

Second International Workshop on Web 2.0 for Software Engineering (Web2SE 2011)

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ABSTRACT

Social software is built around an “architecture of participation” where user data is aggregated as a side-effect of using Web 2.0 applications. Web 2.0 implies that processes and tools are socially open, and that content can be used in several different contexts. Web 2.0 tools and technologies support interactive information sharing, data interoperability and user centered design. For instance, wikis, blogs, tags and feeds help us organize, manage and categorize content in an informal and collaborative way. Some of these technologies have made their way into collaborative software development processes and development platforms. These processes and environments are just scratching the surface of what can be done by incorporating Web 2.0 approaches and technologies into collaborative software development. Web 2.0 opens up new opportunities for developers to form teams and collaborate, but it also comes with challenges for developers and researchers. Web2SE aims to improve our understanding of how Web 2.0, manifested in technologies such as mashups or dashboards, can change the culture of collaborative software development.

Categories and Subject Descriptors

D.2.9 [Software Engineering]: Management—*Programming teams*

General Terms

Human Factors, Management

Keywords

Web 2.0, process, tools, collaboration

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1. INTRODUCTION AND MOTIVATION

Web 2.0 [9] is both a usage paradigm and a technology paradigm that uses the Web as a platform. Web 2.0 focuses on services rather than packaged software, and on remixable data sources that harness collective intelligence. This has resulted in an “architecture of participation” that has altered how we implicitly and explicitly work and play together [10].

Web 2.0 technologies such as wikis, blogs, tags and feeds help us organize, manage and categorize web content in an informal and collaborative way [13]. Some of these technologies have made their way into collaborative software engineering processes and modern software development platforms [1].

One goal of Web2SE is to investigate how these Web 2.0 technologies can improve software development practices. However, as Ian Davis¹ puts it, Web 2.0 is more than just mere technologies, it is an attitude. Web 2.0 implies that processes and tools are socially open, and that content can be used in several different contexts. This workshop aims at improving our understanding of how this attitude, manifested in technologies such as mashups or dashboards, can change the culture of collaborative software development.

Since developers need informal tools in their work [6], research and industry have started to explore how Web 2.0 and the mechanisms associated with it can be adopted by software development. As these tools are brought into the mainstream, the tension of balancing support for formal engineering practices with the social informal aspects of teamwork becomes obvious. A key finding from the Computer Supported Cooperative Work (CSCW) research community is that tools that ignore emergent work practices and social aspects of a tool’s use frequently fail. Thus, a challenge for the software engineering tool community is to develop tools that support both aspects.

2. OBJECTIVES

Some Web 2.0 technologies such as wikis [7], facebook [3], blogs [11], social bookmarking [8], micro-blogging [4] and tagging [12] have already been adopted by software developers and by development environments. In addition, projects such as Mozilla’s web-based framework for code editing Sky-

¹<http://iand.posterous.com/2005/07/talis-web-20-and-all-that>

writer², and websites such as stackoverflow³, bring Web 2.0 into software development. At Web2SE 2010, the potential move of the IDE into the browser was one of the main discussion points [14]. One goal of Web2SE is to collect an **overview** of the latest developments with regard to the use of Web 2.0 technologies in software development.

We also explore **new opportunities** that Web 2.0 creates in software development. Web 2.0 enables new ways for developers to form teams to create software, to bypass traditional hierarchies of power in organizations and get ideas heard and acted upon from any organization member, to socialize and promote their ideas, and to use new forms of computation (such as Mechanical Turk⁴) to solve previously difficult, yet impactful problems [2].

Web 2.0 applications are increasingly data-driven and the key advantage of Internet applications is the extent to which users add their own data [10]. We investigate to which extent the “socially open” **attitude** of Web 2.0 applies to software development and how to balance the architecture of participation and individual productivity. A promising route uses data collection and analysis techniques from the field of *software repository mining* for recommending relevant bugs, developers, or artifacts that can be enriched with data provided by software engineers or collected from the way they interact with their development tools [5].

Another objective of Web2SE lies in the exploration of how Web 2.0 technologies can be incorporated into and adapted to software engineering **processes and methods**.

At Web2SE 2010 [14], we also discussed potential **risks** of using Web 2.0 in software development. Protecting the privacy and reputation of individuals participating in Web 2.0 systems and making sure that data stored in those systems has proper access restrictions is essential.

In addition, there are **challenges for researchers** who are studying the use of Web 2.0 in software development. Researchers, even when trying out prototypes, have a responsibility to ensure that tools are consistent with the values of the organizations in which they are deployed. Another challenge is given by the fact that it is practically impossible to create new social networks to test new tool ideas. We discuss ways in which researchers can create and evaluate new tools despite the difficulties of achieving wide-spread adoption that is essential to the success of Web 2.0 tools.

The themes of papers to be presented at Web2SE 2011 include documentation, twitter, wikis, status updates and user feedback in software development.

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²<http://mozillalabs.com/skywriter/>

³<http://stackoverflow.com/>

⁴<https://www.mturk.com/>

4. REFERENCES

- [1] N. Ahmadi, M. Jazayeri, F. Lelli, and S. Nestic. A survey of social software engineering. In *ASE Workshops '08: 23rd IEEE/ACM Intl. Conf. on Automated Software Engineering*, pages 1–12, Washington, DC, USA, 2008. IEEE.
- [2] A. Begel, R. DeLine, and T. Zimmermann. Social media for software engineering. In *Proc. of the FSE/SDP workshop on Future of software engineering research*, FoSER '10, pages 33–38, New York, NY, USA, 2010. ACM.
- [3] A. Begel, Y. P. Khoo, and T. Zimmermann. Codebook: Discovering and exploiting relationships in software repositories. In *Proc. of the 32nd ACM/IEEE International Conference on Software Engineering - Volume 1*, ICSE '10, pages 125–134, New York, NY, USA, 2010. ACM.
- [4] S. Black, R. Harrison, and M. Baldwin. A survey of social media use in software systems development. In *Proc. of the 1st Workshop on Web 2.0 for Software Engineering*, Web2SE '10, pages 1–5, New York, NY, USA, 2010. ACM.
- [5] M. Bruch, E. Bodden, M. Monperrus, and M. Mezini. Ide 2.0: collective intelligence in software development. In *Proc. of the FSE/SDP workshop on Future of software engineering research*, FoSER '10, pages 53–58, New York, NY, USA, 2010. ACM.
- [6] R. E. Kraut and L. A. Streeter. Coordination in software development. *Commun. of the ACM*, 38(3):69–81, 1995.
- [7] P. Louridas. Using wikis in software development. *IEEE Software*, 23(2):88–91, 2006.
- [8] D. R. Millen, J. Feinberg, and B. Kerr. Dogear: Social bookmarking in the enterprise. In *CHI '06: Proc. of the Conf. on Human Factors in computing systems*, pages 111–120, New York, NY, USA, 2006. ACM.
- [9] S. Murugesan. Understanding Web 2.0. *IT Professional*, 9(4):34–41, 2007.
- [10] T. O'Reilly. What is Web 2.0: Design patterns and business models for the next generation of software, 2005. <http://oreilly.com/web2/archive/what-is-web-20.html>.
- [11] S. Park and F. Maurer. The role of blogging in generating a software product vision. In *CHASE '09: Proc. of the ICSE Workshop on Cooperative and Human Aspects on Software Engineering*, pages 74–77, Washington, DC, USA, 2009. IEEE.
- [12] M.-A. Storey, J. Ryall, J. Singer, D. Myers, L.-T. Cheng, and M. Muller. How software developers use tagging to support reminding and refining. *IEEE Trans. on Software Engineering*, 35(4):470–483, 2009.
- [13] M.-A. Storey, C. Treude, A. van Deursen, and L.-T. Cheng. The impact of social media on software engineering practices and tools. In *Proc. of the FSE/SDP workshop on Future of software engineering research*, FoSER '10, pages 359–364, New York, NY, USA, 2010. ACM.
- [14] C. Treude, M.-A. Storey, K. Ehrlich, and A. van Deursen. Workshop report from Web2SE: First Workshop on Web 2.0 for Software Engineering. *SIGSOFT Softw. Eng. Notes*, 35:45–50, October 2010.