Compose your own City Guide

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The aim of the UbiCompForAll project is to provide support to non-IT professionals so they can easily compose services adapted to their needs in ubiquitous service environments. In our presentation, we will focus on one of the project case scenarios, the City Guide scenario, and describe an initial experiment done in order to develop and validate the user interface of a service composition tool for creating mobile tourist services in a city environment. Our work has addressed three research questions:

1. What mobile services might be useful for tourists visiting the city, and how do different users' needs influence the configuration and composition of these services?
2. How can we design end-user tools that enable specification of such services?
3. Can services that are specified by the user be realized in practice?

The first research question has enabled us to identify a set of functional building blocks that can be reused when creating services in the City Guide scenario. The services have been evaluated and improved by interviewing professionals in the tourism industry. The definitions of services and functional building blocks have been exploited for answering our two other research questions.

The second research question directly relates to the project main goal. It requires investigating a composition approach that can be easily understood and taken in use by end-users. To do so, we have defined service composition scenarios and, from these, we have extracted the main concepts relevant during service composition. Both these concepts and the functional service building blocks previously identified have been exploited to design the graphical user interface of a composition tool. This interface was then evaluated through usability testing, more specifically paper prototyping [1]. The proposed user interface went through three iterations of assessment, each involving two users. Between iterations, revisions were made to the user interface as a response to problems encountered by the users. The results related to that question consist of a concrete graphical interface for the end-user composition tool and a set of recommendations for the design of similar interfaces.

The third research question relates to the realizability of the services that are specified by the end-users using the proposed graphical user interface. Our aim is to check that the user interface supports the acquisition of all information necessary for creating services. To that end we have defined a framework for the execution of services derived from the specification developed by the end-users. Further we have illustrated using message sequence charts how some of the main functionalities of our services can be realized upon that framework. In that way, we have partially addressed the third research question. We still need to implement functional building blocks and City Guide services. Further we plan to implement a composition tool based on the assessed graphical user interface and to involve participants to an appropriate conference in Trondheim in a living experiment.

Besides the work related to the City Guide scenario, we are currently performing similar experiments with the other case scenarios proposed in the UbiCompForAll project. Our aim is to identify generic components and recommendations that can be exploited when creating service composition tools.

References:

[1] Snyder, C.; Paper Prototyping – The fast and easy way to design and refine user interfaces. Morgan Kaufmann Publishers, London, 2003.

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