

The Current State and Future of Model Driven Engineering in Open Source Projects

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Abstract. Modeling adoption in industry has remained significantly low. Numerous research has investigated reasons behind this low levels of adoption. More recent trends are exploring avenues that have the potential of significant adoption of modeling practices.

This workshop discusses the current status and future of Model Driven Engineering adoption, focusing on Open Source projects. The workshop also discusses some of the emerging trends that can positively influence modeling adoption by open source teams. The workshop consists of invited speakers and panel discussions.

Keywords: Open source, UML, Model Driven Engineering.

1. Introduction

We surveyed the 20 most active open source projects according to Ohloh [1]. In those projects, we found no evidence that modeling is being practice to any significant level. This phenomenon is evident across a vast majority of open source projects where the development practices remain almost entirely code centric.

Our own survey of the development practices in the software engineering community as a whole supports the wide spread of the code-centric phenomenon [2]. This is despite the wide spread acceptance of the value added of adopting more modeling practices in software development.

Reasons behind this phenomenon can be attributed to one or more of the following.

1. The existing coding paradigms work good enough and there is little incentives to change.
2. Risk averse from software development teams and management.
3. Modeling tools are too complex and the learning curve discourages adoption.
4. Models cannot be versioned and merged as effectively as merging code. The existing infrastructure is not designed to work with modeling artifacts.
5. Difficulties in round trip engineering. Particularly, changes to the code are difficult to refactor into models.

In this workshop, we bring notable experts in software modeling and open source practices to discuss the following points:

1. The current practices in open source community.
2. The use of modeling artifacts as documentation and for code generation.
3. Challenges and limitations in current modeling notations, tools and standards that impedes modeling adoption.
4. Emerging tools and practices that may enhance modeling adoption in open source projects.

2. Workshop objectives

One key objective of the workshop is to discuss and investigate the diverse nature of development practices in open source projects. Another objective is to introduce and discuss some of the emerging tools and standards that can positively impact modeling practices. For example, the emergence of web-based modeling tools may enhance collaboration amongst open source communities. Trends in the simplification of the UML standard pioneered by Object Management Group (OMG) may pave the way for light weight modeling tools that find adoption by the open source community. By understanding the state of the art of practice and identifying relevant trends and emerging tools, we expect the workshop to bring to light some insightful concepts and motivate research in this area.

3. Workshop structure

The workshop is divided in three parts. The first part focuses on current practices and empirical investigations of open source communities that are relevant to modeling practices. This part sets the stage for the second part that focuses on emerging trends and tools. This part also discusses how such trends may have a positive impact on open source practices and modeling adoption. The last part is a panel discussion consisting of the speakers and moderators. This part brings discussions to summarize the workshop discussions and addresses outstanding questions and comments during the previous two parts. The objective of this part is to identify key trends and tools, as well as key requirements, to enhance the modeling practices in open source projects.

Participants of the workshop are expected to build an understanding of the current modeling practices across different domains in the industry. Participants will also be introduced to some of the cutting edge and promising trends in modeling tools and practice. For example, cloud based modeling, collaborative modeling, and tools for enhancing the versioning and merging of models are presented.

4. References

- [1] Ohlo. " The Open Source Network", accessed 2013, <http://www.ohloh.net/>.
- [2] Forward, A., Badreddin, O. and Lethbridge, T. C. "Perceptions of Software Modeling: A Survey of Software Practitioners," in *5th Workshop from Code Centric to Model Centric: Evaluating the Effectiveness of MDD (C2M:EEMDD)*, 2010. Available: <http://www.esi.es/modelplex/c2m/papers.php>