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Revealing Usability Issues through Heuristic Evaluations

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UX
EVERY USER HAS A STORY

When is a heuristic review applicable?

What is a heuristic review?

Why use a heuristic review?

When is a heuristic review applicable?

What is a heuristic review?

Why use a heuristic review?

When is a heuristic review applicable?

What is a heuristic review?

Why use a heuristic review?

Background



Nearly finished product

Zero usability testing



*Icons courtesy of <http://www.gemicon.net/>

Constraints

No budget for usability testing

Guerilla tactics



Benefits

Quick and painless

Helps detect major usability issues

Requires only a handful of participants

Doesn't require domain experts



Leverages reliable principles of interaction design

10 Usability Heuristics for User Interface Design^{1,2}



(<http://www.cwsiew.com/2011/06/05/what-do-you-use-your-tablets-for>)



¹Nielsen, J. (1994). Heuristic evaluation. In J. Nielsen & R. L. Mack (Eds.), *Usability inspection methods* (pp. 25-62). New York: John Wiley & Sons.

²<http://www.nngroup.com/articles/ten-usability-heuristics/>

Examples of Heuristics

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.

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.



Empathy

Allows participants to empathize with the user

Helps gain expertise in usability



Beginning

Gauge interest

20 to 30 minutes

Fill in the blank

Every review is helpful



Execution



Provide an overview

Consider brevity in details

Provide a worksheet

Begin quickly



	A	B	C	D
	[Name of Application]			
1	Northrop Grumman User Experience			
	#	Issue	Heuristics Violated	Severity
2				Recommendation
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				

A

Severity Codes*

0 - Not a usability problem

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

B
Heuristic Codes*
1 - Visibility of system status - The system should always keep users informed about what is going on, through appropriate feedback within reasonable time.
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.
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.
4 - Consistency and standards - Users should not have to wonder whether different words, situations, or actions mean the same thing. Follow platform conventions.
5 - 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.
6 - 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.
7 - 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

Assisting

Be available for questions

Encourage solutions



Consolidation

Compile results

Categorize where possible

Track duplicates



User List:				
11	The chat, share, and details icons still look disabled after they've been set to active	1, 2, 4	1	Lighten up the icons and text to match the file icons and text in workspaces
12	Category of "User" doesn't have a clear purpose.	2, 8	1	Either insert placeholder information that better communicates the intent and purpose of a user category, or remove extraneous information
13	When initially opened, the user list could start in the top left corner and be a little bit taller	4	1	As it moves up there when double clicked anyway, it may as well start there and use some of the extra space to show more users, instead of needing to be moved up and resized after each login
14	In Details, Common Workspaces doesn't have a scrollbar	4	2	Add scroll bar there, similar to main user list
15	In Details, when information like Phone or Email is missing, it lists "undefined"	2, 4, 9	1	Swap in terminology that fits the situation better
16	In Details, the More Info section doesn't seem to warrant a slide toggle for only two additional fields	4, 7	1	Just show the two fields and remove the slide toggle functionality
17	The purpose is not immediately apparent for why users are draggable	4, 6, 8	3	The draggability may need to be reworked to only appear when appropriate, ie a workspace is open, or something similar affords user dragging and dropping

Users

Chat Share Details

- Matt Hales
User
- Thomas
User
- Tom
User
- dave
User
- admin admin
User
- administrator administrator
User
- Jason
User
- Jason
User
- Owen
User
- John
User
- Michael
User
- Jenna
User
- Daryl
User

User: [Name]

First Name: Matt

Last Name: Hales

Status: active

More Info

Phone: undefined

Email: undefined

Common Workspaces

- (Hales, [Name] Chat 2013-06-18)
- (Chat With Hales)
- (Chat With Hales)
- (Chat With Hales)
- (Chat With Hales)
- (Chat With Hales)
- (Chat With [Name])
- (Chat With Hales)
- (Chat With [Name])

Tasks

Results translate directly into tasking

Easily provides avenues to improvement



Considerations

Doesn't replace user research

Test early and often

Deliver users a product they are already familiar with

Simply one of many methods



Heuristic reviews help evaluate the usability of a design

Leverages lightweight, established metrics

One method of revealing usability problems

Conclusion



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Revealing Usability Issues through Small-scale, Colleague-Driven Heuristic Evaluations

Performing full-scale usability studies can be challenging, especially with tight budgets, little time, and limited access to users. Using Jakob Nielsen's 10 Usability Heuristics for UI design¹, a design review was conducted which included team members from non-related projects who identified a multitude of usability issues. Participants were initially given brief introductions to both the system and the heuristic review process. Afterwards, each participant was provided with a layout containing an example structure for the review, corresponding heuristic and severity measurements, and access to a development build of the product. When convenient, each participant documented the usability issues they encountered. Once they completed the proper documentation, they returned their findings. Upon compiling the results, it was found that nearly 75 usability issues were identified. This includes but is not limited to several major problems documented individually by every participant, such as unclear workflows and difficult to navigate data sets. Heuristic reviews involving proximate colleagues can be rapid, inexpensive solutions in identifying basic usability issues in existing systems by circumventing the restrictions faced by product-development teams. These small-scale studies provide access to reliable, valuable information before full-scale studies are feasible.

¹Nielsen, J. (1994). Heuristic evaluation. In J. Nielsen & R. L. Mack (Eds.), *Usability inspection methods* (pp. 25-62). New York: John Wiley & Sons.

Author Biography



Matt Hales is a Front End Engineer for Northrop Grumman Information Systems in Huntsville Alabama. As a member of the User Experience team, he helps advocate User Centered Design in multiple defense sectors, including the Integrated Air and Missile Defense Program. Nerd-ing-out on everything from the number of letters in a typical saccade, to shortcuts in two-way data-binding, Matt enjoys designing and developing a wide range of user interfaces. This includes projects surrounding large data analysis, battlefield communication, and intelligence gathering. He received a BFA in Graphic Design at Utah State University and spends a gratuitous amount of time playing video games, purely as a research effort.

Michael Graham is a User Researcher for Northrop Grumman Information Systems in Huntsville Alabama. He received an MA in Experimental Psychology at the University of Alabama in Huntsville and enjoys cognitive based research and human computer interaction.