HALF-DAY TUTORIAL: Interaction Design for Specifying Business Requirements

TUTORIAL LEADERS:
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WHAT YOU CAN TAKE AWAY:
The main topics of this tutorial are business requirements and interaction design, as well as their combined specification. We will show that business requirements and interaction design can be combined to make business applications both more useful and usable.

CONTENTS:
When the business requirements and the user interface (UI) of a system are separated, they will most likely not fit together. Even if requirements are well specified and implemented, errors may be induced by human-computer interaction through a bad user interface. Such a system might not even be used at all; neither will a great user interface of a system be very useful, with features that are not required.

This tutorial addresses these general issues in the context of business modeling and requirements. We have developed an advanced approach, based on discourse modeling. This approach was originally devised for capturing interaction design, as many of the selected publications below indicate. However, based on our extensive experience with requirements engineering, we found that our discourse models can be also viewed as specifying classes of scenarios, i.e., (business) use cases. In contrast to the usual approaches for specifying use cases, however, our discourse models provide well-defined structures of how the various scenarios and their steps are related to each other.

This tutorial shows how business models can be based on ontologies and discourse models (even without employing speech or natural language). Ontologies help to define the domain of discourse, and the discourse models referring to it implicitly define tasks as well. Our discourse models are derived from results of Human Communication theories, Cognitive Science and Sociology.
Any software implementing an interactive business application needs a user interface, today possibly even several ones adapted for different devices (PCs, smartphones). Developing a user interface is difficult and takes a lot of effort, since it normally requires design and implementation. This is also expensive, and even more so for several user interfaces for different devices.

Traditional “pure” scenario and use case representations are not “rich” enough to allow automated generation of user interfaces from them. This tutorial demonstrates that, as well as how our discourse models can be used for automated and optimized generation of user interfaces and linking them to the application logic and the domain of discourse.

Our discourse models for specifying interaction design are derived from results of Human Communication theories, Cognitive Science and Sociology (even without employing speech or natural language). While these models were originally devised for capturing interaction design, it turned out that they also may be viewed as specifying classes of scenarios, i.e., (business) use cases. In this sense, they can also be utilized for specifying requirements. Ontologies are used to define business domain models and the domains of discourse for the interactions with software systems in the business as modeled.

User interfaces for these software systems can be generated semi-automatically from our discourse models, domain of discourse models and specifications of the requirements. This is especially useful when user interfaces for different devices are needed. Recently, we included in this generation process automatic optimization for tailoring user interfaces to smartphones, based on heuristic search.

**BIO OF LEADER:**
Hermann Kaindl is full professor and a member of the senate at the Vienna University of Technology. Prior to moving to academia in early 2003, he had gained nearly 25 years of industrial experience at Siemens Austria. Dr. Kaindl is a Senior Member of the IEEE and a Distinguished Scientist Member of the ACM.