

Heuristic Evaluation

Jon Kolko
Savannah College of Art & Design

IDUS315 - HCI | 1

Overview

- Where we left off
- Underlying principles
- How to do it
- Presenting the findings

IDUS315 - HCI | 2

Heuristic Evaluation : Where We Left Off

	Think Aloud Protocol	Heuristic Evaluation	Cognitive Walkthrough	Model Human Processor	GOMS	Experiment	Competitive Analysis
User Heuristic	X	X	X			X	
Hard-Data				X	X	X	
Market Defined							X
Speed	Fast	Medium	Medium/Slow	Slow	Slow	Slow	Fast
Cost	Cheap	Cheap	Cheap	Cheap	Cheap	Expensive	Cheap
# of users required	2-8	0	0	0	0	20+	0
# of evaluators required	1-2	2-8	2-8	1-2	1-2	1-4	1-2
Developed by	Newell & Simon from CMU	Jakob Nielsen (useit.com)	Based on Lewis & Polson's CE+ info processing model	Card, Moran & Newell	Card, Moran & Newell	Social Psychology as a field	Business & Marketing as an org structure

IDUS315 - HCI | 3

Heuristic Evaluation : What is a Heuristic?

- A Heuristic is defined as : *A rule of thumb, simplification, or educated guess*

.. Eating less red meat is good for you

.. Turning something on the lathe will probably take more time than you expected

.. **Times Roman** is an ugly font

IDUS315 - HCI | 4

Heuristic Evaluation : What is a Heuristic?

- Heuristics are:
 - .. defined by a person or a group of people
 - .. **deemed to be "good principles" to follow**
 - .. recognized by others as "good principles"
 - .. a way to backup your design recommendations to marketing, management & engineering
- Heuristics are not:
 - .. hard/fast rules
 - .. always right
 - .. the end of the discussion

IDUS315 - HCI | 5

Heuristic Evaluation : Background

- Developed by Jakob Nielsen in 1992
- Intended to be a "discount usability method":
 - Quick
 - Cheap
 - Effective
- The basics:
 - On your own, **compare** an interface to a list of heuristics
 - Determine which heuristics are violated by the interface
 - As a group, **combine these lists** into a more exhaustive listing
 - Write a report and include redesign suggestions

IDUS315 - HCI | 6

Heuristic Evaluation : The Heuristics

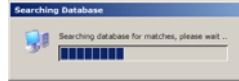
1. Visibility of system status
2. Match between system and the real world
3. User control and freedom
4. Consistency and standards
5. Error prevention
6. Recognition rather than recall
7. Flexibility and efficiency of use
8. Aesthetic and minimalist design
9. Help users recognize, diagnose and recover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

IDUS315 - HCI | 7

Heuristic Evaluation : The Heuristics

1. Visibility of system status

"The system should always keep users informed about what is going on, through appropriate feedback within reasonable time"

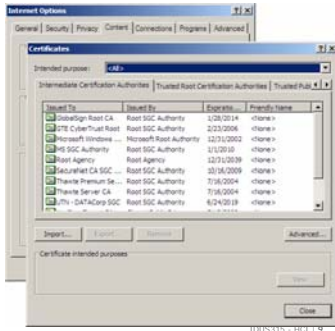


IDUS315 - HCI | 8

Heuristic Evaluation : The Heuristics

2. 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"



IDUS315 - HCI | 9

Heuristic Evaluation : The Heuristics

3. User control and freedom

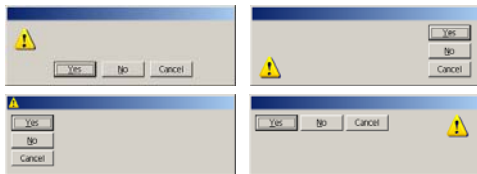
"Users often choose system functions by mistake and will need a clearly marked 'emergency exit' to leave the unwanted state without having to go through an extended dialogue. Support undo and redo."



Heuristic Evaluation : The Heuristics

4. Consistency & Standards

"Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow software/hardware platform conventions."

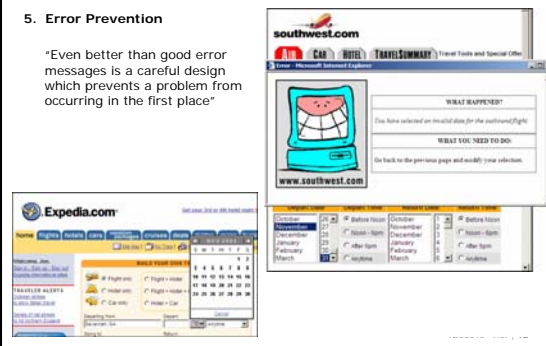


IDUS315 - HCI | 11

Heuristic Evaluation : The Heuristics

5. Error Prevention

"Even better than good error messages is a careful design which prevents a problem from occurring in the first place"



Heuristic Evaluation : The Heuristics

6. Recognition Rather Than Recall

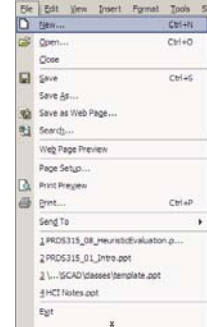
"Make objects, actions and options visible. The user should not have to remember information from one part of the dialogue to another. Instructions for use of the system should be visible or easily retrievable whenever appropriate."



Heuristic Evaluation : The Heuristics

7. 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."



Heuristic Evaluation : The Heuristics

8. 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"



Heuristic Evaluation : The Heuristics

9. 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"



Heuristic Evaluation : The Heuristics

10. 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"

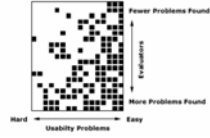
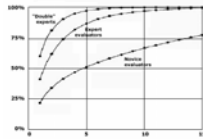


Heuristic Evaluation : Other Goodies

- A problem can violate multiple heuristics
- Err on the side of 'too many' instead of 'too few'
- **Suspend your agenda** before beginning your evaluation

Heuristic Evaluation : Evaluators

- Do the initial evaluation yourself, and then combine your results with a team
- Different evaluators find different problems
- Diminishing returns after 5-6 evaluators



Heuristic Evaluation : Presenting The Findings

- Document your findings, using a spreadsheet:

#	Related Problems	Priority of the problems	Description of the problem	Heuristic Violated	Potential solution to the problem
	List the #'s of any problems that are related	1 = highest priority (huge usability flaw) 4 = lowest priority (minor usability flaw)	A summary of the problem	The name of the heuristic that this problem violates	Hypothesize several solutions to the problem
E X A M P L E	none	3	The same icon is used for "increase text size" and "select text color" (both use a large letter A)	Consistency & Standards	Change the icons; perhaps change the "increase text size" to a small A and a large A, or change "select text color" to three A's of various colors

IDUS315 - HCI | 20

Wrap Up

- **"Expert"** based, no users involved
- Based on a set of guidelines, previously established and recognized by the profession, known as **heuristics**
- Individual finds some problems, **team finds lots of problems**

IDUS315 - HCI | 21