
UCD Tool to Support Evaluation Methods Selection

Sylvia Barnard
Dietmar-Hopp-Allee 16
69190 Walldorf Germany
sylvia.barnard@sap.com

Daniel Markwig
Dietmar-Hopp-Allee 16
69190 Walldorf Germany
daniel.markwig@sap.com

Eva Wischnewski
Dietmar-Hopp-Allee 16
69190 Walldorf Germany
eva.wischnewski@sap.com

Abstract

In this paper we will describe a methods guide & tool which were created to support colleagues in their decision as to which evaluation and design methods they should use in their project phase. In addition, particular emphasis will be put on the ways in which the tool guarantees the quality of the output.

Keywords

User-centered design and methods, evaluations, user experience, business software, one-team approach, best practices, methods guide/selector.

ACM Classification Keywords

H.5.2. User Interfaces: User-centered design, H.5.m Information interfaces and presentation (e.g., HCI): Miscellaneous.

Introduction

The aim in creating a *methods guide & tool* was to equip our colleagues with a clearly defined way to facilitate the selection of appropriate design and evaluation methods. For example, in using the right method for a UI validation in the first place, the project team can focus on the execution of an evaluation and on the preparation of all requested deliverables. To explain the structure of the *methods guide & tool* we will describe its setup, focusing on the processes, phases, and methods.

Methods Guide & Tool: The UCD process, Phases and Methods:

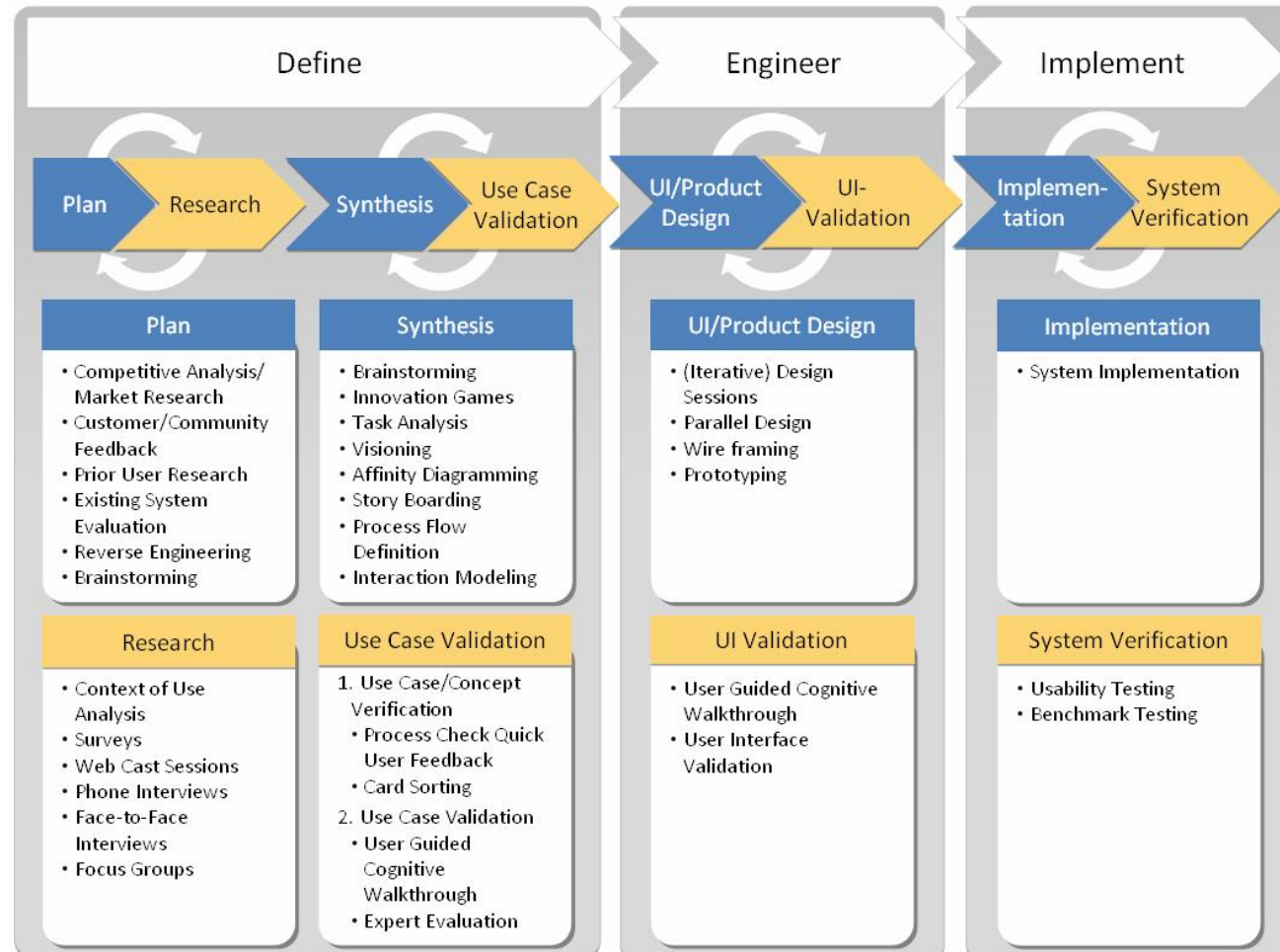


Figure 1: Overview of the *methods guide & tool* with design & validation phases and respective methods

First Layer of the *Methods Guide & Tool*:

This is divided into the 3 functional phases of the UCD process:

1. The 'define' phase includes the steps from investment decisions, user research such as site visits, use case writing, and use case validation to product definition in a one team approach.

A team typically consists of Solution Managers, User Interface Designers, Developers, and Knowledge Managers. Very early in this phase the project scope is defined by with the stakeholders and team members. Meeting the users' needs is the core aim of this phase. Talking to end users uncovers specific user requirements for existing software, ideas for new products, and even inspiration for innovation. After the synthesis of all user requirements, interaction use cases are written by Solution Management. These define the product's usage from a user's perspective. At the end of the product definition phase, all team members review and agree on the defined content. Interaction definition in use cases can then drive the overall product development requirements, as well as set the foundation for user validation activities. The evaluation methods used in this phase are use case verification with card sorting and use case validation with user guided cognitive walkthroughs.

2. The 'engineer' phase is the phase for mapping user requirements with system requirement and transferring the previous UCD phases into UI designs. In this phase, evaluation with users begins with fast, low-fidelity prototypes and ends with interactive, high-fidelity prototypes.

The evaluation method used in this phase is User Interface (UI) validation with clickable prototypes.

3. 'Implementation' is the phase where all the designed objects are developed according to the specification documents created by Solution Management in the engineer phase.

The evaluation methods employed are usability testing and benchmark tests with the system.

Second Layer of the *Methods Guide & Tool*:

Here, the design (blue arrows) and the evaluation phases (orange arrows) are alternated. Evaluation phases are research, use case validation, UI validation, and system verification.

Third Layer: Evaluation Methods

We investigated a lot of past user experience evaluations where we tried out a variety of elaborate scientific methods. The result was that we need to focus more on qualitative output than on quantitative output. Therefore we came up with the following evaluation methods:

- User Research with for example customer site visits and focus groups
- Use Case Verification with card sorting
- Use Case Validation with user guided cognitive walkthrough
- User Interface Validations with either low or high fidelity prototypes
- Usability & Benchmark Testing with the systems

Before we include new methods in our standard practices we always do pilot projects to evaluate their capabilities and constraints. These pilot projects are run during normal product development where the focus is chiefly on productivity and applicability. This means that the methods we adopt must be easy to use, and can be performed within a short timeframe with a limited number of team members and test participants.

Methods Guide & Tool

Due to the SAP Research and Innovation department's one-team approach all team members work together throughout the development process, from conducting user research to implementing the final product.

To gain a profound understanding of the user, all team members are involved in end user involvement activities. This is particularly important for team members with non-usability related jobs. Although they are supported by dedicated user researchers, there is still an ongoing need to show their expertise and make it visible.

To answer this, we decided to develop a tool that serves as a source of information for all team members and supports the method selection by taking all available resources into consideration. Furthermore, the tool establishes an understanding of UCD as a joint and sequential process that all the product development steps are based on.

Methods Guide & Tool Description

Regardless of their experience or job role, the tool provides all team members with two main features. The first is a process visualization of all available evaluation & design methods. This works like a library (see figure 1). Team members can navigate to the respective UCD phase and get an overview of its goals, deliverables, and all applicable methods. For detailed method information, team members can scroll down to a document with a short description of each method's usage, advantages and drawbacks, and the estimated time and budget needed. Thus, novices get a better understanding of the process and method execution. Ideally, experienced user researchers are also supported when introduced to new methods.

The second is a configuration functionality that support users in method selection. Our past experiences have shown that method selection can be seen as a matrix of method applicability as well as practicability attributes. Taking all aspects of this matrix into consideration is sometimes hard, especially for team members with non-usability related job roles. The tool facilitates the selection process by offering a preselection of applicable methods, based on preferences the user can define within the tool. The preselection is calculated based on classifications that experienced user researchers have made before.

Methods are proposed based on the following criteria:

- Phase the project is currently in (define, engineer, or implement)
- Team skills available (designing, notetaking, interviewing/moderating, business knowledge, implementation know-how)
- Available budget

The user gets a list of most suitable methods ranked in order of quality. When a method is selected, the tool provides information on the required timeframe, budget, team skills, and the expected output.

Example of Possible Output:

The team is in the 'define' phase of their project. The tool suggests:

- Customer site visits including moderated face-to-face interviews with end users in their work environments
- Focus groups with 6 to 10 users from a variety of companies
- Face-to-face interviews with end users in a meeting room

Example of Expected Deliverables:

- Customer site visit reports and research synthesis document including all previous topic knowledge and consolidated site visit results.

Conclusion:

By integrating the methods used at SAP into a tool, all team members are assisted in doing user-centered design in an efficient way.

New methods can be integrated easily, as team members are not only provided with a method description, but also with information about requirements important for their daily work.

During the creation process of the tool the methods definition team was forced to define distinct criteria to classify the practicability of the methods. Hence in the future it will be easier to select new methods because of this classification system.

The future will show whether such a methods guide & tool will increase the quality of the deliverables and of the product itself. Therefore, further analysis is planned.

Acknowledgements

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