

Usability Guidelines

Constantine's Principles

Adapted by Kelly Green <kg@dingonline.com> from Constantine, L.L. (1994). Collaborative Usability Inspections for Software. Software Development '94 Proceedings, San Francisco: Miller Freeman.

- **Structure Principle**—Organize the user interface purposefully, in meaningful and useful ways that put related things together and separate unrelated things based on clear, consistent models that are apparent and recognizable to others.
- **Simplicity Principle**—Make simple, common tasks simple to do, communicat[e] simply in the user's own language and provid[e] good shortcuts that are meaningfully related to longer procedures.
- **Visibility Principle**—Keep all needed options and materials for a given task visible without distracting the user with extraneous or redundant information.
- **Feedback Principle**—Keep users informed of actions or interpretations, changes of state or condition, and errors or exceptions using clear, concise, and unambiguous language familiar to users.
- **Tolerance Principle**—Be flexible and tolerant, reducing the cost of mistakes and misuse by allowing undoing and redoing—*canceling and going back*—while preventing errors wherever possible by tolerating varied inputs and sequences and by interpreting all reasonable actions reasonably.
- **Reuse Principle**—Reduce the need for users to rethink and remember by reusing internal and external components and behaviors, maintaining consistency with purpose rather than merely arbitrary consistency.

Maintain consistency in icons and heading styles to offer visual cues to user's location in the information space.

Neilsen's Rules

Adapted by Kelly Green <kg@dingonline.com> from Neilsen, J. (1994). Heuristic Evaluation. In J. Neilsen & R.L. Mack (Eds), Usability Inspection Methods, New York: John Wiley & Sons, Inc.

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

Warn people when a task will take longer than a few seconds. Provide "thank yous" when forms are submitted.

- **Match between system and 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.

Metaphors help: shopping, reading a magazine, "changing a channel," visting a neighbor (a la geocities).

- **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.

OK and cancel are the Web analogues of undo and redo.

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

Fundamental Web convention: underlined text = link

- **Error prevention:** Even better than good error messages is a careful design which prevents a problem from occurring in the first place.
- **Recognition rather than recall:** Make 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 to such an extent that the system can cater to both inexperienced and experienced users. Allow users to tailor frequent actions.

Put advanced options on a separate screen.

- **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.

A thoughtfully customized 404 page is an easy and inexpensive way to support users.

- **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.

Help should be easily accessible, preferably in the main (top level) navigation.

- **The need for instructions generally indicates bad design.** *My favorite example is the farecard machine at the Metro. Each time I go I see a new set of stickers slapped alongside the text instructions. Each time I fail at least once, and I only ever notice the instructions after failing – and even then I find them difficult to understand. Users scan – they rarely read. This is true at the Metro and on the Web.*

Usability Resources

Usability

Usable Web

<http://www.usableweb.com>

Jakob Nielsen's Useit.com

<http://www.useit.com>

Designing Websites With Authority, by Jakob Nielsen

ZDNet Usability

<http://www.zdnet.com/devhead/filters/usability>

Designing Usable and Visually Appealing Web Sites

<http://www.acm.org/sigchi/chi97/proceedings/tutorial/wn.htm>

Web Review: The Navigation and Usability Guide

<http://www.webreview.com>

User Interface Engineering

<http://www.uie.com>

Web Site Usability, by Jared M. Spool

Human Factors International

<http://www.humanfactors.com>

Designing Visual Interfaces, by Kevin Mueller

The Design of Everyday Things, by Donald A. Norman

User Interface '99 WEST Conference

April 12-14 in San Francisco, CA

For more information call (800) 588-9855

HTML Validators

W3C

<http://w3c.org/>

Bobby

<http://www.cast.org/bobby>

Delorie HTML Purifier

<http://www.delorie.com/web/purify.html>

Net Mechanic

http://www.netmechanic.com/html_check.htm

Accessibility

Web Accessibility Initiative (WAI)

Guidelines: Page Authoring

<http://www.w3.org/WAI/GL/>

Techniques for an Accessible Web

<http://www.w3.org/WAI/GL/techniques.htm>

Web Page Accessibility Self-Evaluation Test

<http://www.psc-cfp.gc.ca/dmd/access/testver1.htm>

Yuri Rubinsky Insight Foundation: WebABLE!

<http://www.yuri.org/webable/>

Microsoft Accessibility and Disabilities Site

<http://microsoft.com/enable/>

ZDNet Accessibility

<http://www.zdnet.com/devhead/filters/accessibility>

Columns and Publications

Alertbox

by Jakob Nielsen

<http://www.useit.com/alertbox>

ZDNet Usability – Users First

by Jakob Nielsen

<http://www.zdnet.com/devhead/filters/usability>

UIETips (via email; archives available)

<http://www.uie.com/>

UI Update (via email; archives available)

<http://www.humanfactors.com/subscribe.htm>

<http://www.humanfactors.com/Newsletters/pastissues.htm>

User Interface Engineering's Eye for Design

(bimonthly; subscription information)

<http://world.std.com/~uieweb/free.htm>

Browser Emulators

Browserola

Win 95 only; requires purchase and download

<http://www.browserola.com>

Backward Compatibility Viewer

<http://www.delorie.com/web/wpbvc.html>

Delorie Lynx Viewer

<http://www.delorie.com/web/lynxview.html>

Information Architecture

Information Architecture for the World Wide Web, by Louis Rosenfeld, Peter Morville

Envisioning Information, by Edward Tufte

Ecommerce Design

WilsonWeb – Designing a Business Web Site

<http://www.webmarketingtoday.com/webmarket/design.htm>

“Branding and Usability,” *User Interface Engineering’s Eye for Design*, January/February 1999

Why People Shop on the Web

Jakob Nielsen’s Alertbox for Feb 7, 1999
<http://www.useit.com/alertbox/990207.html>

Trust or Bust: Communicating Trustworthiness in Web Design

Jakob Nielsen’s Alertbox for March 7, 1999
<http://www.useit.com/alertbox/990307.html>

Web Usability Illustrated: Breathing Easier with Your Usable E-Commerce Site

by Eric Schaffer and John Sorflaten; published in *The Journal of Electronic Commerce*
<http://www.humanfactors.com/ECJournal/JofEC.htm>

Paper Prototyping

Users First: Prototyping Web Designs

by Jakob Nielsen
<http://www.zdnet.com/devhead/stories/articles/0,4413,2190711,00.html>

Using Paper Prototypes to Manage Risk

by Carolyn Snyder
<http://world.std.com/~uieweb/paper.htm>

“Paper Prototypes: Still the Simplest,” *User Interface Engineering’s UIETips*, January 21, 1999

Paper Prototyping Tips (video)

<http://world.std.com/~uieweb/tapedesc.htm>

Product Usability: Survival Techniques

(course)
<http://world.std.com/~uieweb/tapedesc.htm>

Do-it-Yourself Usability Testing

Free Web Usability Evaluation

by Human Factors International
http://www.humanfactors.com/Free_Intra_Evalu/intr_usab_eval.htm

Users First: Cheap Usability Tests

by Jakob Nielsen
<http://www.zdnet.com/devhead/stories/articles/0,4413,2224316,00.html>

Heuristic Evaluation

by Jakob Nielsen
<http://www.useit.com/papers/heuristic/>

Usability Professionals

User Interface Engineering

Boston, MA
<http://www.uie.com>

Human Factors International

Fairfield, IA
<http://www.humanfactors.com>

UserWorks

Silver Spring, MD
<http://www.userworks.com>