Heuristic Evaluation

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Autumn 2019
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Hall of Fame or Shame?

LG F7100
courtesy of Genevieve Bell, Intel
Launched in 2004 in UAE, Saudia Arabia, North Africa, India, Malaysia

Good
- targeted at Muslim audience
- need to pray 5x/day pointing towards Mecca

Hall of Fame!

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courtesy of Genevieve Bell, Intel
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Hall of Shame!

Big basket
From Bharti Bhagtani
https://uxdesign.cc/heuristic-evaluation-of-bigbasket-application-4a69f43be47d

Good
- ?

Bad
- not aesthetic & minimalist design
- popups with too much info
- cluttered

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Outline

• Heuristic Evaluation Overview
• The Heuristics
• Team Break
• Exercise

Evaluation

• About figuring out how to improve design
• Issues with lo-fi tests?

Heuristic Evaluation

• Developed by Jakob Nielsen
• Helps find usability problems in a UI design
• Small set (3-5) of evaluators examine UI
  - independently check for compliance with usability principles (“heuristics”)
  - evaluators only communicate afterwards
  • findings are then aggregated
  • use violations to redesign/fix problems
• Can perform on working UI or on sketches

Evaluation

Not realistic
- visuals & performance
Not on actual interface
- can’t test alone
Need participants
- can be hard to find repeatedly

Why Multiple Evaluators?

• Every evaluator doesn’t find every problem
• Good evaluators find both easy & hard ones

Heuristics

H1: Visibility of system status
H2: Match between system & real world
H3: User control & freedom
Heuristics (cont.)

H4: Consistency & standards
H5: Error prevention
H6: Recognition rather than recall
H7: Flexibility and efficiency of use

H8: Aesthetic & minimalist design
From https://icons8.com/articles/redesigning-boarding-pass-again/

H9: Help users recognize, diagnose, & recover from errors

Good Error Messages
• Clearly indicate what has gone wrong
• Human readable
• Polite
• Describe the problem
• Explain how to fix it
• Highly noticeable

H10 – Help & Documentation
• Better if the system can be used without documentation, but it may be necessary
• How
  - easy to search
  - focused on task
  - list concrete steps

http://blog.screensteps.com/10-examples-of-great-end-user-documentation
Heuristic Violation Examples

1. [H6 Recognition Rather Than Recall]
   - Can’t copy info from one window to another
   - Fix: allow copying
2. [H4 Consistency and Standards]
   - Typography uses different fonts in 3 dialog boxes
   - Slows users down
   - Fix: pick a single format for entire interface

Severity Ratings

- 0 - don’t agree that this is a usability problem
- 1 - cosmetic problem
- 2 - minor usability problem
- 3 - major usability problem; important to fix
- 4 - usability catastrophe; imperative to fix

Severity Ratings Example

1. [H4 Consistency & Standards] [Severity 3]
   - The interface used the string “Save” on the first screen for saving the user’s settings, but used the string “Store” on the second screen. Users may be confused by this different terminology for the same function.
   - Fix: Use “Save” everywhere in the application.

Problems Found Last Year

1. H3 – no purchase button [100]
2. H4 – remove column has check boxes and then one entry w/ yes/no [100]
3. H5 – illegal input (text) allowed in quantity field [90]
4. H1 – not clear who is logged in [10]
5. H2 – “what fits my car” is not a good term that people would know [20]
6. H5 – user can add “out of stock” items [80]

Decreasing Returns

- Problems found
- Benefits / cost

*Caveat: graphs for a specific example
Heuristic Evaluation Summary

- Have evaluators go through the UI twice
- Ask them to see if it complies with heuristics
  - note where it doesn’t & say why
- Have evaluators independently rate severity
- Combine the findings from 3 to 5 evaluators
  - come to agreement on problems, fixes & severity
- Alternate with user testing

Speech UI Heuristics

S1: Give the agent a persona through language, sounds, and other styles.
S2: Make the system status clear.
S3: Speak the user’s language.
S4: Start and stop conversations.
S5: Pay attention to what the user said and respect the user’s context.
S6: Use spoken language characteristics.
S7: Make conversation a back-and-forth exchange.
S8: Adapt agent style to who users are, how they speak, and how they are feeling.
S9: Guide users through a conversation so they are not easily lost.
S10: Use responses to help users discover what is possible.

Speech UI Heuristics

S11: Keep feedback and prompts short.
S12: Confirm input intelligently.
S13: Use speech-recognition system confidence to drive feedback style.
S14: Use multimodal feedback when available.
S15: Avoid cascading correction errors.
S16: Use normal language in communicating errors.
S17: Allow users to exit from errors or a mistaken conversation.

The list of heuristics along with detailed descriptions and examples can be found at http://hci.stanford.edu/publications/2018/speech-he/sui-heuristics.html

Administrivia

- Free Figma pro licenses if you use your Stanford emails to verify (instructions on Piazza)
- Questions on individual heuristic evaluation assignment?

Grading on Last Two Assignments

Assignment #4 Concept Video
A4 Slides: ✓: 8% ✓+: 58% ✓+: 33%
A4 Concept Video: ✓+: 11% ✓: 61% ✓-: 28%

Assignment #5 Low-fi Prototype & Test
A5 Group Report: ✓+: 6% ✓: 92% ✓-: 3%
A5 Group Presentation: ✓: 0% ✓: 89% ✓+: 11%
A5 Individual Presentation: ✓-: 0% ✓: 26% ✓+: 72%
CS 147: dt+UX – Design Thinking for User Experience Design, Prototyping & Evaluation
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Quiz 2

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TEAM BREAK

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EXERCISE

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Find, label, & describe 8-10 Heuristic Violations

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Problems Found

1. H2 – icons labelled null. CS term. Probably shouldn’t even be there. Remove. [90]
2. H4 – sometimes uses “text” and sometimes uses “message”. Pick one and be consistent. [70]
3. H3 – once in the flow can’t get out until you finish. Have exits. [90]
4. H1 – no confirmation after sending message. Add a confirmation text or dialog. [70]
5. H6 – after selecting a recipient, the create message screen doesn’t keep their name around. Show who I’m texting. [75]

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Further Reading

Heuristic Evaluation

- Longer lecture
  - https://drive.google.com/file/d/0BweiB6wu4sBaN2tfZGUxKbUOTg/view

- Books
  - Usability Engineering, by Nielsen, 1994

- Web site
  - http://www.nngroup.com/articles/
Next Time

- Lecture
  - Human Abilities

- Readings
  - Listen to 99% Invisible Podcast on Progress / Waiting

- Next assignments
  - Individual Heuristic Evaluation
  - Group Heuristic Evaluation (in studio)