

User-oriented design

Topic 8:

Monitor, measure and improve

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Role of usability testing

An essential element of the user-oriented design process is continuous testing and improvement.

Importantly, testing the usability of the system can and should take place in an iterative system and at various stages - from testing the website prototype to cyclical testing of the finished product.

Testing allows to detect system errors early, improve the overall user experience and helps to identify the advantages of the website or application, which can be used later on to identify good practices for the future projects.



Key methods and techniques of usability testing

Heuristic analysis

- Carried out by experts, most often based on adopted criteria (heuristics)
- Advantages: carried out by experts, based on specific criteria - easy comparison of results, relatively cheap method and logistically easy to carry out
- Disadvantages: an expert is not a typical user..., the test is subjective, despite the adopted criteria
- Good for: preliminary analysis of websites, identifying main functionality problems, mainly those of a formal nature



Key methods and techniques of usability testing

The Kano method

- A tool for comparing the tested system with the competition
- Advantages: a valuable source of information giving a broader perspective (not only whether the system is ok, but also whether and in what aspects it is better/worse than similar systems)
- Disadvantages: difficult to fill out by users on their own, requires adaptation, simplification from the original form or filling in by the researcher together with the user (assisted filling)
- Good for: supplementing e.g. functional tests with new aspects



Key methods and techniques of usability testing

Sample Kano scenario

Please list the features of the system that are:

- attractive (they provide satisfaction, but do not cause dissatisfaction when not met, they are not ordinary, they delight unexpectedly)
- expected (cause satisfaction when fulfilled and dissatisfaction when unfulfilled)
- necessary (are taken for granted when they are fulfilled, but cause dissatisfaction when they are not fulfilled)
- indifferent (they are neither good nor bad, lead neither to satisfaction nor dissatisfaction)
- failure (subjective assessment)



Key methods and techniques of usability testing

User experience questionnaires

- A tool for examining the overall user experience related to using the system
- Advantages: it allows you not only to see the facts (the system works/does not work), but also to get to know your feelings about the entire process
- Disadvantages: they are not very specific in themselves (it is difficult to find specific tips for implementation)
- Good for: supplementing e.g. functional tests with new aspects



Key methods and techniques of usability testing

Sample UX questionnaire

Please indicate on the scale the answer that best reflects your overall impression of using the system. The website I tested was:

	1	2	3	4	5	
unaesthetic		x				aesthetic
incomprehensible			x			understandable
difficult		x				easy
boring				x		interesting



Key methods and techniques of usability testing

Surveys, individual and focus interviews (are these usability testing methods? or just tools for obtaining users opinions? there is controversy around this topic)

- Methods and techniques based on users' declarations - they examine the idea about the system and opinions about it more than facts (e.g. users declare that the system is easy to use, but they are unable to perform the simplest task in it) - valuable in marketing research, but not so much in usability research, at least not as a stand-alone method
- Advantages: surveys - mass data collection, interviews - allow for clarification and deepening of research, focus groups - with a well-selected sample, they reveal interesting aspects of group dynamics
- Cons: They examine opinions, not facts
- Good for: marketing research, supplementing e.g. functional tests with new aspects



Key methods and techniques of usability testing

Automated methods

- Automatic audits – good for detecting formalized system errors (e.g. broken links, lack of adaptation to the needs of disabled people, bad metadata, etc.)
- A/B testing – checking alternative versions of the system, choosing from several options
- Eyetracking – tracking the eye's fixation on individual page elements, useful when modeling the architecture of information systems



Key methods and techniques of usability testing

Usability testing

- A method based on observations of actual activities performed in the system by users from the target group - it is based on facts, not declarations
- Advantages: reliable, shows how an average user copes (or does not cope) with the system, can be used as an element of broader research, fits nicely with other methods
- Cons: expensive (paying researchers and testers), logistically requiring some preparation (equipment, registration, appropriate room, etc.)
- Good for: detailed functionality testing of both ready-made websites and



Key methods and techniques of usability testing

Usability testing

- It allows you to see how users cope with performing typical tasks in a given system (e.g. finding information about a book in the library catalog or making a purchase in an online store)
- It is based on a scenario that enables efficient and repeatable execution of the study and comparison of results between sessions
- It requires the participation of at least two researchers: a moderator who conducts the session with the user and an observer who observes the session in a separate room (one-way mirror or screen sharing)
- The session usually lasts about 1 hour and takes place in a specially prepared room
- The session is - with the consent of the participants - recorded in audio and/or video form, and mouse movements on the screen are recorded
- There are many debates about the minimum number of study participants for one system. The most popular answers are from 3 to 7 people



Key methods and techniques of usability testing

Usability testing

What to pay attention to:

- neutrality of the moderator - the manner of behavior and communication of the research moderator should not influence the user's behavior and opinions and, therefore, the research results
- neutrality of the room (color, temperature, decorations, etc.) - although there are ongoing discussions whether this approach is correct, because the processes of using electrical systems take place in various conditions so too strict, laboratory conditions may be unreliable
- encouraging users to verbalize their feelings (by encouraging them to speak: "think aloud" technique)
- paying attention also to non-verbal cues given by users



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Thank you!

