Systematic Literature Review on Agile Practices in Global Software Development

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Abstract.
Context: Developing software in distributed development environments exhibits coordination, control and communication challenges. Agile practices, which demand frequent communication and self-organization between remote sites, are increasingly found in global software development (GSD) to mitigate said challenges.

Objective: We aim to provide detailed insight into what is reported on the successful application of agile practices in GSD from 1999-2016 and also identify the most frequently applied agile practices and reported distribution scenarios. We further strive to uncover research opportunities and gaps in the field of agile GSD.

Method: We build our systematic literature review on top of a previous review, which investigated studies published between 1999 and 2009, and extend the review by years 2010-2016, for which we conduct both a quantitative and a qualitative analysis.

Results: Our results show that the majority of the cases studied is global and involves complex distribution scenarios with Scrum or combined Scrum/Extreme Programming being the most used agile methods. Key results include that in contrast to 1999-2009, where four Extreme Programming practices were among the ten most frequently used agile practices, in 2010-2016 Scrum is in the center of agile GSD implementations with eight Scrum-based practices in the top ten agile practices used in GSD.

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