

Managing Software Process Evolution

How to handle process change?

An edited book by
Marco Kuhrmann, Andreas Rausch, Jürgen Münch, Ita Richardson, and (Jason) He Zhang

Call for Book Chapters

- Web: <http://www4.in.tum.de/~kuhrmann/spmbook.shtml> -

Managing Software Process Evolution is an edited book, which will be published by Springer. The book focuses on the design, development, management, governance, and the application of evolving software processes that are aligned with changing business objectives, e.g., expansion to new domains or moving to global production. It addresses the whole life cycle of software processes, from initial definition to systematic improvement, in the context of evolving business.

The book will present standards, best practices and experiences from industry and academia as well as novel ideas, methodologies, and tools for designing, managing, improving, and enacting development processes.

Motivation

Many organizations need to transform their business to next levels. Therefore, in order to benefit from leading edge technologies, catch up with the digital transformation, and continuously innovate and renew business models, companies have to quickly adapt and change the ways they develop products and services. As software plays a central role in this transformation, the ways in which modern software is developed need to change accordingly. Another important driver for process evolution is the need to mitigate software risks. Basically, a considerable share of the current software risks is process-based. For example, several incidents could have been avoided with appropriate coding standards and tools. Although these standards and tools are widely available, they are not or not appropriately applied to many situations. Actually, this is a software process issue. Companies need to find ways to ensure that process models are properly defined and, furthermore, are appropriately applied while not hindering developers' creativity. For this, defining and deploying adequate software processes usually requires fostering the evolution of existing processes and their underlying models toward more suited ones.

Today, there exists a variety of software processes ranging from generic and domain-specific standards, from agile methods to comprehensive process-engineering frameworks. Since software processes may contain up to hundreds or thousands of elements, the management of a software process is a demanding task and, therefore, many companies install whole departments dealing with software process improvement and management. In practice, we can observe some interesting trends:

- Companies have defined development processes, e.g., to reach certain maturity levels or to pass audits.
- Development teams tend to apply agile methods while the hosting organization focuses on "classic" structured development processes.
- Implemented development processes in projects differ what has been defined.
- Evolving software technologies and platforms require a parallel evolution of software processes to accommodate the rapid changes.

One main reason for these gaps is different mindsets. For instance, program managers and quality assurance need planned and directed processes for certification, budgeting, and compliance. Developers need flexibility and processes to support creative work. Business managers need processes that allow for fast results and flexible feature delivery. Moreover, due to technology evolution, business evolves as well; emerging markets must be addressed, new technologies should be adopted, and globally distributed development becomes more and more important.

Submission Schedule

2014-09-01: 1st Submission (Proposal)
2014-11-01: Author Notification
2015-02-15: 2nd Submission (full chapter)
2015-05-15: Final Reviews
2015-07-31: Camera-ready Version
End 2015/Begin 2016 Book is published

Submission

All chapters (chapter proposals) must be submitted electronically using EasyChair:

<https://www.easychair.org/conferences/?conf=spm20150>

Editors

Marco Kuhrmann, kuhrmann@in.tum.de
Technische Universität München

Andreas Rausch
Technische Universität Clausthal

Jürgen Münch
University of Helsinki

Ita Richardson
University of Limerick/Lero

(Jason) He Zhang
Nanjing University

Beyond the big "global players", process evolution is also highly important for small and medium-sized companies. Such companies typically neither have comprehensive process models nor process engineering groups, and, thus, have to trust in a common understanding of principles and applied practices. However, these principles and practices need to be continuously validated against higher-level goals (such as business strategies) and potentially changed in order to secure the company a safe position in the market place. One example for such a change is the increasing focus on value-delivery based on deep customer insights. Regardless of the company size, a major challenge that companies face is to provide all stakeholders with flexible processes that:

- are driven by the needs of the different stakeholders,
- have clear links to higher-level goals of an organization,
- provide interfaces that are compatible with organizational structures,
- are supported by tools for modeling, enactment, analyses, and evolution,
- can be tailored to individual project goals and characteristics,
- offer adaptability and elasticity to accommodate and support technological and organizational innovations and evolutions.

Topics

The goal of the book is to collect and structure the state-of-the-art in software process design, management, governance, and enactment from the perspective of process evolution. The areas of interest are:

- Software process life cycle - its management and governance
- Process modeling languages and metamodels to allow for flexible software processes
- Software process construction and (situational) method engineering
- Software process lines
- Process customization and tailoring (on organization and project levels)
- Integrating structured processes and agile methods
- Software processes for global software development
- Tool support for software process analysis, design, editing and authoring, enactment, deployment, and (long-term) management and improvement
- Organizational change and software processes
- Psychological and soft factors in software process improvement
- Economic aspects of software process improvement
- Teaching and training of software processes
- Lessons learnt from empirical studies on software processes listed

Whom this book is for:

- Researchers and PhD students in the area of Software & Systems Engineering and Information Systems, who study advanced topics of organizing and managing (software development) projects, preparing organizations in terms of process improvements and process management
- Lecturers, students, and practitioners interested in the state-of-the-art process management
- Practitioners, consultants, and coaches involved in software process improvement projects

Submissions and Review

Contributions submitted for consideration have to present original work, should not have been published elsewhere, and should not be under review or submitted for review elsewhere. Extended versions of previously published publications should have at least 30% new content. We encourage authors to submit industrial case studies and best practices as well as novel and emerging ideas from current research.

Step 1: Interested authors must submit a chapter proposal, which consist of the title, the lists of authors, an extended abstract of 1-3 pages, and a tentative table of contents. Each proposal must refer to at least one of the topics, listed above.

All submissions will be evaluated according to the following criteria:

- Suitability of the proposed chapter into the overall book and the other chapters
- Novelty of the contribution
- Quality of the presentation
- Previous work of the authors on related topics

All submissions will be reviewed according to the referring procedures for Springer publications. Authors of submitted papers will be expected to also review other submissions.

Step 2: Authors of selected proposals will be invited to submit a full version of their chapters. All contributions must be in English with a maximum length of 25 pages using the Springer format (including all figures, tables, and references).