Dealing with Conflicting User Interface Properties in User-Centered Development Processes

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IFIP WG 13.2 + 13.5 Workshop at INTERACT 2017

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Abstract. Whilst usability has been the most prominent user interface property in early Human-Computer Interaction (HCI) research other properties such as accessibility, inclusive design, user experience and, more recently security, trust and resilience (among many others) might also be important for the development of interactive system. It is interesting to notice that user interface properties might overlap and sometimes create conflicting recommendations. A good example is security which, by recommending users to deal with passwords reduces system usability by placing a burden on users. The ultimate goal of this workshop is to promote the investigation of multiple user interface properties in a user-centered design process. We are concerned by theories, methods and approaches for dealing with multiple user interface properties when developing interactive system. This workshop is organized by the IFIP WG 13.2 on Human-Centered Software Methodologies and the WG 13.5 on Resilience, Reliability, Safety and Human Error in System Development.

Keywords: User-centered design process · User interfaces properties · Usability · UX · Resilience · Reliability · Multiple perspectives in user interface design

1 Overview and Goals

Whilst *usability*, *accessibility* and, more recently, *user experience* have been prominent in the HCI research other properties such as *privacy*, *trust*, *security*, and *reliability* (among others) might also affect the development process of interactive systems. In some cases, a property might complement or enlarge the scope of another. For example,

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whilst accessibility addresses the needs of impaired users to accomplish their tasks with the system [1], UX goes beyond the pragmatic aspect of usability by taking into account dimensions such as emotion, aesthetics or visual appearance, identification, stimulation, meaning/value or even fun, enjoyment, pleasure or flow state experience [2]. In some situations, a property might be tributary to another one such is the case of *reliability* and *usability* when non *reliability* of interactive software can jeopardize usability evaluation by showing unexpected or undesired behaviors [5]. Moreover, there are some evidence that properties can trade off against each other as it is the case of *usability* and *security* [3]. For example, requiring users to change their passwords periodically may improve security but reduce usability as it represents a burden for users to frequently create and remember passwords. As a consequence, users might be keen to workarounds, such as when users take hard notes of hard-to-remember passwords.

Conflicting user interface properties often appear in recommendations for user interface design [4]. The resolution of conflicts between user interface properties is a daunting and demanding task that might require taking into account the trade-offs associated with alternative design choices. It is interesting to notice that when the conflict between properties is understood, the effects of conflicts can be mitigated/reduced by appropriate design. Examples of conflict resolution between *usability, privacy* and *security* can be found at the SOUPS (https://cups.cs.cmu.edu/soups/) community. In this workshop we aimed at enlarge the scope of the research and promote the study of the interplay of multiple user interface properties in a user-centered design process. Our aim is to cover a large set of user interface properties and try to revel their inner dependencies. We are also interested in understand how different stakeholders value user interface properties. In a long run, this workshop aims at helping the development of theories, methods, tools and approaches for dealing with multiple properties that should be taken into account when developing interactive system.

2 Target Audience and Expected Outcomes

This workshop is open to everyone who is interested in multiple user interface properties while building their systems and how different these are valued by different stakeholders. We expect a high participation of the members of IFIP WG 13.2 and IFIP WG 13.5. We invite participants to present position papers describing real-life case studies that illustrate the tradeoffs between two or more user interface properties. Any property related to user interface design is welcome but two or more properties should be addressed in the same contribution. We are also interested in methods, theories and tools for managing multiple user interface properties. Position papers will be published in adjunct conference proceedings of INTERACT 2017. During the workshop we also expect to discuss how to disseminate individual contributions to the community in the form of a special issue in a HCI journal.

3 Organizers

Marco Winckler is Assistant Professor at University Toulouse 3, Toulouse, France. His research interests focus on model-based approaches for the design and evaluation of interactive systems. He currently serves as chairperson of the IFIP working group 13.2.
Marta Larusdottir is an associate professor at Reykjavik University. Iceland. Her main research topic is the collaboration with users during design and evaluations of user interfaces. Lately Marta has focused on studying agile processes, especially Scrum, and how the usage of agile processes affect IT professionals in involving users in the development. She is in the board for IFIP working group 13.2 and the national member for Iceland in the IFIP TC13 committee.
Kati Kuusinen is an Assistant Professor at the University of Southern Denmark. Her research focuses on the social aspects of modern software engineering. She currently serves as secretary of the IFIP working group 13.2.
Cristian Bogdan is Associated Professor at KTH Royal Institute of Technology, Stockholm, Sweden. His research interests include support for rapid interactive system prototyping and development, model-based UI development and improving user understanding and sustainability through UI design in advanced areas like robotics, electric vehicles, smart grid and modern heating systems. He is vice-chair of the IFIP working group 13.2
Philippe Palanque is Professor in Computer Science at the University Toulouse 3 – Paul Sabatier and is head of the Interactive Critical Systems group at the Institut de Recherche en Informatique de Toulouse (IRIT) in France. The main driver of Philippe's research over the last 20 years has been to address in an even way Usability, Safety and Dependability in order to build trustable safety critical interactive systems. He currently serves as secretary of the IFIP working group 13.5 on Resilience, Reliability, Safety and Human Error in System Development.

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