Heuristic Evaluation Method

A usability evaluation method in which one or more reviewers, preferablyexperts, compare a software, documentation, or hardware product to a list of design principles (commonly referred to as heuristics) and identify where theproduct follows and does not follow those principles.

Recommended Uses:

- To identify issues within the operational environment of the system when pre-existing design solutions and/or those of the competitors are available. When: during the Understanding Phase.
- To evaluate versions of the user interface at one or more timepoints during the iterative design cycle. When: during the Evaluation Phase.

Outcomes:

A listof potential usability problems along with their associated design violations,typically categorized by severity and illustrated with screenshots.

Limitations:

- Does not includeinteraction with intended users of the product or application. As a result, itmay identify issues that are not pertinent to the intended user and may misssissues that impact end user performance.
- Not a substitutefor a usability test, as the two methods often uncover different types ofusability issues.

Skills Required:

- Usability experts identify more issues than non-experts, but with training, non-experts are ableto identify usability problems.
- A domain expert is needed to assess technical applications or products.

Approach

Do It Yourself

See how to do it with our How-To guide.

Learn How

Ask an Expert

HFE offers consultations and assistance. Contact us to learn how we can help you.

Get Help

How To Do It

Introduction

To conduct a heuristic evaluation, evaluators walk through a set of tasks or scenarios with the user interface to identify violations of usability principles, or "heuristics." Researchers and usability practitioners have developed sets of heuristics that focus on different user interaction goals. These principles should be considered guidelines or "rules of thumb" for designing the user interface, not standards or requirements.

A heuristic evaluation is generally conducted with at least two evaluators. Each evaluator completes their review independently. One evaluator might see problems that the other misses, or they each may have different thresholds for what constitutes an issue in their mind.

The reviews will be merged into one final document. The merging process should be done in a meeting with all evaluators present. All evaluators should have the opportunity to weigh in on what does and does not get included in the final draft. Although the lead may have final say on disputed issues, the group should strive to arrive at consensus.

As a preliminary step, it is highly recommended that evaluators acquaint themselves with the heuristics that will be used in the evaluation. The set of heuristics employed is the research team's choice — there are options. However, we strongly recommend using the General Design Principles for EHRs because it was specifically designed with health IT applications in mind.

When studying the heuristics, it helps to consider how they will be put into use. For each step in a given task, the evaluator should consider whether the design violates any of the 14 heuristics. In other words, for every step the user is expected take with the interface, the evaluator must ask themselves 14 questions. Does this step honor or violate principle No. 1? Does this step honor or violate principle No.2? The process will quicken and become more automatic with practice.

Procedure

Foundational Steps (typically the responsibility of the lead evaluator)

1) **Identify the intended user and the scenario of use.**
Who will use the product and in what context?

2) **Identify a set of fundamental tasks**
that the users must be able to accomplish to make the product successful.

3) **Ideally, break down the task into the required steps in advance of the review (e.g., in a task analysis).**
If this step is not completed, the evaluators will be required to do this less formally while completing the evaluation.

4) **Select an instrument**
Typically a Microsoft Word or PowerPoint template — including the set of heuristics that will be employed and the criteria for severity ratings. (Samples are provided below.)

5) **Distribute materials to the evaluators.**

Evaluation Steps

1) **Walk through the task steps**
For each step make a judgment as to whether a heuristic has been violated.

2) **When a heuristic is violated, describe the issue**
on a Findings Page in the chosen instrument. The description should be accompanied by a:

a. Screen shot of the issue

b. Severity ranking that indicates the severity of the issue in terms of its expected impact on successful use of the product. The template should provide criteria to calibrate these judgments

c. Recommendation for how to resolve the issue

Compile the Findings

1) **Meet to walk through each evaluator's findings.**
Each evaluator should describe the issues he or she found.

2) **Come to consensus in the meeting**
on the quantity and severity of issues, the heuristics violated, and design recommendations.

3) **Compile a final document**
that represents the group's review.

4) **Deliver to customer and/or to the design team.**

Tools

Below are two instruments that can be used to conduct a heuristic evaluation. Both are the same in terms of underlying approach (heuristics used, criteria for severity rankings, and the general procedure). Choose according to the format preference for your team.

Heuristic Evaluation Data Collection Instrument (Word)

Heuristic Evaluation Data Collection Instrument (PowerPoint)

Beginners may find it challenging to keep all the heuristics in mind while stepping through the task. An alternate approach is to search the interface for usability issues, and then associate the issue with a heuristic violation. Download a cheat sheet that can be printed while conducting your review.

Heuristic Evaluation Cheat Sheet (PDF)

Author

Sources

References

Glossary Terms

Similar Methods: