The next step in software metrics research

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ABSTRACT

Software project teams have a wide range of software metrics and measurement models at their disposal to monitor important aspects of their software system, their development process and the team itself. Theoretically, monitoring allows a team to identify and solve problems in a timely manner. Unfortunately, in practice software project teams make little effective use of software metrics to ensure success.

This gap between theory and practice does not exist because of a lack of research attention. In the past decades, dozens of software metrics and measurement models have been designed. However, their validation is usually limited to determining the construct validity of a metric. Although crucial, we believe that the time has come to travel beyond this type of validation and investigate the *usefulness* of a software metric in specific situations.

As a first step, we evaluated the usefulness of two metrics in an industrial evaluation setting [1]. A key request made by the interviewed practitioners was an overview of situations in which the metrics are useful and, more importantly, those situations in which they are not.

Within the software engineering community, a body of knowledge is often encoded into a catalog of patterns. Here, each pattern provides a definition of a software metric, its intended usage, its limitations and its relationships to other metrics. By creating such a common understanding of the benefits and limitations of software metrics, project teams will be able to choose and use software metrics more effectively, ultimately leading to more successful software projects.

BODY

To enable the effective application of software metrics, a pattern catalog based on real-world usage scenarios must be developed.

REFERENCES

[1] E. Bouwers, A. van Deursen, and J. Visser. Evaluating usefulness of software metrics: An industrial experience report. In *Proceedings of the 2013 International Conference on Software Engineering*, 2013.

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