

Empirical investigation of the challenges of the existing tools used in global software development projects

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Abstract: Global software development (GSD) is continuously increasing because of many factors such as high quality software production in offshore destinations with significant cost-savings. Objective – The objective of this study is to identify the challenges of the existing tools used in GSD projects. Method – The authors applied the systematic literature review (SLR) approach and a survey-based empirical study approach to address the research objective. Results – From both data sets, the authors identified eight challenges of the existing tools used in GSD projects. The top-ranked challenges in the SLR are the ‘inappropriate use of synchronous and asynchronous communication tools’ and ‘difficulties in adopting and learning to use the existing tools’. The top-ranked challenges in the questionnaire-based empirical study are the ‘lack of awareness of existing tools used in GSD projects’ and the ‘lack of support for collaboration and group decision making’. The results show a weak negative correlation between the ranks obtained from the SLR and the questionnaire-based empirical study ($(r_s(8) = -0.313)$, $p = 0.450$) Conclusion: GSD organisations should address the challenges of the existing tools used in GSD projects, especially the most common ones.