New study: Developers' skills and top management commitment lead to Agile project success

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Around the globe, software-intensive organizations shift from plan-based development processes to Agile ones, intending to focus more on team interaction, better products, customers' needs, and readiness to change.

But how do these organizations succeed with large-scale Agile software transformations—and how do the success factors relate? This has been discussed in the scientific community for several years. Now, Associate

Professor Daniel Russo from Department of Computer Science, Aalborg University presents a long-term study, which sheds even more light on the widespread phenomenon.

The study is accepted by the world-renowned journal *ACM Transactions on Software Engineering and Methodology* and has already generated attention from practitioners globally.

Not a shopping list

By combining a field study of a large-scale Agile transformation process at a notable Italian mission-critical organization with a survey of 190 screened software engineers, Russo has developed an Agile Success Model. In the model, the roles of the stakeholders are clarified, and according to the author, the hope is that practitioners planning an Agile transformation can use the model to gain a deeper understanding of such a process.

"It is essential to say that this is not a shopping list or a recipe on how to be a success. Instead, I see this as a tool for organizations, teams and managers, providing them with an overview of which factors they should primarily focus on when planning or running an Agile transformation," Russo says.

He highlights the fact that the study is a combination of both qualitative and quantitative analysis. After generating hypothesis in the field, these have been validated through a large scale of professionals who actually use Scrum.

No difference between social and technical skills

So, what are the most critical constructs to project success? According to

Russo, management should prioritize strengthening developers' skills.

"The failure or success of a software project highly relies on both the social and technical skills of the development team. There is no semantic difference between these set of skills. Being great at coding is not enough if you lack communication skills—and likewise, the other way around. This is a crucial consideration for hiring and setting up training programs."

At the same time, the roles of the middle management are of relatively smaller importance. Teams in Agile frameworks experience a relatively high degree of freedom to self-organize, and communication and collaboration are two pivotal activities in the groups.

Top management losses control

But the study also shows that providing an adequate organizational setting is even more critical for project success than just hiring socio-technically skilled developers:

"Project success mainly depends on the top management commitment. The top management has to welcome the fact that they will lose some degree of control over the development after the transformation," Russo says.

He points out that even though the field study was carried out among professionals who develop mission-critical software, the analysis shows that the model is non-domain specific and can be used in mission-critical and non-critical settings.

Meeting with Scrum.org

The results from Aalborg University supports the new direction of the Scrum Guide 2020, putting much more emphasis on the development side and downsizing middle management.

"The update of the guide was not performed following a scholarly investigation. In this perspective, our study is also a primary contribution to the practitioner's community by backing up the experience-based update of the most used Agile framework," says Russo.

 More information: The Agile Success Model: A Mixed Methods Study of a
Large-Scale Agile Transformation:
www.danielrusso.org/files/2021TOSEM_ASM.pdf

Provided by Aalborg University

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