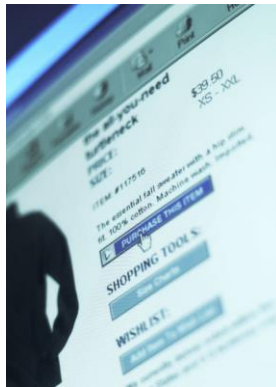


Chapter 12: The Why, What, Where, and When of Evaluation

Anna Loparev
Intro HCI
03/19/2013

Intro Evaluation

Focus

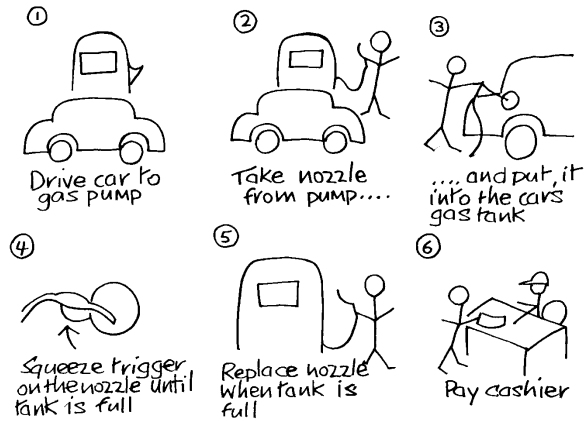


Usability



User Experience

Formative evaluation



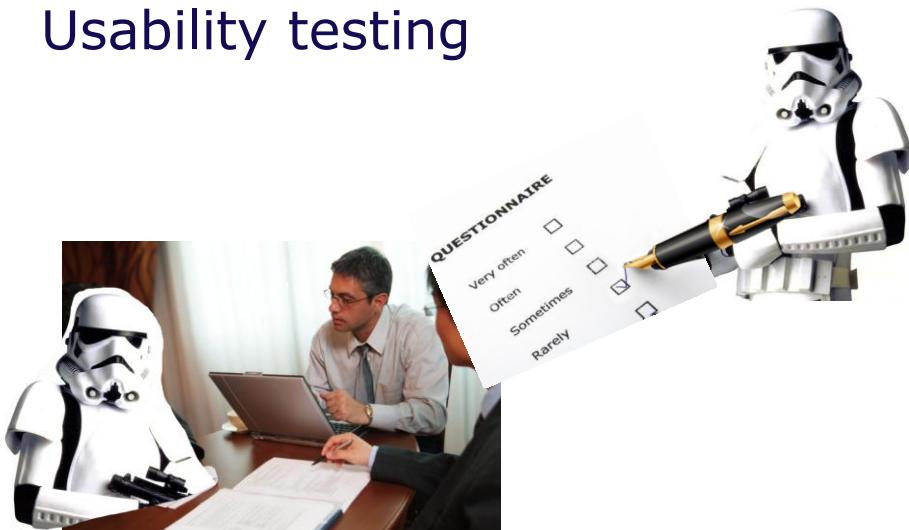
Summative evaluation



Evaluation Type: Controlled Setting

5

Usability testing



<http://starwars.wikia.com/wiki/Stormtrooper>

6

Controlled Setting

Involves



$$2 + 2 = 5$$



<http://starwars.wikia.com/wiki/Stormtrooper>

7

Controlled Setting

Supplement



<http://starwars.wikia.com/wiki/Stormtrooper>

8

Isolate variables



9

Isolate variables – Your turn



<https://en.wikipedia.org/wiki/Mario>

10

Controlled Setting

Living lab



11

Intro Evaluation

Evaluation Type:
Natural Setting

12

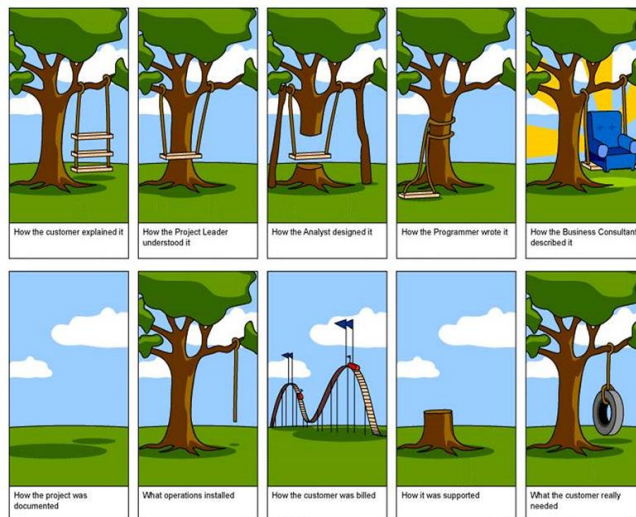
Goals: Opportunities



<http://starwars.wikia.com/wiki/Stormtrooper>

13

Goals: Requirements



www.id-book.com

14

Natural Setting

Goals: Tech deployment



Natural Setting

Involves



Natural Setting

Virtual



<http://gerberbabycontest.net/world/world-of-warcraft-the-burning-crusade-cinematic-trailer-wow-tbc.html>

17

Natural Setting

The Bad: Foresight



18

The Bad: Recording



The Bad: Users



Evaluation Type: Heuristics

<http://www.nngroup.com/articles/how-to-conduct-a-heuristic-evaluation/>

21

Nielson: Visibility



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

22

Heuristics

Nielson: System vs. real world



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

23

Heuristics

Nielson: Freedom



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

24

Heuristics

Nielsen: Consistency



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

25

Heuristics

Nielsen: Error prevention



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

26

Heuristics

Nielson: Recognition



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

27

Heuristics

Nielson: Flexibility/Efficiency



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

28

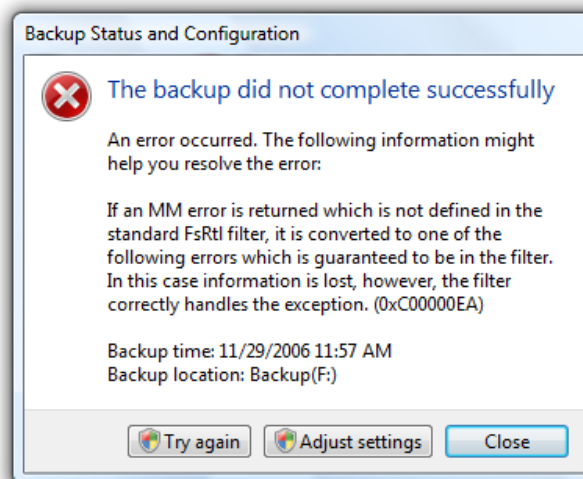
Nielson: Minimalist design



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

29

Nielson: Errors



<http://msdn.microsoft.com/en-us/library/windows/desktop/aa511267.aspx>,
Heuristics from <http://www.nngroup.com/articles/ten-usability-heuristics/>

30

Nielson: Help



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

31

Multiple evaluators



32

Heuristics

Observer



33

Heuristics

Categories of heuristics



34

Paper prototypes

Travel Organizer 23 August

WELCOME HELEN

Where do you want to go?

What date do you want to travel?

Which form of transport do you want?

Do you need accommodation?

Travel Organizer 23 August

Train timetable from Milton Keynes Central to York on 16 Sept

Depart	09:09	10:09	same	22:09
Arrive	12:30	13:30	14:30	01:30
			1 hour	

Accommodation Hotel 5*8
£40 to £150 £20 to £60

Multiple runs



Your turn

- Visibility of system status
- Match between system and real world
- User control and freedom
- Consistency and standards
- Error prevention
- Recognition rather than recall
- Flexibility and efficiency of use
- Aesthetic and minimalist design
- Help users recognize, diagnose, and recover from errors
- Help and documentation

<https://en.wikipedia.org/wiki/Mario>

37

Evaluation Type: Cognitive Walkthrough

http://www.sigchi.org/chi95/proceedings/tutors/jr_bdy.htm

38

Prerequisites



Users



Task(s)



Actions

Consider



Goal



Accessibility



Label vs. goal



Feedback

Your turn

- Goals
- Accessibility
- Label vs. goal
- Feedback



<https://en.wikipedia.org/wiki/Mario>

41

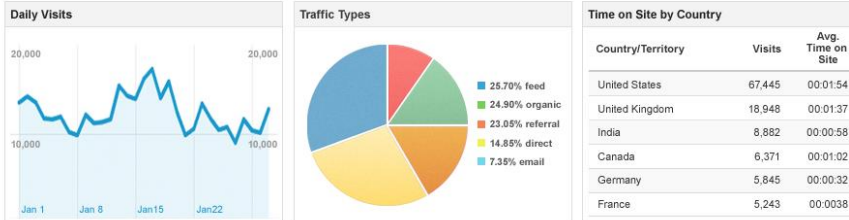
Evaluation Type:
Analytics

42

Web analytics

Home Standard Reporting Custom Reporting

My Dashboard



<http://www.google.com/analytics/>

43

Keystroke level model

Code	Operation	Time	
K	Key press and release (keyboard)	Best Typist (135 wpm)	0.08 seconds
		Good Typist (90 wpm)	0.12 seconds
		Poor Typist (40 wpm)	0.28 seconds
		Average Skilled Typist (55 wpm)	0.20 seconds
		Average Non-secretary Typist (40 wpm)	0.28 seconds
		Typing Random Letters	0.50 seconds
		Typing Complex Codes	0.75 seconds
		Worst Typist (unfamiliar with keyboard)	1.20 seconds
P	Point the mouse to an object on screen	1.10 seconds	
B	Button press or release (mouse)	0.10 seconds	
H	Hand from keyboard to mouse or vice versa	0.40 seconds	
M	Mental preparation	1.20 seconds	
T(n)	Type string of characters	$n \times K$ seconds	
W(t)	User waiting for the system to respond		
D(n0, l0)	Draw n0 straight line segment with mouse of total length l0 centimeters		

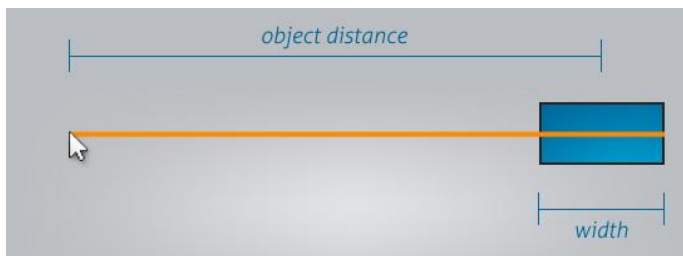
https://en.wikipedia.org/wiki/Keystroke-level_model,
Info from: <http://www.pitt.edu/~cmlewis/KSM.pdf>

44

Fitts' law

$$T = a + b \log_2 \left(2 \frac{D}{W} \right)$$

Time ↓
 ↓ *Distance*
 ↑ *Coefficients* ↑ *Width*



Info and pics from: <http://sixrevisions.com/usabilityaccessibility/improving-usability-with-fitts-law/>

45

Evaluation Type:
Opportunistic

46