Editorial Preface:
Special Issue on Integrating Usability in the Web Development Process

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Welcome to the special issue on Integrating Usability in the Web Development Process. System usability is defined as the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use. Usability is regarded as one of the aspects of software quality, and as such it can be described alternatively as “quality in use”. Since usability is only defined within a certain context of use, we can deduce that it cannot be considered as an inherent attribute of a product, but it has to be studied by studying the users themselves.

Ease of use has long been a major concern within software development and the industry has realized that in order to achieve such a quality, a user-centered approach is needed. However, User-Centered Design (UCD) constitutes a considerable paradigm shift in the development process and this has hindered the adoption of UCD methods. Thus, it is fairly recently that more systematic approaches have been considered and efforts have been made to integrate such methods in the software development process. Moreover, the proliferation of the World Wide Web has increased the need for developing usable systems, since the designers have to cater for a much more diversified user base. In addition, the Internet has lead to an increase in the number of people that develop software and has shrunk the amount of time from the inception of an idea to its development as an application and its deployment to the market. Advances in ICT have complicated modern applications and their interfaces, making them harder to use. As a consequence of all the above, a considerable lack of usability can be observed in the Web today, despite the fact that the importance of the concept has been widely acknowledged.

Since usability, and Human-Computer Interaction (HCI) in general, has to study the users of computer systems, researchers and practitioners have traditionally drawn upon principles from a wide range of scientific fields in order to devise effective UCD methods. Apart from computer science, such fields include cognitive psychology, social psychology, ergonomics, linguistics, philosophy, anthropology, industrial design etc. In addition, several theoretical approaches are being adapted from these disciplines to computer science in order to give insights on the design of the interaction between computers and their users.

Usability methods for the web, that is methods that enable or facilitate the development of usable systems for the web, can be classified as inquiry, prototyping, inspection and testing methods. Usability methods can provide complementary results, and thus it is important to examine the ways that these methods can be combined and integrated in the development process, in order to achieve increased efficiency. Providing an holistic approach to web usability methods, would allow all the stakeholders involved to obtain a better understanding of usability in the context of the development process for the web.

The articles included in this special issue stem from the book “Integrating Usability Engineering for Designing the Web Experience: Methodologies and Principles” edited by Tasos Spiliotopoulos, Panagiota Papadopoulou, Drakoulis Martakos and Georgios Kouroupetroglou. The aim of the publication was to gather a significant volume of research in the interdisciplinary field of web usability, in order to provide a deeper understanding of the scientific principles in the field and to investigate their application in web design. The book was very successful in bringing together academics and researchers in the area of computer science and the complementary to HCI disciplines with web practitioners and usability experts.
in order to provide a link between theoretical research and web engineering and to present a more holistic approach to web usability.

“Integrating Usability Engineering for Designing the Web Experience: Methodologies and Principles” focuses on the integration of usability in the web development process by investigating significant issues of the state-of-the-art in web usability engineering. Towards this end, it provides useful insights on the selection, application and combination of usability methods when developing for the web, by following an interdisciplinary approach and taking into account particular characteristics in the web development process, such as web accessibility, management of information systems and technical challenges. The chapters of the highest quality were selected for this special issue based on the peer review process results, the editorial team reviews and the insightful recommendations of our Editorial Advisory Board. This special issue is organized as follows.

The first article, entitled “Whose questionnaire is it, anyway?” is written by Andrew Saxon, Shane Walker and David Prytherch, who provide a much needed social scientist’s view on evaluative methodologies for web software. The authors examine two different example methodologies for addressing the psychological needs of the users, the Motivation Systems Theory and the Repertory Grid Technique.

Authored by Mikael B. Skov and Jan Stage, the second article addresses “A Conceptual Tool for Usability Problem Identification in Website Development”. In this article, the authors propose to facilitate the integration of usability in the web development process by enabling website developers without formal training in human-computer interaction to conduct their own usability evaluations. The authors’ own experiences and results from such usability evaluations are presented, where they employed a simple tool that has been developed to support identification of usability problems.

The third article, “Social Research Methods Used in Moving the Traditional Usability Approach Towards a User-Centered Design Approach” is written by Horia D. Pitariu, Daniela M. Andrei and Adriana M. Guran. This article provides a social scientist’s perspective on usability, portraying web usability as deriving from the quality of interactions between humans, their work and the web design product. The authors discuss the design models that can support usability and argue on the importance of using social research tools for a better understanding of the people and their needs starting with the very first stage of design. They describe user needs analysis methods and provide guidelines in preparing and using these methods. Finally they demonstrate the use of these methods in user needs analysis through two empirical studies.

The fourth article is dedicated to “Integrating Accessibility Evaluation into Web Engineering Processes”. In this work, Christopher Power, André Pimenta Freire and Helen Petrie present the relationship between usability and accessibility and argue for the importance of accessibility evaluation in web engineering. The authors present the major types of accessibility evaluation that are available to web engineers and explain how to integrate these evaluations into existing development processes.

The last article in this issue focuses on “Usability Methodologies for real-life Voice User Interfaces”. Authored by Georgios Kouroupetroglou and Dimitris Spiliotopoulos, this work investigates usability issues for spoken dialogue web interfaces. The authors describe the background of such systems, before discussing hands-on approaches for applying usability methodologies in a spoken dialogue web application environment.

We hope that the readers of this special issue will obtain a better understanding of usability in the context of the development process for the web and gain significant new insights regarding the application of usability methods. This special issue involved the combined effort of a number of individuals who kindly agreed to participate in the project. We would like to gratefully acknowledge and sincerely thank all
authors and reviewers for their efforts and time in producing the special issue. Thanks are also due to the editors-in-chief of this journal for giving us the opportunity to organize this special issue, as well as the the staff at IGI Global who supported this publication with their excellent administrative skills, kind words of encouragement and their enthusiasm.

Guest Editor Biographies

Tasos Spiliotopoulos is a researcher at the Department of Informatics and Telecommunications, National and Kapodistrian University of Athens, Greece. As a member of the Information Systems Laboratory Research Group since 2000 he has participated in numerous EU and national research projects. His current research focuses on human-computer interaction, computer systems usability, the social web and online security and privacy.

Panagiota Papadopoulou is currently a research associate at the Department of Informatics, University of Athens. She holds a B.Sc (Hons) from the Department of Informatics, University of Athens, an MSc with distinction in Distributed and Multimedia Information Systems from Heriot-Watt University, U.K. and a PhD from the Department of Informatics, University of Athens. She has worked as a visiting professor at the University of Athens, University of Pireaus and the University of Peloponnese. Dr. Papadopoulou has also actively participated in a number of European Community and National research projects. Her current research interests focus on web-based information systems, interface design and online trust.

Drakoulis Martakos is an associate professor and head of the Sector of Computer Systems and Applications at the Department of Informatics and Telecommunications of the National and Kapodistrian University of Athens, Greece. He is also director of the Information Systems Laboratory (ISLab) Research Group within the department. Professor Martakos is a consultant to public and private organizations, a project leader in numerous national and international projects and the author or co-author of more than 70 scientific publications and a number of technical reports and studies.