Investigating Industry's Opinion on Technology Transfer in Software Engineering

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Abstract: In this talk, we report on our findings from the paper *An industry survey on approaches, success factors, and barriers for technology transfer in software engineering* [Da23], which has been published in the Journal *Software: Practice and Experience* in 2023.

Keywords: Technology Transfer; Industry Survey

1 Background on Technology Transfer in Software Engineering

In the past, multiple different approaches to technology transfer in software engineering have been proposed and investigated. In [Br18], we conducted a systematic literature review to assess the current state of the art. Therein, we identified the most commonly proposed approaches as well as success factors and barriers, which have been regularly reported in the relevant scientific software engineering literature. Popular approaches are, for instance, collaboration approaches, where technology transfer shall be reached by collaboration between academic and industry partners in joint projects, or education approaches where technology is either transferred by setting up in-house training programs or on the long term transfer by educating students during their studies. Commonly mentioned success factors and barriers are, e.g., the need to show maturity of the technology to be transferred, the need for empirical evidence that shows the approaches are provably beneficial, as well as organizational, communication, and social factors influencing the quality of the technology transfer.

2 A Survey of Industry Opinions on Technology Transfer in Software Engineering

In this paper, we surveyed industry professionals on their opinion on technology transfer. We interviewed industry professionals from seven companies on their attitudes towards

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technology transfer approaches, success factors for technology transfer and barriers to overcome. We quantitatively investigated industry professionals' approval of commonly suggested technology transfer approaches found in our literature study. Based on these findings, we conducted a qualitative analysis to answer the question of how a technology transfer process should look like from an industry perspective.

3 Survey Results

Results show a mismatch between industry participants' expectations in current and hypothetical ideal technology transfer processes, as shown in Fig. 1. For example, participants did not value the participation in academic studies, however strongly emphasized the need to conduct on-site pilot studies and desire evidence of the technology's benefit.

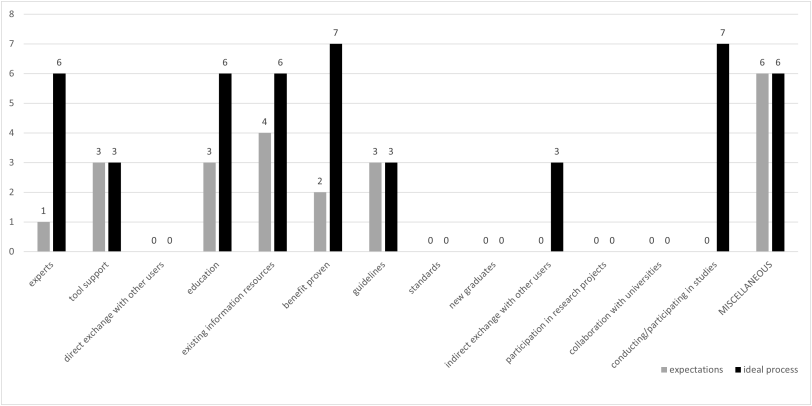

Fig. 1: Number of answers pertaining expectations and ideal process regarding survey items

Based on the survey results, we derived two approaches to define a technology transfer process that are in accordance with industry needs that can be selected depending on organizational circumstance, a knowledge-centric or a pilot-project-centric technology transfer process.

References

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