideas for new products.
Ask questions	13.7%	People post because they need to know something, solve a problem, ask for task progress or ask someone to decide on an issue at hand. All these postings represent questions.
Record information	2.9%	Users occasionally post information to the platform in order to record information, i.e. login data, contact details or meeting minutes.
Discuss & Clarify	2.9%	People very rarely utter personal opinions ("I think…") or communicate to clarify some particular aspect that is unclear to someone.

Table 2. Description of identified EMB communication genres

Provide Updates

This genre is by far the most common one (representing 43.8% of all genre instances). It represents the users' intention to provide others with information about what is going on in and around the team's shared environment. In doing so, the most important reason for people to post on the EMB platform is to provide status updates of what they did; for example, someone might have just finished a task or wants to let others know of the current progress of a task. This highlights the role of EMB as a task-related coordination medium that provides others with awareness of what team members are doing in their day-to-day project work. Other reasons for providing updates for others are updates on events. People, particularly team or project leaders, frequently inform others about events outside the immediate team environment and their resulting implications, such as communication with a client company or newly won contracts. We identified three more reasons for why people provide updates to others. Users provide others with information on upcoming events, such as a client meeting or the unavailability of a server due to installing a patch. They also alert others to an important emerging issue. Finally, and particularly applying to team leaders) they provide updates on decisions they have made which impact on the actions of others.

Coordinate others

This is the second largest among the six dominant genres (representing 20.9% of genre instances). It comprises communication events that are aimed at directly influencing other team members and their tasks. For example, people quite frequently post items (or a lists of action items), which need to be taken care of by others or by the entire team. Similarly, people create posts in order to delegate tasks to others. While in the first case a list of to do items is often noted for future reference and posted to the team generally, when delegating tasks, people address other team members directly and hand over a task for completion. Consequently, this is most often done between team leader and team member. Finally, executive directors and team leaders also account for communication with regards to providing social feedback to the group, i.e. in order to acknowledge the group in relation to the work of others.

Share information

This genre characterises blog posts in which people share work-related information and knowledge with others and represents 15.9% of the genre instances we analysed. The aim of these communicative events can be to share information that a team member has found from outside the team context, such as URLs or other references to articles and content available on the Internet and other media. Such information is of potential interest to the team tasks or otherwise intersting for team members. Quite frequently people also post solutions for team problems or otherwise educate others on specific problems, for example how to set-up software or to carry out a task. People also occasionally post new and innovative ideas for new products (e.g. software modules) as a trigger for team discussions.

Ask questions

This genre represents the need users have to acquire information from others. Genres of this category account for 13.7% of all genre instances in our sample. The following are typical situations in which people draw on these genres in their communication: A user might need to know something about a product or a service in order to solve a problem; team members might need to know the status or progress of a particular task in order to get on with their work; or users need to refer a matter to others for decision. Not surprisingly this genre is far less common as some of the other genres. Most of the time there appears to be no need to ask for task progress etc., since users have established a practice to proactively update others on various team-related matters (as indicated above).

DISCUSSION

The above genres show how team members in our case have established communication practices based on the use of an EMB platform to support their teamwork. We now compare the genres that we have identified with Naaman et. al.'s (2010) study on microblogging using Twitter. We discuss and draw out the differences.

Comparison with Twitter

Practice and perceptions of microblogging has largely originated from and is shaped by people's experience with the Twitter platform. A key aim of our study is to compare public microblogging (PMB) (which is in the main represented by Twitter usage) with the emerging instantiations of Enterprise Microblogging (EMB) as represented by the results of our genre analysis above (our genre repertoire).

We can identify a fundamental difference in the purpose of communication when comparing PMB with EMB. According to the study by Naaman et. al. (ibid.), the most common communication genres on Twitter are concerned with communication

about *self*: Users 1) post status updates about themselves (41%), utter random thoughts (25%) or voice opinions (24%). Naaman et. al. refer to this as *Me-forming behaviour* as the communication is largely self-referential. Only 21% of all posts Naaman et. al.'s study are communicative events where users post information with *others* in focus, i.e. to make others aware of interesting information (often by posting URLs).

In strong contrast, in the corporate context of our case, the most common communication genres can be considered as communication for *others*: Users 1) provide status updates of various aspects (44%), 2) communicate to actively coordinate others (21%), 3) share information (16%), and 4) ask questions (14%). A fundamental reason for this striking difference is likely to lie in the fact that, other than in the public sphere, the users in our case share a common context by being part of the same organisation, team, or project. Communication takes place with a rich knowledge of the recipients and their needs. As a consequence, people do not communicate mainly to present themselves or build a personal reputation by posting in a certain topic area (as represented in their own blog stream on Twitter). In fact, personal streams do not exist on the Communote platform, which also demonstrates an interesting aspect concerning the appropriation of microblogging in the corporate context.

Microblogging in our case, as is reflected in our genre repertoire, is very much a social endeavour. Communication in this respect is to a significant extent based on two fundamental principles: 1) projection and 2) an expectation of reciprocity. As corporate team members engage in microblogging (e.g. by providing updates), they project their own situation and information needs to others, and in doing so, they consider what information is sent to others. At the same time team members *expect* to receive similarly purposed information streams (i.e., there is a sense of emergent reciprocity in the genre repertoire). The result is the formation of *shared practices* in EMB use, i.e. the emergent practices of awareness creation (cf. Riemer & Haines, 2009). Hence, in the shared corporate team context, the communication practices of microblogging evolve quite differently from what has been described as microblogging in the public sphere. Furthermore the EMB as a service to support team action becomes embedded in situated group communication norms and people draw on it to enable certain practices such as awareness creation and task/team coordination.

Implications

Our results have implications for corporate decision makers. In the introductory sections of this paper we noted that there are concerns amongst corporate management in relation to the application of social media and microblogging to the corporate context. These are based on fears that public-Internet behaviours (such as time-wasting) could be introduced to the corporate intranet space. Our findings however show that microblogging as a practice is highly context dependent. In our case, EMB is very much targeted towards supporting group work in productive ways. Our findings emphasise that technologies such as MB platforms, i.e. communication and collaboration systems and social media services, are open technologies, which do not in and of themselves precipitate use.

A communication platform features a type of openness whereby the artefact does not lend itself to or even determine a particular form of usage (Riemer and Taing 2009). At the same time, its potential benefits and likely effects in a particular context cannot be deduced from either an analysis of its features or the associated patterns of use in an entirely different context. Rather, platform technologies need to be appropriated by their users in a particular context (Riemer et al. 2009). In doing so, they are likely to become part of rather different practices when compared across contexts. From a practical point of view, there appears to be no need for decision makers to worry that EMB will import the hedonistic, procrastination-type behaviours typically associated with Microblogging on Twitter. Rather, our case demonstrates that employees *can* appropriate MB technologies in useful, focused and sensible ways.

LIMITATIONS AND FURTHER RESEARCH

Our results and discussion needs to be set in the context of our study's limitations. Firstly, we explored a single case (i.e. one team), albeit a special and interesting one as the team has incorporated EMB into its *daily* practices. However, we believe that our research would benefit by extending our analysis to a larger population of cases. As an immediate next step we firstly plan to revisit the case company and replicate our study with MB data from another team. This might yield interesting insights into possible local appropriation differences between teams in the same corporate context. Secondly, we hope to be able multiply our study with additional cases that have implemented the same platform, e.g. Communardo customers, which could allow for inter-context comparisons of appropriations of the same platform. Our research provides a rich account of EMB in a corporate context but it does not however allow for any generalization of our results. Generalization may not be relevant where we would expect analyses of EMB genre repertoires to be different in different organisational contexts. None-the-less we believe that more data is needed to explore the richness and variety of EMB practices in context.

With regards to the case that we have focused on in this paper there are specific limitations to the conclusions we can draw from our findings. Our data did not yet include any information relating to the team's media choice behaviour and decisions in general. For example, we do not know exactly what other communication media the users draw on for different purposes, we only know from our interview data (not reported on in this paper) that extending our research in this direction might yield interesting insights. An extension of our research in this direction might lead to interesting insights into the effects of media variety on group communication practices.

There are also further possible ways we could analyse our existing data. For example, a coding and analysis of the blog posts by *organisational role* might lead to insights on how communication in EMB might or might not reflect team role. It has been suggested that social media when used in a corporate context will lead to flatter hierarchies (see for example, McAfee 2009). A role-based analysis could provide insight into whether EMB platforms can contribute to the blurring of organisational roles.

CONCLUSION

Our small study of the EMB practices of a single team in a single corporate context suggests that there can be significantly different ways in which microblogging platforms can be used depending on their situated context. We have demonstrated that contrary to widespread fears, there may be productive uses of social media in the corporate context. By conducting a genre analysis of microblogs in a corporate setting, and comparing our results to Naaman et. al.'s PMB analysis, we have found that there is a significant difference between PMB and EMB in that the former is dominated by communications *about self* whilst the latter is dominated by communication *for* others. Our results are of interest to managers who are considering (or resisting) the introduction of social media and related technologies to their corporate intranets as we have demonstrated that EMB platforms can be usefully appropriated in a corporate context.

REFERENCES

1. Askehave, I. and Swales, J. M. (2001) Genre identification and communicative purpose: a problem and a possible solution, *Applied Linguistics*, 22, 2, 195-212.

2. Barnes, S. J. and Böhringer, M. (2009) Continuance Usage Intention in Microblogging Services: The Case of Twitter, *Proceedings of the 17th European Conference on Information Systems*, Verona.

3. Cetina, K. K. (2009) What is a Pipe? Obama and the Sociological Imagination, *Theory, Culture & Society*, 26, 5, 129-140.

4. Duperrin, B. (2009) 7 web 2.0 words to use cautiously with real managers, retrieved 11/2/2010, from http://www.duperrin.com/english/2009/11/25/7-web-2-0-words-to-use-cautiously-with-real-managers.

5. Fahmi, W. S. (2009) Bloggers' street movement and the right to the city. (Re)claiming Cairo's real and virtual "spaces of freedom", *Environment and Urbanization*, 21, 89-107

6. Galer-Unti, R. (2009) Guerilla Advocacy: Using Aggressive Marketing Techniques for Health Policy Change, *Health Promotion Practice*, 10, 325-327.

7. Hoewner, J. (2009) 30 Enterprise Microblogging-Tools, retrieved 11/2/2010, from http://www.moderne-unternehmenskommunikation.de/wordpress/tipps/tools/30-enterprise-microblogging-tools.

8. Howlett, J. (2009): Enterprise 2.0: what a crock. Retrieved 11.2.2010, from http://blogs.zdnet.com/Howlett/?p=1228.

9. Huberman, B. A., Romero, D. M., & Wu, F. (2009). Social networks that matter: Twitter under the microscope, *First Monday*, 14.

10. Jansen, B., Zhang, M., Sobel, K. and Chowdury, A. (2009).Twitter power: Tweets as electronic word of mouth, *Journal of the American Society for Information Science and Technology*, 60, 11.

11. Kwasnik, B. H. and Crowston, K. (2005) Introduction to special issue: Genres of digital documents.,*Information Technology & People*, 18, 2, 76-88.

12. Krishnamurthy, B., Gill, P. and Arlitt, M. (2008) A few chirps about twitter, *Proceedings of the first work-shop on Online social networks*, New York, ACM, 19-24.

13. Marchionda, M. (2009) Afraid of using social media internally? Retrieved 11/2/2010, from http://www.prescientdigital.com/articles/web-2.0/afraid-of-using-social-media-internally.

14. McAfee, A. (2009) Enterprise 2.0: New Collaborative Tools for Your Organization's Toughest Challenges, Boston, Mcgraw-Hill Professional.

15. Naaman, M., Boase, J. and Lai, C.-H. (2010) Is it Really About Me? Message Content in Social Awareness Streams. *Proceedings Computer Supported Cooperative Work 2010*, Savanah, ACM.

16. Orlikowski, W. J. and Yates, Y. (1994) Genre Repertoire: The Structuring of Communicative Practices in Organizations, *Administrative Science Quarterly* 39, 541-574.

17. Riemer, K. & Haines, R. (2008) Pools and Streams: A Theory of Dynamic, Practice-Based Awareness Creation in Mediated-Communication, *Proceedings of JAIS Theory Development Workshop.* Sprouts: Working Papers on Information Systems, 8, 12, http://sprouts.aisnet.org/8-12.

18. Riemer, K. & Taing, S. (2009) Unified Communications, *Business & Information Systems Engineering (BISE)*, 1, 4, 326-330.

19. Riemer, K., Steinfield, C. & Vogel, D. (2009) eCollaboration: On the nature and emergence of communication and collaboration technologies, *Electronic Markets*, 19, 1, 181-188.

20. Swales, J. M. (1990) Genre Analysis: English in academic and research settings, Cambridge et al.