

Interacting with Activity Streams

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Abstract

Whereas activity streams are intensively used in the Web 2.0, they are not well established in the context of enterprises, yet. The user centered activity stream concept has to be modified before it is efficiently usable for enterprises. Simple and effective information classification and filtering is essential for assessing specific pieces of information in enterprises. As soon as the first enthusiasm about enterprise 2.0 fades away, integration of existing business processes becomes a crucial part of usable activity streams. We achieved first research results so far which go along with several interview reports and analyses. In the future standardization could simplify the interaction with existing tools by the means of activity streams. We expect that the way how enterprises use specific tools will become even more important.

1 Vision

An activity stream is a well-described concept from the Web 2.0 which simplifies the information access (Böhringer et al. 2010; Conole et al. 2009; Mörl et al. 2011). Our vision in KEEK¹ is to adapt this concept to the requirements and needs of enterprise (Riemer et al. 2009), including direct information access, real time interaction, assessment of relevance and rich meta information. Communication, cooperation, collaboration and connection (Cook 2009) are crucial in enterprises because many problems can only be solved conjointly (Nestler et al. 2008). Therefore, we plan to support knowledge workers by an activity stream based, direct access to condensed information. Collaborative processes require intensive coordination, hence the new information has to be provided in a timely manner, ideally in real-time. Due to the overwhelming amount of available information, the ubiquitous availability of condensed information goes along with smart classification and filtering. This assessment of relevance takes the limited cognitive capacity of the employees into consideration.

¹ KEEK (**K**onzeption und **E**ntwicklung einer integrativen **E**chtzeit-**K**ollaborationsumgebung) is a research project which focuses on design and development of an integrated real-time collaboration environment to support innovate processes between small and medium-sized companies and their customers

An **activity stream is a user centered concept**, whereas the traditional CMS approaches are primarily content centered. In enterprises the activity stream is a medium which supports the collaboration between employees. From our perspective an activity stream is a tool that aggregates different types of information in a single, standardized view. The underlying mechanism of the activity stream is the iterative improvement of information quality. Once a user shares a piece of information, it is collated and presented to other users who enrich this piece of information iteratively. Consequently the activity stream is a way of visualizing the complete information life cycle: in the activity stream information is created, consumed, enhanced and removed.

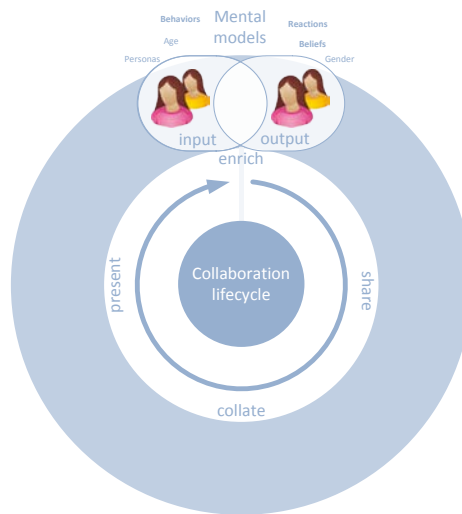


Figure 1: User centered activity stream

An **activity stream needs various functions** for creating, classifying and presenting the information. These functions include creation tools, information classifiers and visualization techniques. By using these tools various collaborative scenarios can be easily covered. Once an enterprise specific scenario is not covered in adequate depth and width, the toolset can easily be extended without changing the underlying stream concept. The design of the creation tools correlates with the semantic of the information. Classification of information is fundamental for enabling the user to efficiently access the required information. By adapting the information presentation to the scenario, an effective and enduring usage is facilitated.

The **integration of existing systems in the activity stream** is fundamental for the overall success of the concept. This integration leads to a quantitative reduction of information sources. As long as information from various sources is not well integrated, an activity stream is just an additional information source and information access becomes even more complicated. The user and his information needs are in the focus of the overall integration process – instead of the activity stream itself. Because of the users' need for information, information does never disappear finally. Various search and filter functions enable the user to access specific pieces of information from the vast amount of up-to-date and past information.

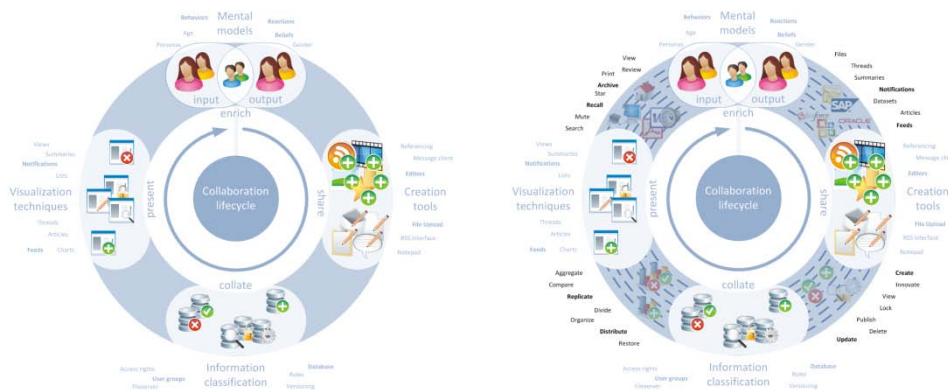


Figure 2: Integration of different functions to activity streams

2 First Achievements

The described vision is the focus of current research activities within the scope of the KEEK project. In close cooperation with the Universität der Bundeswehr first interviews have been conducted to structure the information architecture and to identify critical factors for success. Furthermore, typical usage scenarios of collaboration systems have been identified.

A cluster analysis of the information architecture showed that a collaboration system has to offer various functionalities. These functionalities can be clustered into the spaces searches, contacts, settings, messages, groups, feeds, events, photos, files, profiles and companies. The challenge is to support collaboration by integrating these different information clusters into one single activity stream in a consistent way.

At IntraWorlds we focus on the needs of our end-users. Our user-centered design process requires the early involvement of end-users in the shaping of our concepts (Abrams et al. 2004). User centered-design is a commonly used method to achieve a high usability – including utility, intuitiveness, memorability, learnability and satisfaction (Nestler et al. 2010). Mental models (according to Indi Young 2008) help us to deeply understand and analyze the behavior of employees. These analyses of human behavior are the basis for the future design and development of usable activity streams.

3 Discussion

We expect that various enterprise collaboration platforms will be launched in the near future. The range of solutions might become quite heterogeneous. Suppliers of specialized software applications for business processes might feel the need to integrate their solutions in these various platforms.

Integration of existing business processes into the activity stream will become crucial in the near future, as soon as the first enthusiasm about enterprise 2.0 fades away. Employees can only benefit from activity streams which are seamlessly integrated in the business processes at their enterprise. This integration will be not limited to the aggregation of information; additionally it will include tool specific interaction possibilities. The activity stream will transform to an **interaction stream** in the context of enterprise 2.0. In the future enterprises will not differ by the tools they use - but by the way how they use their tools. The more open the usage scenario becomes, the more ways to use the tool evolve. **Standardization** will help to make this integration possible for all existing platforms at affordable efforts. Furthermore standardization might help to facilitate collaboration between different enterprises – even if they use activity streams from different service providers.

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