

## Media Variety as a Barrier for Successful Collaboration in Research and Education

Alexander Richter, Michael Koch, Alexander Warta

### 1. Challenge: Media Choice

Both, research and education, are very much based on communication, coordination and cooperation (in teams, communities and networks) – and more and more tools for computer supported collaborative work are used in universities. Beside the well-known Groupware suites like Microsoft SharePoint or IBM Lotus Notes, Social Software is increasingly establishing itself as an alternative or addition in companies (see e.g. Back et al. 2008; Koch/Richter 2008) and at universities (see e.g. Pleil 2008).

A special characteristic of Social Software (in contrast to Groupware) is that it often does not enforce a particular process, but is more like a medium, and can be used for very different tasks in information management, communication, identity and network management. Due to the more and more services coming up and the broader range of potential usage of the single applications it can be stated that selecting the appropriate tool for a given task (“media choice”) is becoming increasingly difficult (Warta/Richter 2008).

The goal of our work is to provide support (guidelines) for deciding among the different Social Software and Groupware tools systematically. While important for industry too, we have selected universities as our experimental field. This field is especially interesting for looking into the media choice problem because (research) groups in universities have quite numerous and diverse contexts they have to collaborate in – often spanning different organizations – and therefore, providing and even demanding quite different tools in place.

### 2. Background: Media Theory

There are nearly a dozen theories for different aspects of computer-mediated communication, which are nicely collected by Döring (2003, pp. 127, pp. 187). For help in the media choice problem with Social Software especially the technology-deterministic approaches like media choice (rationally, normative and interpersonal) and media characteristics (channel reduction) seem to be appropriate. Within the culturalistic approaches – models for medial communication behavior particularly net culture - seem to provide helpful insights (Warta/Richter 2008).

The core statement of the rational media choice theories in general is: computer mediated communication (CMC) is exceptionally suitable for simple – and not for complex - communication tasks. Task adequate use of CMC is enrichment (Döring 2003, p. 187).

A medium is such much the more comprehensive one the better it supports the handling of ambiguous messages (“media richness”, e.g. Daft/Lengel 1984). Information poor media – such as email – are the most effective ones for simple communication tasks. On the other side information rich media – such as face-to-face meetings – are the most effective ones for complex communication tasks. Is a medium too rich for the task they allude to “overcomplication”, the opposite case is “oversimplification”. Between these two extremes a passage of effective communication is located.

The media synchronicity theory (Dennis/Valacich, 1999) extends the media richness theory. It does not assume an adjustment of the medium choice to the task of communication, but an adjustment to the communication process. Media synchronicity is defined as the extent, in which individuals cooperate at the same time in the same task (Döring 2003, p. 136). As far as Social Software is concerned the distinctive features considered in the media synchronicity theory (Dennis/Valacich 1999 and Paechter 2003 p. 37) lose notably in clarity. This lack of distinction in comparison to other media is in our judgment the theoretical reason for the problem of media choice between traditional and new media.

### **3. Solution?**

After having reviewed the media theories and having not found an immediate solution to our problem (a clear guideline for media choice), we are currently following this approach:

- identification / classification of use cases and activities in research and education scenarios
- identification / classification of problems or barriers in the use cases and activities
- classification of Social Software and Groupware tools according to the task classification / their potential for addressing barriers

For the identification and classification of use cases and activities we have started to do semi-structured interviews in more than thirty research groups in different German universities.

For the classification of the tools we have reviewed different existing approaches. In our opinion very promising one seems to categorize the tools by their key functionalities (e.g. Hippner 2006, Schmidt 2007). In (Koch / Richter 2008) we have proposed three basic categories (information management, (direct) communication, identity and network management). Our first findings show that this tripartition is already quite helpful when discussing media selection processes, and might be annotated with particular barriers addressed by the tools to derive an even sharper instrument.

In the workshop we would like to present our first findings from interviews, tool classification and theory mapping and discuss this with the other participants – to get additional input on our quest for practical guidelines for media choice.

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## Biographies

**Alexander Richter** is employed as research assistant at Cooperation Systems Center Munich since December 2006. He studied management & economics with a major in business informatics, system engineering and environmental & production management at the University of Augsburg and also at the University of Rennes I in the context of the double diploma course "French-German management" promoted by the French-German University. Mr. Richter was employed amongst others at DaimlerChrysler France, at KPMG, at Osyskom as well as at the chair for environmental and resources economics (Professor Dr. P. Michaelis) at the University of Augsburg. His main research focus is on new Internet technologies and their effects on Computer Supported Collaborative Work (CSCW).

**Michael Koch** has studied Informatics at TU München, and has received a doctorate (PhD) in Informatics from the same university. After some time in industry at the Xerox Research Centre Europe and some post-doctoral work at TU München he is now working as a full professor for applied informatics at Bundeswehr University Munich where he is leading the Cooperation Systems Center Munich (CSCM). His main interests in research and education are shaping cooperation systems, i.e. bringing collaboration technology to use in teams, communities and networks, and bringing integration and user interface technologies one step further to support this. He is chairman of the special interest group on Computer-Supported Cooperative Work in the German Computer Society (GI) and member of the boards of the special interest areas on Human Computer Interaction and Information Systems of the GI.

**Alexander Warta** studied computer and information science at the University of Konstanz and at the Université Paris-Est Marne-la-Vallée. Since 2005 he works as Ph.D. student at the Robert Bosch GmbH, Stuttgart, Germany, division Diesel Systems (<http://www.bosch.com/content/language2/html/3324.htm>). He is supervised by the chair of information science at the University of Konstanz ([http://www.inf-wiss.uni-konstanz.de/start\\_e.html](http://www.inf-wiss.uni-konstanz.de/start_e.html)). Main focus of his work is the adaption of collaborative knowledge

management environments - in particular wikis - in industrial enterprises and the quantification of collaboration.