Software Process Improvement
Comes of Age

Editorial Preface
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The topic of this Special Issue of the Journal of End User Computing, Software Process Improvement, has become highly visible over the past several years. Because this topic can only be effectively addressed by blending people, process and technology issues, it has provided a rich field for both conceptual and practical research in industry and academe. Industry practitioners are searching for better models of quality software development. Academic researchers are initiating rigorous streams of process-related field research. The Software Engineering Institute (SEI) at Carnegie Mellon University, as they continue to develop and integrate maturity models and frameworks, has established strong linkages with both industry and academe to complement their respective activities in this area.

Leading conferences now feature regular tracks, minitracks, and sessions dedicated to the topic of Software Process Improvement. These conferences include the Information Management Resources Association (IRMA) International Conference, the Association for Information Systems (AIS) Americas Conference on Information Systems, the Portland International Conference on the Management of Engineering Technology (PICMET), and the Hawaii International Conference on System Sciences (HICSS) to name but a few. I and my colleagues at American University in Washington, D.C. have been heavily involved in all of these conferences and invite inquiries related to continued development of the software process improvement tracks and sessions at these conferences.

The topic of software process improvement is also finding its way more strongly into university curriculums. For example, the American University Computer Science and Information Systems graduate curriculum now includes electives on Software Process Improvement and Personal Software Process. These courses provide the foundation for a new graduate certificate program focused in this area.

Another sign of the growing relevance of this topic is the appearance of several new books addressing different industry and research views of this topic. Two of these current books, Cultivating Successful Software Development: A Practitioner’s by Donaldson and Siegel and Successful Software Process Improvement provide specific industry viewpoints of software process improvement efforts. Both books are reviewed in this special issue.

The articles in this special issue constitute additional evidence of the importance of this topic. These articles reflect different aspects and views of the topics that are indicative of the wide range of thought and research currently underway in this area. Many earlier conference and journal articles have discussed the application of SEI maturity models to various enterprises. These ar-
Articles can be regarded as the first tier of research in this area. The second tier of research now seems to be appearing. These articles address significant issues that persist even when improved models and frameworks are applied in software development environments. The articles in this special issue represent some important work in this area.

Risk Management is a critical component of successful software project management and has acknowledged as such by the SEI in their Software Capability Maturity Model (SW-CMM) and in their Risk management Program. Implementing these risk management models and practices, however, is often difficult in organizations because of communication problems with relevant stakeholders. Jill Slater and David McComb address this situation in their paper, “Communicating Project Drift Through Cost/Benefit Scenarios.” In this paper they present a communication mechanism based on cost/benefit analysis diagramming conventions that can be used to explain “project drift” to stakeholders. In this manner, project risk can better be identified, controlled and mitigated.

Peter D.C. Bennetts, A. Trevor Wood-Harper and Stella Mills in their paper entitled “The Soft System Methodology as a Framework for Software Process Improvement” present a method for addressing issues not adequately covered by traditional systems engineering and software process improvement approaches. These issues and the resulting methodology are centered on social, organizational and learning activities with particular recognition on their emergent properties, i.e., these contexts are not fixed but evolving and liable to change on an unpredictable basis. Their paper proposes a recursive soft systems methodology to more effectively address these non-technical issues.

The SW-CMM developed by the SEI has perhaps received more attention than any other area of software process improvement. What is often forgotten by practitioners and academics alike, however, is that this model is not comprehensive (nor is it meant to be) and thus, cannot by itself provide all the guidance a software development organization needs to effectively implement improvements. Russell L. Purvis, Jose Santiago and V. Sambamurthy in their paper, “An Analysis of Excluded IS Processes in the Capability Maturity Model and Their Potential Impact” address this situation. Their paper assesses which IS functions are excluded by the SW-CMM by comparing it to an earlier, more comprehensive model, The Information Systems Management Architecture developed by IBM. The comparison of models is followed by a discussion of the potential ramifications of widespread use of a model with a relatively narrow focus.

In summary, these three articles represent some important ideas and current work in the area of software process improvement. They are indicative of a much larger body of high-quality work that is surfaced in journals, conferences and books throughout the IS discipline as this topic matures and provides rich avenues of research for academics and industry practitioners alike.

Please feel free to contact me with feedback on this special issue as well as for information on other software process improvement research and paper opportunities.

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