

# Interplay between Usability Evaluation and Software Development (I-USED 2009)

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**Abstract.** This workshop is aimed at bringing together researchers and practitioners from the Human-Computer Interaction (HCI) and Software Engineering (SE) fields to determine the state-of-the-art in the interplay between usability evaluation and software development and to generate ideas for new and improved relations between these activities. The aim is to base the determination of the current state on empirical studies. Presentations of new ideas on how to improve the interplay between HCI & SE to the design of usable software systems should also be based on empirical studies.

**Keywords:** software development, user interface development, usability assessment, usability evaluation methods, empirical studies.

## 1 Introduction

Software development is highly challenging. Despite many significant successes, several software development projects fail completely or produce software with serious limitations, including (1) lack of usefulness, i.e. the system does not adequately support the core tasks of the user, (2) unsuitable designs of user interactions and interfaces, (3) lack of productivity gains or even reduced productivity despite heavy investments in information technology [2] [6] [5].

Broadly speaking, two approaches have been taken to address these limitations. The first approach is to employ evaluation activities in a software development project in order to determine and improve the usability of the software, i.e. the effectiveness, efficiency and satisfaction with which users achieve their goals [3]. To help software developers' work with usability within this approach, more than 20 years of research in Human-Computer Interaction (HCI) has created and compared techniques for evaluating usability. The second approach is based on the significant advances in techniques and methodologies for User Interface (UI) design that have been achieved in the last decades (e.g., participatory design and user-centered design).

However, the Software Engineering (SE) community has recognized that usability does not only affect the design of user interfaces but the software system development as a whole. Specifically, efforts are focused on explaining the implications of usability for requirements gathering [4], software architecture design [1], and the selection of software components [7].

The interplay between these two fields, and between the activities they advocate to be undertaken in software development, have been limited. Integrating usability evaluation at relevant points in software development with successful and to-the-point results has proved difficult. Research in HCI and SE has been done mainly independently of each other with no in substantial exchange of results and sparse efforts to combine the techniques of the two approaches. As a result, the state of industry practice is still quite immature and even in some cases the basic principles and currently available Usability Evaluation Methods (UEMs) are not understood.

The goal of the second edition of the workshop is to bring together researchers and practitioners from the HCI and SE fields to determine the state-of-the-art in the interplay between usability evaluation and software development and to generate ideas for new and improved relations between these activities. The aim is to base the determination of the current state on empirical studies. Within this focus, topics of discussion include, but are not limited to:

- Which artifacts of software development are useful as the basis for usability evaluations?
- How do the specific artifacts obtained during software development influence the techniques that are relevant for the usability evaluation?
- In which forms are the results of usability evaluations supplied back into software development (including the UI design)?
- Do existing UEMs deliver the results that are needed in user interface design?
- How can usability evaluation be integrated more directly in UI design?
- How can UEMs be applied in emerging techniques for UI design?
- How can usability evaluation methods be integrated to novel approaches for software development (e.g., model-driven development, agile development).

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