The Sixth International Workshop on Economics-Driven Software Engineering Research (EDSER-6)

http://www.EDSER.org

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1. Theme and Goals

Traditionally, the study of software engineering has been primarily a technical endeavor with minimal attention given to its economic context. Design and implementation methods are proposed based on technical merits without making adequate links to economic considerations. Engineering seeks to create value relative to resources invested in a given context, whether commercial or not. Software development essentially is an irreversible capital investment and software should add value to the organization just as any other capital expenditure that creates a net benefit.

The software engineering research community has not yet met the needs of the software engineering industry because it has been largely unable to characterize the economic nature or consequences of engineering decisions. Increasingly, software engineers in organizations whose very existence is dependent upon the profitability of their software find themselves poorly equipped to make technical decisions that have significant but poorly understood economic consequences.

Other disciplines, such as decision theory, game theory, and economics, have highly relevant conceptual and well-established ideas that have the potential to contribute to the foundations of software engineering, but the typical software engineer seldom encounters this work. By viewing the software product as an economic artifact as opposed to a strictly technical one, we find that much of this research from other fields has the potential to contribute to concepts, tools and methods that align with the software industry's needs. An interdisciplinary approach that seeks to infuse traditional software engineering with the concepts, models, tools, and underlying philosophies of such theory and practice promises to help advance the *technical* discipline of software design and engineering.

Earlier EDSER workshops have shown that software engineering research and practice is starting to benefit from this cross-pollination. These workshops identified a wealth of applications, ranging from software process, quality, project management and contract management to architecture, reuse, prototyping, rapid development, and security.

The goals of the EDSER Workshop series are:

- to raise the visibility of economics-based methods within software engineering,
- to define the boundaries of the field,
- to explore the ramifications of value concerns on development decisions,
- to pursue an agenda for basic, long-term research in economics-driven software engineering,
- to exchange case studies,
- to attract more interest from industry,
- to discuss early results,
- to decide on promising future directions, and
- to mentor and develop students.

EDSER Workshops have resulted in a significant network of researchers active in economics-based software engineering research. The objectives of EDSER-6 are both to sustain and reinforce the intellectual momentum that the first five workshops that has been created. We

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also hope to continue to bridge the gap between research and industry application of economic-based software engineering. Starting with EDSER-4, the community began creating instructional units that educators could integrate into software engineering curriculums. EDSER-6 will continue to develop and broaden these core instructional units. The CourseForges website (http://seg.iit.nrc.ca/yawc/courseforges/public/wiki.cgi) currently hosts more than a dozen educational units on software engineering economics, thanks to contributions from the EDSER community and pioneering efforts of the Steering Committee member Mary Shaw.

2. Format and Activities

The EDSER-6 Workshop was composed of invited presentations by Michael Cusumano from MIT/Sloan School of Management and Kevin Sullivan from the University of Virginia. EDSER-6 also continued the successful activity started in EDSER-5 by having short student papers on new ideas and work in progress presented during a plenary session. To help the students improve their work, supportive feedback was provided to the students by leading researchers in the field who attended the EDSER-6 workshop. The rest of the workshop was conducted in a matrix breakout format to tackle important topics in the field.

The main theme of these discussions was to address software engineering decisions that can benefit from economic reasoning. This theme was discussed along two dimensions. The first was distinguishing among process, business, product, and engineering decisions. The second was distinguishing between either strategic or operational aspects or among different application areas or methods used. These discussions leveraged off of previous EDSER proceedings and relevant literature.

The outcome of the workshop will be a compendium of the submitted papers and a workshop report summarizing the results of the breakout sessions.

3. Organizing Committee (Co-Chairs)

The workshop organizers are

- Hakan Erdogmus, National Research Council, Canada;
- Michael A. Cusumano, Massachusetts Institute of Technology, USA;
- Jyrki Kontio, Helsinki University of Technology, Finland; and
- David Raffo, Portland State University, USA.

4. Steering Committee

The workshop is supported by the EDSER steering committee, whose members are

- Barry Boehm, University of Southern California, USA;
- Hakan Erdogmus, National Research Council, Canada;
- Warren Harrison, Portland State University, USA;
- David Notkin, University of Washington, USA;
- Mary Shaw, Carnegie Mellon University, USA; and
- Kevin Sullivan, University of Virginia, USA.

5. Further Information

Further information about EDSER-6 and all previous EDSER Workshops may be found at the following Web site:

http://www.EDSER.org