

Forschungsprojektarbeit des Profils Computer Science

Enhancing Agile Team Collaboration - - through large multi-touch Displays and multi-modal Communication

Starting Position

Agile organization and collaboration methods have become mainstream in the IT domain. Many tools have been developed to support agile collaboration. Nonetheless, studies show, that many agile teams still also use physical cardboards for their daily work or suffer from tools not optimized for the agile workstyle. In an ongoing research project, we investigate into understanding what makes agile teams efficient and develop tools for agile teams to enhance their collaboration. One result is the agile collaboration platform *aWall*. *aWall* is optimized for supporting teams in their agile meetings using large multi-touch displays as digital boards. The system supports co-located as well as distributed teams. The current implementation supports the daily-standup meeting and Sprint planning 1. The system is realized as a web application on the front end, a REST-based data layer on the server side, and an integration of third-party issue tracker systems like JIRA. As a result of the work the spin-off *aTouch dynamics Ltd* was founded and is the industry partner in this project.

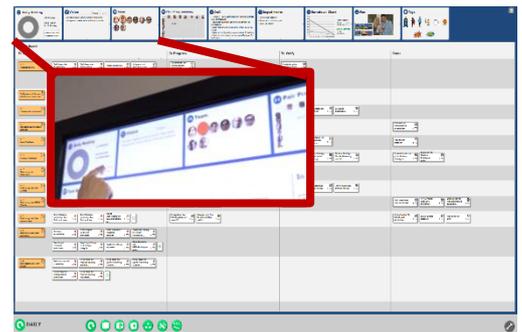


Goals

In the context of the master project we want to continue our research in understanding what makes agile teams efficient and effective and transform the results into tools to support the teams in their agile work. This includes the implementation of further meetings like Retrospectives, Sprint reviews, and enhancements for multi-project management.

Second, we want to analyse other aspects that influence team efficiency, like team mood, or team autonomy, and to enhance the system with corresponding capabilities.

Third, the system shall evolve to an actual *smart board* by adding data analytics features to support the team in improving its work process. Other open issues include collaborative resource planning, whiteboard integration, and new interaction approaches for data and text input on the board. Web technology in general and multi-touch technology is still a very fast-moving domain. New approaches and technologies are constantly appearing, which is an additional challenge. The developed concepts shall be published at conferences. Based on the results we want to enhance the system with new features to enhance overall team efficiency.



Used Technology / Required Skills:

Interest and/or good knowledge of web development

Used technologies: Angular, TypeScript, Web Sockets, Web RTC, REST, Python, interact.js, UI Design and UI Web Programming,

Others: In this project we cooperate with the Victoria University of Wellington, Wellington, New Zealand. If interested, an exchange might be arranged. Project language is English

Tasks for the Master student

The interested student can select from the wide range of challenges listed above according to his/her interest. Develop concepts, prototypes, implement solutions and validate them.

Study type: Fulltime
 Part time 50%

Project organisation: Single and/or in a project team possible

Work place: Windisch

Advisor: Prof. Martin Kropp

References: M. Kropp et al: Enhancing Agile Team Collaboration Through the Use of Large Digital Multi-Touch Cardwalls. In Proceedings of International Conference on Agile Software Development (XP), Cologne, Germany, [Springer LNBP](#). 2017