

Addressing the Challenges of Software Industry Globalization: The Workshop on Global Software Development

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Abstract

The goal of this workshop is to provide an opportunity for researchers and industry practitioners to explore both the state-of-the-art and the state-of-the-practice in global software development (GSD).

Increased globalization of software development creates software engineering challenges due to the impact of temporal, geographical and cultural differences, and requires development of techniques and technologies to address these issues. The workshop will foster interaction between practitioners and researchers and help grow a community of interest in this area. Practitioners experiencing challenges in GSD will share their concerns and successful solutions and learn from research about current investigations. Researchers addressing GSD will gain a better understanding of the key issues facing practitioners and share their work in progress with others in the field.

1. Workshop description

This workshop is a continuation of the last five ICSE workshops on the same topic (1998-2002; [1-5]). Last year [5], after changing the title from the technology-focused “Software Engineering over the Internet” to the more general “Global Software Development”, we observed increased participation by practitioners and more fruitful discussions between industry and academia. The report summarizing the workshop [5] discusses the challenges of engineering software in geographically distributed settings and indicates that further research needs to equally address issues of technical and social nature in global software development.

Global software development has been and continues to be a phenomenon fueled by factors such as access to a large and specialized labor pool, reduction in development costs, global presence and proximity to the customers. While we are witnessing reports of successful global teams, research reveals that distance contributes to heightened complexity in organizational processes. Primarily, processes of communication, coordination and control are affected by distance, with direct consequences on how software is defined, constructed, tested and delivered to customers, as well as how its development is managed. Further, cultural issues are possibly a most confusing and interesting feature of global teams. Members with diverse attitudes towards hierarchy, time

management and risk avoidance come to work together in cross-functional teams.

These are only some of the factors that bring challenges to managing software projects developed in geographically distributed structures. Understanding the intricacies of this complex phenomenon is critical in framing research directions that aim at improving global software development practice. There is a need for tools and techniques that not only improve development processes but also address organizational and social issues in global software development. The previous workshops represented one more step in identifying and understanding issues in the complex phenomenon of global software development. In particular, the empirical evidence and discussions during the workshop last year indicate that technology is only a small part of enabling effective global teams; there is a strong need to address the study and practice of global software development from a multidisciplinary perspective, in which issues of social nature are as important as those of technical nature.

In this workshop we intend to continue fostering fruitful interactions between industry practitioners and researchers and help grow a community of interest in this area. Industry practitioners experiencing challenges in GSD will be encouraged to share their own solutions and learn from research about current investigations in this area. Researchers addressing GSD will have the opportunity to gain a better understanding of the key issues facing industry practitioners and share their work in progress with others in the field.

2. Workshop themes

The workshop solicits papers on topics that include, but are not limited to:

- Empirical evaluations of effectiveness of global software projects
- Technologies & tools for distributed development environments
- Software engineering methodologies & processes for GSD
- Communication, collaboration, and knowledge management in distributed organizations

3. Workshop format

This workshop will focus on identifying issues of Global Software Development, sharing solutions, and brainstorming new approaches to those issues. The workshop is open to all participants interested in the topic; position papers or technical papers, though encouraged, are not required for attendance.

The “issues” part of the workshop will be dedicated to identifying, classifying, and categorizing Global Software Development issues that have been raised in previous literature, described in the position papers, and gathered during GSD 2002. To help focus the afternoon discussion, we will create some GSD scenarios that typify key issues. Throughout the workshop, participants can propose additional issues to be discussed at the end of the day.

The “solutions” part of the workshop will study existing techniques and methods for Global Software development. Selected authors of accepted technical papers will deliver very short presentations on their technological solutions or methodological approaches. Both existing and proposed technology will be assessed from a technical consistency perspective and evaluated for industrial applicability and feasibility. We will encourage each technical presenter to discuss how his or her ideas address or relate to the problems illustrated in the scenarios. The presentations will include a small amount of time for audience discussion of each set of presentations, hopefully allowing the group both to better understand the ideas and to relate them to other presentations and to the workshop themes.

The final part of the workshop will be a plenary discussion aimed at finding synergies between solutions, where crossover work can lead to advances that might otherwise go unexplored, and identifying opportunities for further work. At the end of the day, we will integrate and present the results of the discussion. The workshop will lead to a list of issues discussed, solutions proposed, conclusions reached, disagreements identified, and topics to be researched further.

All accepted papers will be published in both the workshop proceedings and on the workshop website at: <http://gsd2003.cs.uvic.ca>

4. About the organizers

Daniela Damian is an Assistant Professor at the University of Victoria, BC, Canada. She is a Killam Scholar in Canada and the recipient of the Best Paper Award at the International Conference on Requirements Engineering 2000. Daniela was the primary contact and co-organizer of the Workshop on Global Software Development (2002) and acted as a Member of Program Committee of the Australian Workshop on Requirements Engineering, 2000, 2001 and 2002, as well as the Time-Constrained Requirements Engineering Workshop at the Int'l Conf. on Requirements Engineering '02.

Filippo Lanubile is an Associate Professor at the University of Bari, Italy. While at University of Maryland (1995-1997) he was a recipient of the NASA Group Achievement Award (1996). On 2002, he was a program committee member for the Workshop on Global Software Development and the Workshop on Cooperative Support for Distributed Software Engineering Processes. In the last years he was also a member of the program committees of METRICS and ICSM. In 1997, he organized the Int. Workshop on Empirical Studies of Software Maintenance.

Heather Oppenheimer is a Distinguished Member of Technical Staff at Bell Laboratories, USA with 17 years of industry experience in software engineering. She has managed groups responsible for system test, process & quality engineering, and internet & collaborative development environments as well as all other aspects of the development life cycle. She currently leads a corporate software best practices initiative, develops and instructs internal courses in software architecture for systems engineers and for managers of development teams and leads software architecture reviews and project management audits throughout the Lucent Technologies global organization. She was a program committee member for the Workshop on Global Software Development (2002).

References

- [1]. First Workshop on “Software Engineering over the Internet”, online proceedings: <http://sern.ualgary.ca/~maurer/ICSE98WS/ICSE98WS.html>
- [2]. Second Workshop on “Software Engineering over the Internet”, online proceedings: <http://sern.ualgary.ca/~maurer/ICSE98WS/ICSE99WS.html>
- [3]. Third Workshop on “Software Engineering over the Internet”, online proceedings: <http://sern.ualgary.ca/~maurer/ICSE98WS/ICSE2000WS.html>
- [4]. Fourth Workshop on “Software Engineering over the Internet”, online proceedings: <http://sern.ualgary.ca/~maurer/ICSE98WS/ICSE2001WS.html>
- [5]. International Workshop on Global Software Development, online proceedings at: <http://www.cis.ohio-state.edu/~nsridhar/ICSE02/GSD>