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Ten Usability Heuristics

by Jakob Nielsen

These are ten general principles for user interface design. They are called "heuristics" because they are more in the nature of rules of thumb than specific usability guidelines.

Visibility of system status
   The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.

Match between system and the real world
   The system should speak the users' language, with words, phrases and concepts familiar to the user, rather than system-oriented terms. Follow real-world conventions, making information appear in a natural and logical order.

User control and freedom
   Users often choose system functions by mistake and will need a clearly marked "emergency exit" to leave the unwanted state without having to go through an extended dialogue. Support undo and redo.

Consistency and standards
   Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.

Error prevention
   Even better than good error messages is a careful design which prevents a problem from occurring in the first place. Either eliminate error-prone conditions or check for them and present users with a confirmation option before they commit to the action.

Recognition rather than recall
   Minimize the user's memory load by making objects, actions, and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate.

Flexibility and efficiency of use
   Accelerators -- unseen by the novice user -- may often speed up the interaction for the expert user such that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Aesthetic and minimalist design
   Dialogues should not contain information which is irrelevant or rarely needed. Every extra unit of information in a dialogue competes with the relevant units of information and diminishes their relative visibility.

Help users recognize, diagnose, and recover from errors
   Error messages should be expressed in plain language (no codes), precisely indicate the problem, and constructively suggest a solution.

Help and documentation
   Even though it is better if the system can be used without documentation, it may be necessary to provide help and documentation. Any such information should be easy to search, focused on the user's task, list concrete steps to be carried out, and not be too large.

I originally developed the heuristics for heuristic evaluation in collaboration with Rolf Molich in 1990 [Molich and Nielsen 1990; Nielsen and Molich 1990]. I since refined the heuristics based on a factor analysis of 249 usability problems [Nielsen 1994a] to derive a set of heuristics with maximum explanatory power, resulting in this revised

set of heuristics [Nielsen 1994b].

Updated Findings

I'll present my newest usability guidelines in the tutorial on <u>Fundamental Guidelines for Web Usability</u> at the <u>User Experience 2006 conference</u> in Seattle and London.

See Also:

- Bruce "Tog" Tognazzini's list of <u>basic principles for interface design</u>. The list is slightly too long for heuristic evaluation but serves as a useful checklist.
- The 10 usability heuristics <u>applied to everyday life</u> (just for fun)

References

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