How to Succeed in Communicating Software Metrics in Organization?

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TREO Talk Paper

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Abstract

While software metrics are indispensable for quality assurance, using metrics in practice is complicated. Quality, productivity, speed, and efficiency are important factors to be considered in software development (Holmstrom et al. 2006; Svensson 2005). Measuring correct metrics and using them in the right and transparent way contributes to pushing development in a desirable direction, leading to achieving projected goals and outcomes (Staron and Meding 2018). On the other hand, tracking the wrong metrics, and failing to interpret and communicate them properly results in a stressful work environment, conflicts, distrust, lower engagement, and decreased productivity (de Sá Leitão Júnior 2018; Ellis et al. 1991; Staron 2012). To ensure proper and effective use of metrics in organizations, successful communication around metrics is essential (Lindström et al. 2021; Post et al. 2002; Staron and Meding 2015). The purpose of this study is to understand and improve communication about metrics in contexts of contemporary software development practice in organizations. This is achieved by identifying the bottlenecks in the process of communication around metrics and how to overcome them in practice.

Drawing on 38 semi-structured interviews and interactive workshops with metrics teams members and stakeholders from three organizations, we identify three interrelated challenges including limited knowledge about metrics and lack of terminology, uncoordinated use of multiple communication channels, and sensitivity of metrics, which influence workplace communication, trust, and performance.

Our study shows the importance of developing metrics terminology to ensure the development of a shared understanding of metrics. Further, raising awareness about the affordances such channels as dashboards, email, MS Teams meetings/chat, stand up meetings, reports, etc., commonly used in software organizations, and how they can be combined to successfully transfer information about metrics is essential (Verhulsdonck and Shah 2020). It becomes especially important in remote work practices. Finally, though metrics are a powerful tool for decision making, enhancing transparency, and steering development in the desired direction, they can also turn into finger-pointing, blaming, and a pressing tool, resulting in stress and conflicts (Streit and Pizka 2011). The findings also indicate the importance of creating a culture around metrics, clarifying, and informing about the purpose of metrics in the organization (Umarji and Seaman 2008).

We plan to build on the early findings of this study to develop a comprehensive framework for successful software metrics communication within organizations.

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