



Supporting the Understanding of Team Dynamics in Agile Software Development Through Computer-Aided Sprint Feedback

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DESCRIPTION:

While modern project management systems support teams during planning and development activities, primarily through performance-related process information, the equally relevant human factors are often insufficiently considered for explaining team dynamics (e.g., the affect of moods in teams). However, understanding team behavioral patterns are crucial for the accurate planning and steady execution of development tasks throughout an ongoing project.

A computer-aided feedback concept is described, unifying interdisciplinary foundations and methods from the software engineering, data science, organizational, and social psychology fields for disclosing team dynamics in agile software projects. The concept covers the systematic capture of sociotechnical data combined with descriptive, predictive, and exploratory model-based methods that support understanding behavioural changes during the development process. Design science from information systems research is used in academic and industrial case studies to conceptualize and operationalize the feedback methods into a practical Jira plugin.

A concluding evaluation through an action research method in two industrial software projects results in quantitative and qualitative findings regarding the feedback utilization and utility during agile development processes (e.g., team communication changes related to accomplished performances). The case studies underscore the practical relevance for systematic feedback and the need to better understand human factors in software projects.

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