UCD Method Selection with Usability Planner

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ABSTRACT

The diversity of User Centred Design (UCD) methods and the difficulties for estimating their cost-effectiveness make planning usability activities in systems development a hard task. Usability Planner is a tool to support the selection of UCD methods to be applied in a particular project or organization, and to estimate the relative cost benefits of applying usability methods at different stages.

Author Keywords

UCD method selection, usability support tool, business benefits, business case for usability, project risks.

ACM Classification Keywords

H.5 Information interfaces and presentation, H.1.2. Human factors.

INTRODUCTION

There are several proposed ways of classifying UCD methods, with the aim to help in the process of selecting specific methods to be applied in a systems development project. These approaches require considerable existing expertise to know in what circumstances it is appropriate to use any UCD method and how its application can affect the potential project risks, and how it can provide higher levels of business benefits.

One problem with previous approaches to the selection of UCD methods is that they start with the method, rather than the purpose for which the method is used. Usability Planner uses the detailed set of human centered activities in ISO PAS 18152 [5] as a basis for prioritizing human centered design activities and identifying the types of methods to use. It then uses criteria based on ISO TR 16982 [4] to identify which method is most appropriate. Creating a tool has made it practical to apply the comprehensive but complex principles in these standards.

Much work has been done on cost justifying usability (e.g. [1]). But existing approaches tend to justify the need for usability in general rather than selectively justifying particular methods.

The tool uses the more systematic approach of applying value-based software engineering to UCD [6] to mitigate potential project risks.

DESCRIPTION OF THE TOOL

Usability Planner suggests appropriate UCD methods for each systems life cycle stage, taking account of specific project constraints. It also includes support for prioritizing types of methods based on potential business benefits or potential risks.

The steps in selecting methods at each stage of design and development supported by the Usability Planner tool are:

- Which UCD activities would provide the greatest cost-benefits or risk mitigation?
- Which of the potential methods that could be used to achieve each activity would be most appropriate?

The tool has a comprehensive list of all the potential purposes for using UCD methods during systems development, based on ISO PAS 18152. These activities are categorised in groups such as those shown in Figure 1.
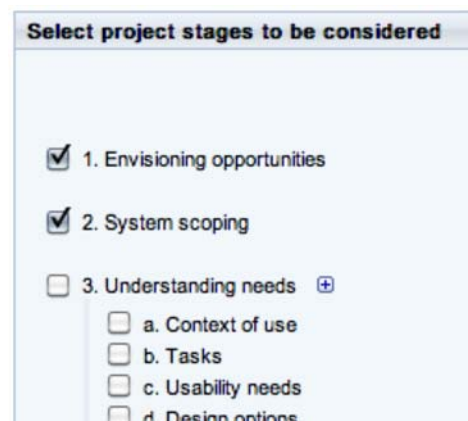

Figure 1. Project stages to be considered.

Each group can be reviewed to assess the business benefits [1] or potential risk to the project objectives [2] if the activities are not actioned (Figure 2).

Stages considered	Increased development costs to produce an acceptable system	Web site usability: poor web sales	Product usability: poor product sales	P ri p o
1. Envisioning opportunities	☑	☐	☑	
2. System scoping	☑	☐	☐	

Figure 2. Potential business risks.

The objectives and constraints associated with the project (based on ISO TR 16982) are then specified (Figure 3).

Project constraints for each stage	1. Envisioning opportunities	2. System scoping	
Need quick results	☐	☐	
Very restricted budget	☐	☐	
Usability important	☐	☐	
Rapid feedback required	☐	☐	
Uncertain specification	☐	☐	

Figure 3. Project constraints.

The tool will then recommend the most appropriate methods for each activity, in a prioritized list of activities (Figure 4). Further information is provided about each method, including links to the Usability Body of Knowledge [7].

Recomendations for Envisioning opportunities

Click on a method to see the weighting for this constraints

★ ★ ★ ★ ★   Future workshop
★ ★ ★   Preliminary field visit
★ ★ ★ ★ ★   Focus groups
★ ★ ★ ★ ★   Photo surveys

Figure 4. Recommended methods.

TOOL DESIGN

Usability Planner is being developed as an open access and open source project. The process of iteratively developing a prototype with user feedback helped refine what was initially a very complex process [3] into an increasingly simple set of steps.

It is a web-based tool implemented over the GWT (Google Web Toolkit) framework. This framework allows building RIAs (Rich Internet Applications), so that the user can operate the system with more interaction possibilities, similar to what can be offered in a desktop application.

Open license

The tool is conceived as a contribution from the authors to support wider use of UCD methods and practices in systems development. For that purpose, the tool needs to be easily accessible and to allow for modification and extension to accommodate the needs of a diverse user population. In order to fulfil these objectives, the tool will be offered under an open source license, so that the community can modify it or further extend it given that the original authors are credited and the same license applies to the result.

Feedback gathered from both usability professionals using the tool and from usability testing with software developers with an interest in usability, will help the development team to further refine the interaction design and the rules the tool uses for taking account of the characterization of projects and different systems development situations.

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