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Giulio Concas
Ernesto Damiani
Marco Scotto
Giancarlo Succi (Eds.)

Agile Processes in Software Engineering and Extreme Programming

8th International Conference, XP 2007
Como, Italy, June 2007
Proceedings



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Preface

“The Program Committee of XP 2000 invites you to participate in this meeting of software development researchers, professionals, educators, managers, and students. The conference brings together people from industry and academia to share experiences and ideas and to provide an archival source for important papers on flexible process-related topics. The conference is also meant to provide information and education to practitioners, to identify directions for further research, and to be an ongoing platform for technology transfer.”

This was the goal of the 1st XP 2000 Conference. The Organizing Committee expected around 60 people to attend, and they got 160. The subsequent conferences were held again in Sardinia and then all over Europe, maintaining the position of a leading world event on the topics of agility in software and system development. Now the International Conference on Agile Processes in Software Engineering and eXtreme Programming, XP 2007, is in its eighth edition.

During these years, the agile approach has become mainstream in the software industry. It is able to produce business value early in the project lifetime and to successfully deal with changing requirements. It focuses on the delivery of running, tested versions of the system at a constant pace, featuring a continuous interaction with customers, and paying extreme attention to the human component of software development. The rapidly growing scientific and practical evidence shows many quality gains, including increased productivity, fewer defects, and increased customer satisfaction.

The conference brings together both industrial practitioners and researchers. It is based not only on paper presentation, but also on workshops, tutorials, satellite symposia, such as the PhD Symposium, and activity sessions. These dynamic and interactive activities are the peculiarity of the Conferences on Agile Processes in Software Engineering and eXtreme Programming.

The topics of interest in the conference stress practical applications and implications of agile methodologies, with a particular focus on new openings, domains, and insights. They include theoretical, organizational, and practical aspects. Among the first, we may quote:

- Foundations and rationale for agile methods
- Digital ecosystems and agility
- Tailoring and building of agile processes
- Metrics, automated metrics, and analysis

Among the organizational aspects, both firm organization and team organization are covered. The former aspects include:

- Organizational change, management, and organizational issues
- Combining or streamlining the business processes and agile SW development
- Business agility

- Commitment, motivation, and culture in an agile SW development organization
- Contracting processes and issues, including subcontracting

Team organizational aspects include:

- Case studies, empirical experiments, and practitioners' experience reports
- Education and training
- Agile development on a large scale including scalability issues

Practical aspects covered by the conference are:

- Combining industry quality standards (e.g., CMMI) and agile approaches
- Experimenting with agile practices: pair programming, test-first design, continuous integration, refactoring, etc.
- Agile software development tools and environments
- Agile development of open source software
- Agile offshore and distributed development
- Embedded software (e.g., SW/HW co-design) and agile SW development

Forty-five papers were submitted to this year's conference. These papers went through a rigorous reviewing process, and only ten were accepted as full papers. We received 35 experience reports and research ideas, among which 20 were accepted for inclusion in this book as short reports. Many proposals were also submitted: 34 workshops, 35 tutorials, and 5 panels.

Overall, we believe that this book includes many rigorous, detailed and sound papers, able to give insights into the current state of the art of agile methodologies, and into its forecasted developments in the near future. Finally, on behalf of all members of the Organizing Committee, we would like to thank all authors of submitted papers, experience reports, research ideas, tutorials, workshops, panels, activities, papers to the PhD Symposium and all invited speakers for their contributions, our sponsors, all members of the Program Committee as well as other reviewers for their careful, critical, and thoughtful reviews, and all others involved in helping to make XP 2007 a success.

April 2007

Giulio Concas
Ernesto Damiani
Marco Scotto
Giancarlo Succi

Organization

XP 2007 was organized by research units of the MAPS (Agile Methodologies for Software Production) project: the Free University of Bolzano-Bozen, the University of Cagliari, CRS4 (Center for Advanced Studies, Research and Development in Sardinia), and the University of Milan.

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Comparing Decision Making in Agile and Non-agile Software Organizations

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Abstract. Our ability to improve decision making in software development hinges on understanding how decisions are made, and which approaches to decision making are better than others. However, as of yet there are few studies examining how software developers make decisions in software design, especially studies that place agile approaches in the context of decision making. In this paper, we present results of a multi-case study of design decision making in three software organizations of varying levels of agility. We show an agile organization produced a culture that supported communication and debate about alternatives to design decision more than 2 organizations of lesser agility.

Keywords: Consequential Choice, Serial Evaluation.

1 Introduction

We present an emergent multi-case study in which we compare the use of consequential choice [11, 12] and serial evaluation [9] in three small software organizations of varying levels of agility. Consequential choice is defined as the *concurrent* comparison and trade-off evaluation of more than one option in a decision [11, 12]. Serial evaluation is the *sequential* evaluation of options (n.b. no tradeoff evaluation and no concurrency) in a decision [9]. The results of our observations strongly suggest that small agile environments lead to more use of consequential choice (rather than serial evaluation) than small non-agile environments. This was a surprising result because consequential choice is rooted in “rational” approaches to decision making, typical of operations research, economic theory, and other seemingly “non-agile” fields of study. Our results show an agile environment was implicitly able to foster rational design decisions by emphasizing direct collaboration.

We conducted this study to continue learning how design decisions are made in software development. It is a relatively unexamined topic, despite recognition of its importance [1, 4, 8, 14, 18]. We also conducted this study to determine if agile methods were beneficial or detrimental to decision making, a question that has not been addressed empirically in the agile literature, to the best of our knowledge.

We present background work in Section 2 and describe our empirical study in Section 3. Results are presented in Section 4 and validity is described in Section 5. In Section 6, we conclude this work.