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**Via del Politecnico 1, 00133 Roma**

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## **The Technical Debt Metaphor: Principles, Strengths, Limits, and Tool Support**

**Abstract.** Technical debt is a metaphor introduced by Ward Cunningham in 1992 to help us think about a problem that is crippling many software endeavors. In his metaphor, doing things the “quick and dirty” way sets us up with a technical debt, which is similar to a financial debt. Like a financial debt, the technical debt incurs interest payments, which come in the form of the extra defects or the extra effort that we have to dedicate in future development because of this quick and dirty design choice. The metaphor saw little use for many years, but in parallel with the advent of agile methods gained large attention. The concept of technical debt proved to be useful, and large organizations (e.g., Cisco, Siemens, Lockheed Martin, etc.) have explicitly introduced it in some form or another in their software development process, as something to identify, value, and take into consideration while planning iterations and releases. In this talk I will describe the principles, strengths, and limits of the metaphor together with the available tool support.

**Bio.** Dr. Davide Falessi is currently an adjunct professor at the University of Maryland, the Multimedia Editor of IEEE Software, and a research scientist at the Measurement and Knowledge Management Division of Fraunhofer Center for Experimental Software Engineering in Maryland (CESE), a nonprofit research and tech transfer organization. His research interests focus on supporting and evaluating the application of scalable solutions to concrete software engineering problems, with a particular emphasis on requirements, architecture, and quality. Falessi is the first author of several papers in the most important software engineering journals including TSE, TOSEM, ESEJ, and IEEE Software. Falessi is currently a PC member of several international software engineering conferences including (only current year): ICSE - Software Engineering in Practice track, ESEC/FSE -Tool Demonstrations Track, XP, ESEM, WICSA, EASE, SEKE, ICSR, PROFES, and many others. Falessi is involved in the organization of several international software engineering events including (only current year): XP 2014, DAPSE 2014, and the Fifth International Workshop on Managing Technical Debt. Falessi holds a PhD, MSc, and BSc in computer engineering from the University of Rome, Tor Vergata, Italy.

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