

Übung zur Vorlesung Mensch-Maschine-Interaktion

e5: Heuristic Evaluation

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Wintersemester 2007/2008

Why Do We Need Evaluations?

- Ensure functionality (effectiveness)
 - Make sure that the target task *can* be performed
- Ensure performance (efficiency)
 - Make sure that a given task can be performed *within* resource limits (e.g., time, system resources)
- Customer / User acceptance
 - What is the effect on the user?
 - Does the user *like* the product?
 - Is the user pleased with operating the product?
- Identify Problems
 - For specific tasks
 - For specific users
- Improve development life-cycle
- Secure the investment: do not develop a product that can only be used by a fraction of the target group or not at all

Different Approaches

1. Inspections

- Heuristic evaluation (check if UI violates a set of rules)
- Consistency inspection (check if UI is consistent)
- Cognitive walkthrough (perform specific tasks)

2. Controlled user studies

- Comparative
- Qualitative

3. Usage observations

- Protocol findings of an observation on paper, video, log files
- Let the user keep a diary style protocol on a notebook

4. Field studies

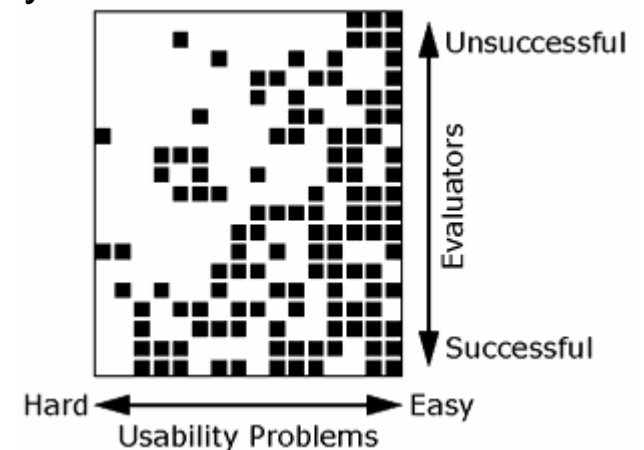
- Scientific observation in a natural environment (as opposed to a laboratory)

And In Reality?

- Usability Methods are seldom applied
- Why?
 - Developers are not aware of the techniques
 - Fear of extra cost for evaluation
 - Developers run out of time
 - Necessity is neglected (“The product works”)
 - Teams often think what they understand is understood by everyone
- (Usability) Evaluation is crucial for almost every product
- Most evaluation techniques are cheap and fast
 - Discount Usability Engineering:
http://www.useit.com/papers/guerrilla_hci.html
 - Heuristic Evaluation
<http://www.useit.com/papers/heuristic/>

Heuristic Evaluation

- Proposed by Nielsen and Molich (1990)
- Widely accepted: Google yielded 58,000 hits in 2005
- Usability inspection method for an iterative design process
- A user interface is evaluated by a small number of experts
- Evaluators judge the user interface by its compliance to a set of rules or guidelines – the heuristics
- Biggest pitfall: One evaluator can hardly find all problems alone
→ several evaluators inspect a product independently
- Aggregate the findings after everybody is done



Steps of an Heuristic Evaluation

1. Preparation:

- Define or agree on heuristics
- Prepare a complete usage scenario (walkthrough) that each evaluator goes through
- Decide on some way to capture the evaluation session and results
 - » Form/questionnaire
 - » Videotaping
 - » Observing and written assessment

2. Evaluation:

- All evaluators go through the complete scenario – at least twice or until no more problems are found
- Take notes on problems found and document them carefully

3. Analysis:

- Aggregate list of usability problems from individual forms
- Rate problems by severity

Ten Usability Heuristics by Nielsen

1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose, and recover from errors
10. Help and documentation

Severity Rating

- Used to prioritize problems
- Helps in deciding whether a product is ready for release or not
- Three influencing factors:
 - Frequency (often occurring problems are more severe)
 - Impact (Can users overcome the problem or find a workaround)
 - Persistence (Does the problem occur repeatedly or only under certain conditions)
- Scale to rate problems:
 - 0** = I don't agree that this is a usability problem at all
 - 1** = Cosmetic problem only: need not be fixed unless extra time is available on project
 - 2** = Minor usability problem: fixing this should be given low priority
 - 3** = Major usability problem: important to fix, so should be given high priority
 - 4** = Usability catastrophe: imperative to fix this before product can be released

Usability Report

- Write a usability report containing all problems identified
- Structure by severity and by functionality groups
- Give also suggestions for improvement
- Give an assessment of the products usability

Literatur

- Discount Usability Engineering:
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- Heuristic Evaluation:
<http://www.useit.com/papers/heuristic/>
- Ten Usability Heuristics by Jakob Nielsen:
http://www.useit.com/papers/heuristic/heuristic_list.html
- Severity Rating:
<http://www.useit.com/papers/heuristic/severityrating.html>