

Mini-Track: Analytical Software Project Management

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Software project management deals with software projects and the challenges of human-based development (as opposed to the more deterministic processes in traditional projects). The higher flexibility in software development approaches puts new demands on the capabilities of software project management. Weaknesses in planning, organizing, staffing, directing, and controlling are hard to be counterbalanced by more efficiency in technical development work. As Fred Brooks stated “. . . today’s major problems with software development are not technical problems, but management problems” (Brooks 1987).

The principal nature of the challenges in software project management has not changed dramatically in the last 25 years. However, software-intensive systems of the twenty-first century increasingly vary in their content, size, complexity, and their degree of interaction with other systems. The technological and communication infrastructure to develop these systems is hard to compare with that available in the past. As a consequence, the concrete content of the project management challenges looks different from that of 25 years ago (Ruhe & Wohlin 2014).

Proper management of software project has been proven of pivotal importance for success. Predictive analytics based on a variety of information sources (project repositories, crowdsourcing, internet, intranet) is expected to gain new and real-time insight into the factors impacting software project success.

In this mini-track, we study research papers and experience reports that describe how analytical methods (including measurement, data analytics, reasoning, optimization, simulation) facilitate software

project management. In particular, the following topics are planned to be covered:

- Project management methods, tools and techniques for different paradigms of software development (from highly predictive to highly adaptive)
- Predictive analytics (effort, defects) and its usage for software project management
- Analytical methods in the context of the ten knowledge areas of software project management, in particular related to
 - Time management
 - Cost and effort management
 - Human resource management
 - Communications management
 - Risk management
- Project portfolio management
- Real-time decision-making
- Collaboration with the means of virtual teams and social networks
- Capture and reuse of project knowledge
- Dashboards and project intelligence
- Industrial case studies

References:

Brooks FP (1987) No silver bullet: Essence and accidents of software engineering. *IEEE Computer* 20(4):10–19
Ruhe G and Wohlin C (2014) *Software Project Management in a Changing World*. Springer