Usability Testing

Notes from

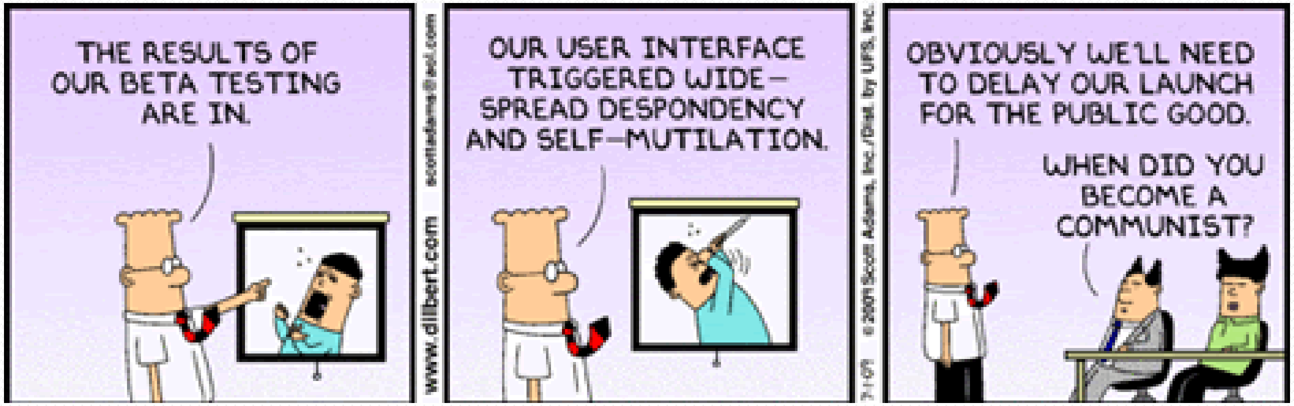
http://www.usability.gov/methods/test_refine/learnusa/index.html

Learning objectives

- Be able to articulate why and when to do usability testing
- Be able to develop usability testing plans (continues next lecture)
- Be able to write usability test reports (continues next lecture)

Usability Testing

- Testing it with representative users
  - users will try to complete typical tasks while observers watch, listen and take notes.
- Goal is to identify any usability problems
  - collect quantitative data on participants' performance (e.g., time on task, error rates)
  - determine participant's satisfaction with the product.


THE RESULTS OF OUR BETA TESTING ARE IN.
scottadams@aol.com
www.dilbert.com
OUR USER INTERFACE TRIGGERED WIDE-SPREAD DESPONDENCY AND SELF-MUTILATION.
7-1-07 © 2007 Scott Adams, Inc./Dist. by UFS, Inc.
OBVIOUSLY WE'LL NEED TO DELAY OUR LAUNCH FOR THE PUBLIC GOOD.
WHEN DID YOU BECOME A COMMUNIST?

http://www.90percentofeverything.com/2009/07/24/more-dilbert-on-user-experience/

When to Test

- You should test early and test often. Usability testing lets the design and development teams identify problems before they get coded (i.e., "set in concrete”). The earlier those problems are found and fixed, the less expensive the fixes are.

- Test as much as possible with paper prototypes
  - Main flow (fit to user’s notion of natural workflow)
  - Interface metaphor (the ‘big picture’ of the look and feel)
  - Key screens where most of the work will get done

Role of the usability test

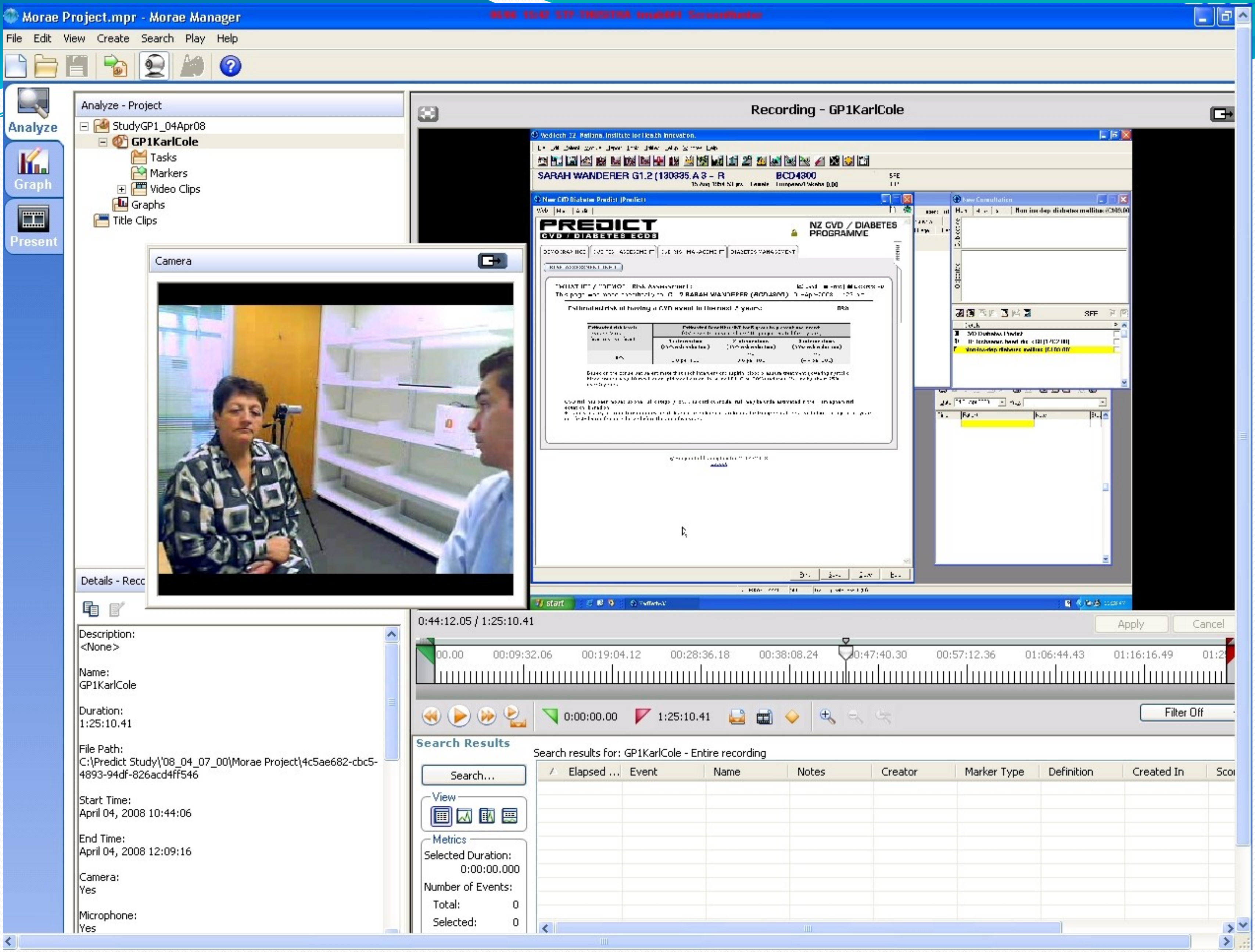
- In design
  - Early, often, informal, preferably with paper prototype to get the right product concept
  - As the design progresses
    - Working prototypes, more formal
    - Feedback to design team and broader project management on areas and priorities for change
- In product selection
  - Will this product work for your organisation (or your client)?
  - Where is it at variance from ideal? Can the vendor address these issues and/or the client cope with them??

How to test

- Know what your goal is (actually this is true for all usability evaluation methods – heuristic, performance measure-based [e.g. Fitts' Law] or participant based)
  - Focus on whatever you believe are the key aspects, e.g.
    - Navigation
    - Specific task
    - Perfecting a specific (novel or critical) control
- Set the task accordingly
- Recruit participants
- Observe
- Record (specialised tool: Morae – In a later tutorial)
  - Co-located, or Remote

Old-fashioned deluxe usability lab

- Still, can be handy to get thorough documentation of a test!



0:44:12.05 / 1:25:10.41

0:00:00.00 1:25:10.41

Search results for: GP1KarlCole - Entire recording

Selected Duration: 0:00:00.000

Number of Events:

Total: 0

Selected: 0

Description:
<None>

Name:
GP1KarlCole

Duration:
1:25:10.41

File Path:
C:\Predict Study\'08_04_07_00\Morae Project\4c5ae682-cbc5-4893-94df-826acd4ff546

Start Time:
April 04, 2008 10:44:06

End Time:
April 04, 2008 12:09:16

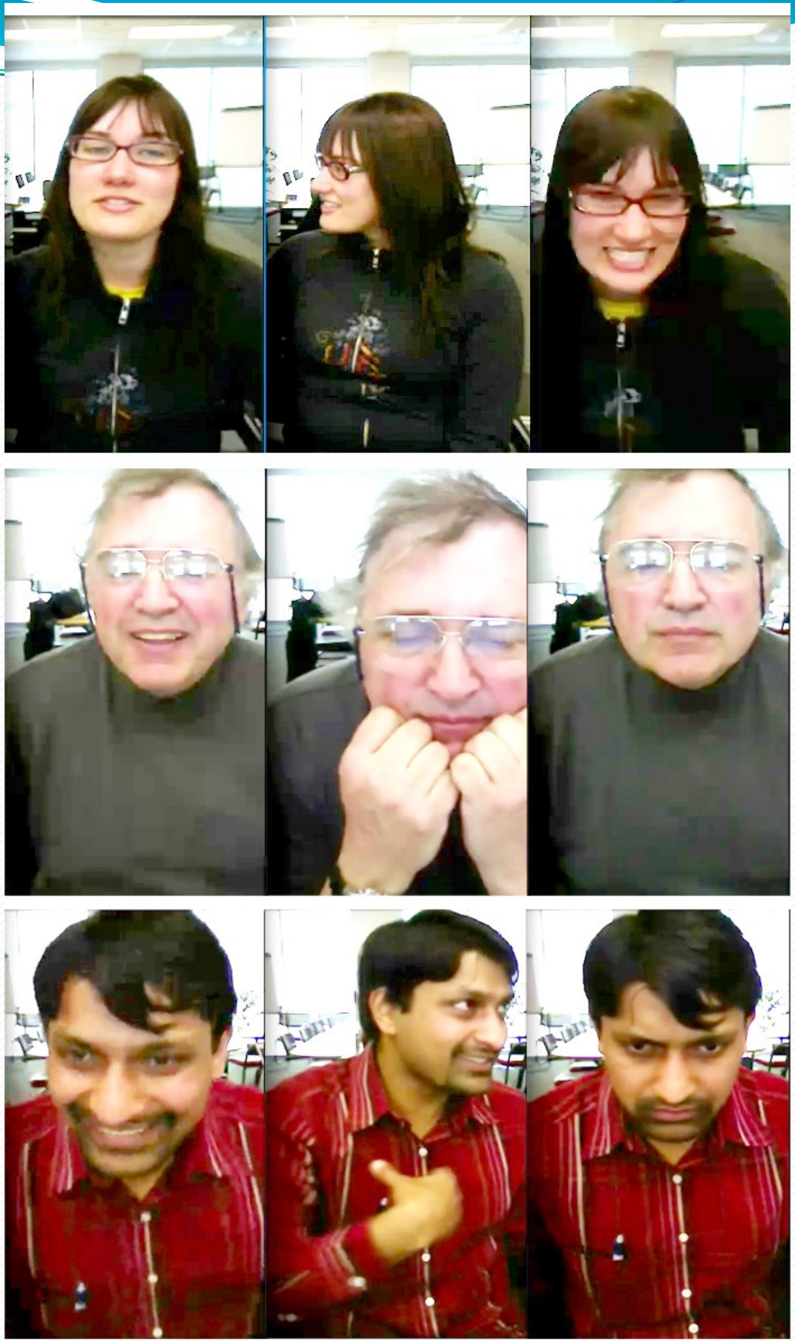
Camera:
Yes

Microphone:
Yes

Example of a Morae screen
(real GP, actor as patient, cardiovascular risk assessment task)

Remote usability testing

- Nowadays you can do a usability test with all or part of the evaluation team in another country!
  - Log audio and video of user
  - And log synchronized video of action on screen



What You Learn

- About completing routine tasks successfully
  - How long it takes to do that
  - Where people run into trouble
  - What sort of errors they make
- How satisfied participants are with your interface
- Helps to identify changes required to improve user performance
  - Alas, finding a problem doesn’t automatically hand you the answer, but at least gives you a focus for re-design / iterative refinement
- Measures the performance to see if it meets your usability objectives

Making Use of What You Learn

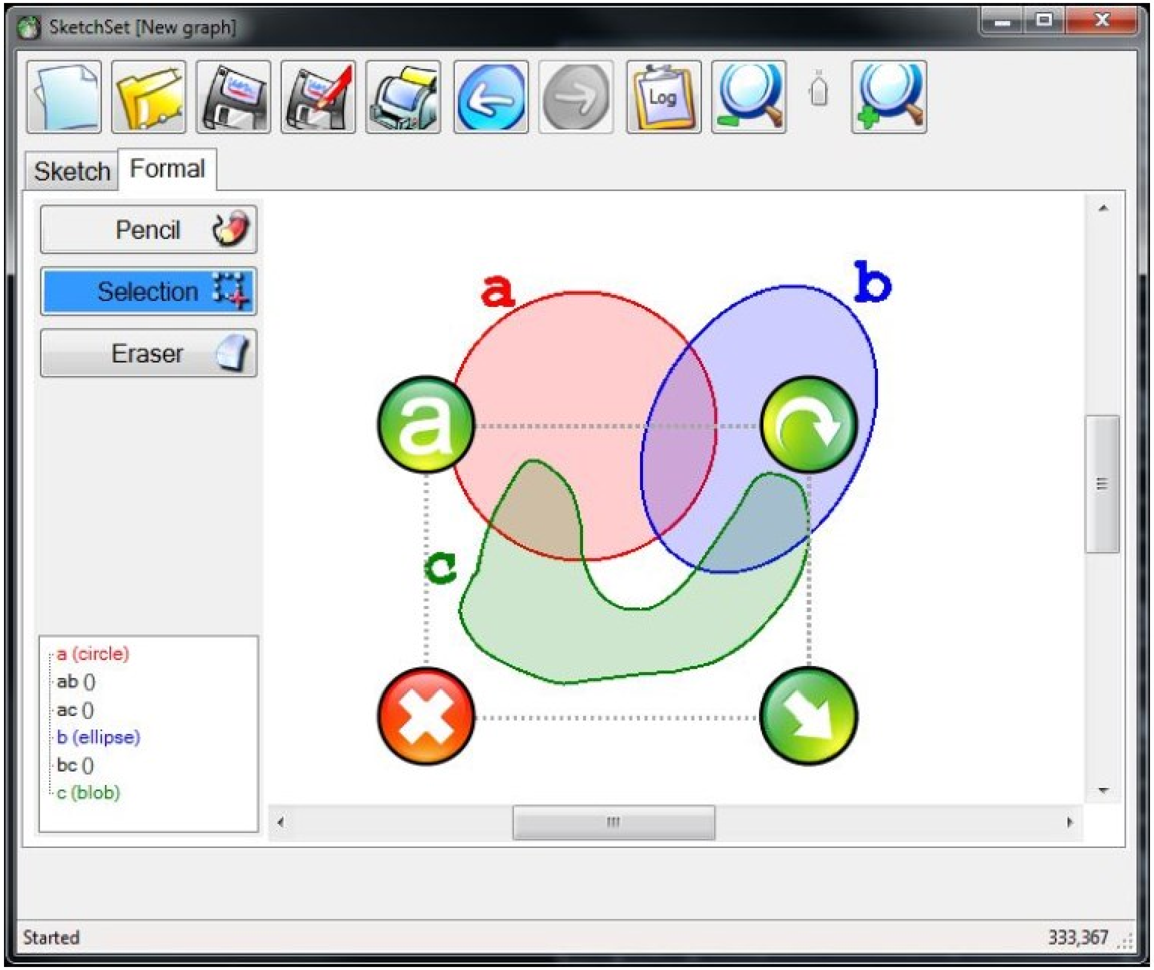
- Someone designed what you are testing
  - They may be defensive / offended that their design isn't already perfect.
  - Usability testing is not just a milestone to be checked off on the project schedule. The team must consider the findings, set priorities, and change the prototype or site based on what happened in the usability test.
- Find the Best Solution
  - Most projects, including designing or revising computer interaction, have to deal with constraints of time, budget, and resources. Balancing all those is one of the major challenges of most projects.

Usability testing results

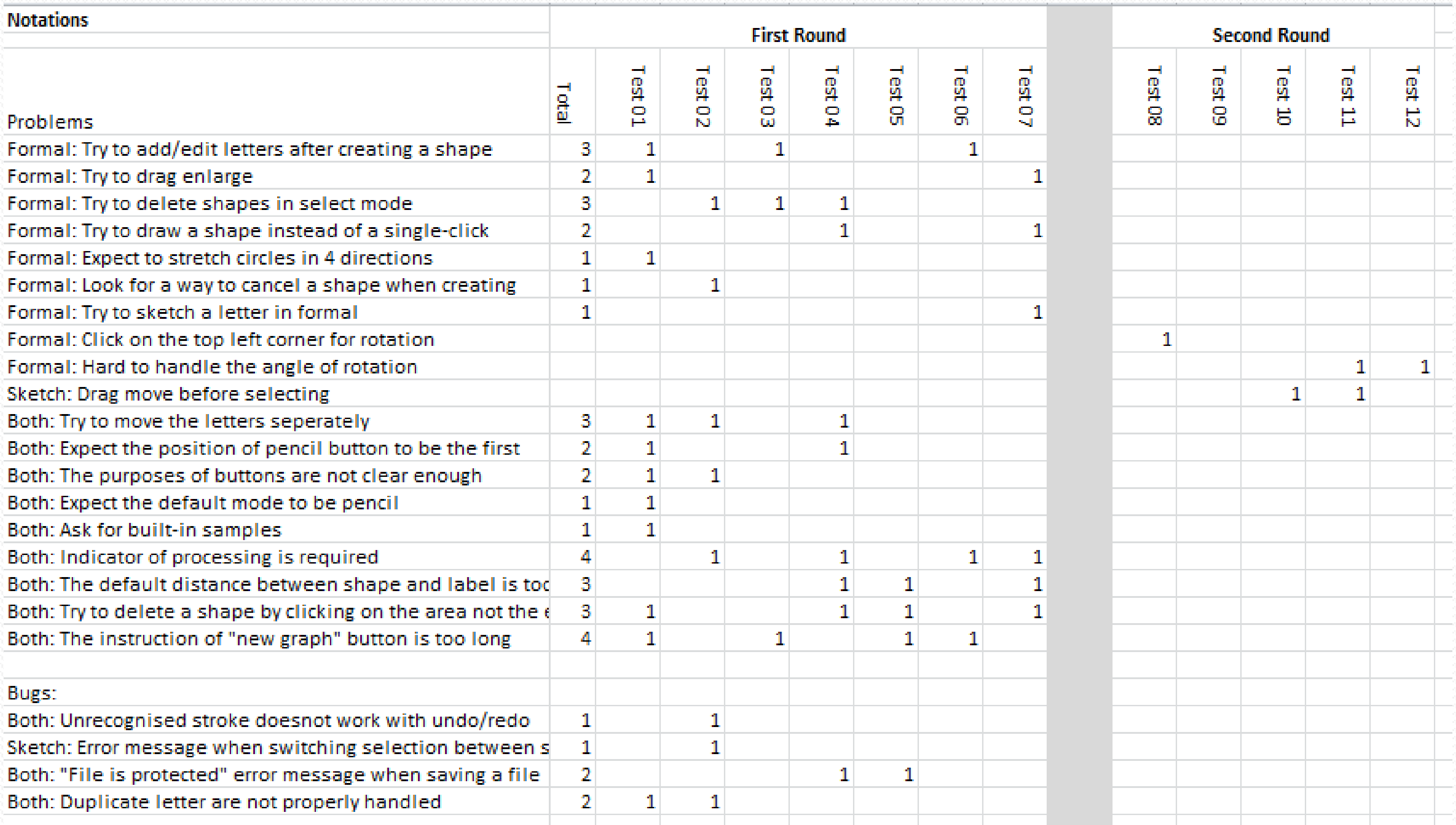
- Tabulate what you find (again, also true for other usability evaluation – e.g. scores on heuristics)
  - Individual and mean scores of performance measure, error/problem counts, and questionnaire responses
  - On a larger scale you may use statistics such as 95% confidence intervals and ANOVA versus ‘control’ (comparison) type of interface
- Include video
  - Otherwise the designers might not believe your ‘spin’
- Reach conclusions
  - Summarise the data into major (and minor) issues

Iterative evaluation

- Big problems mask little ones (sample from Beryl's work)

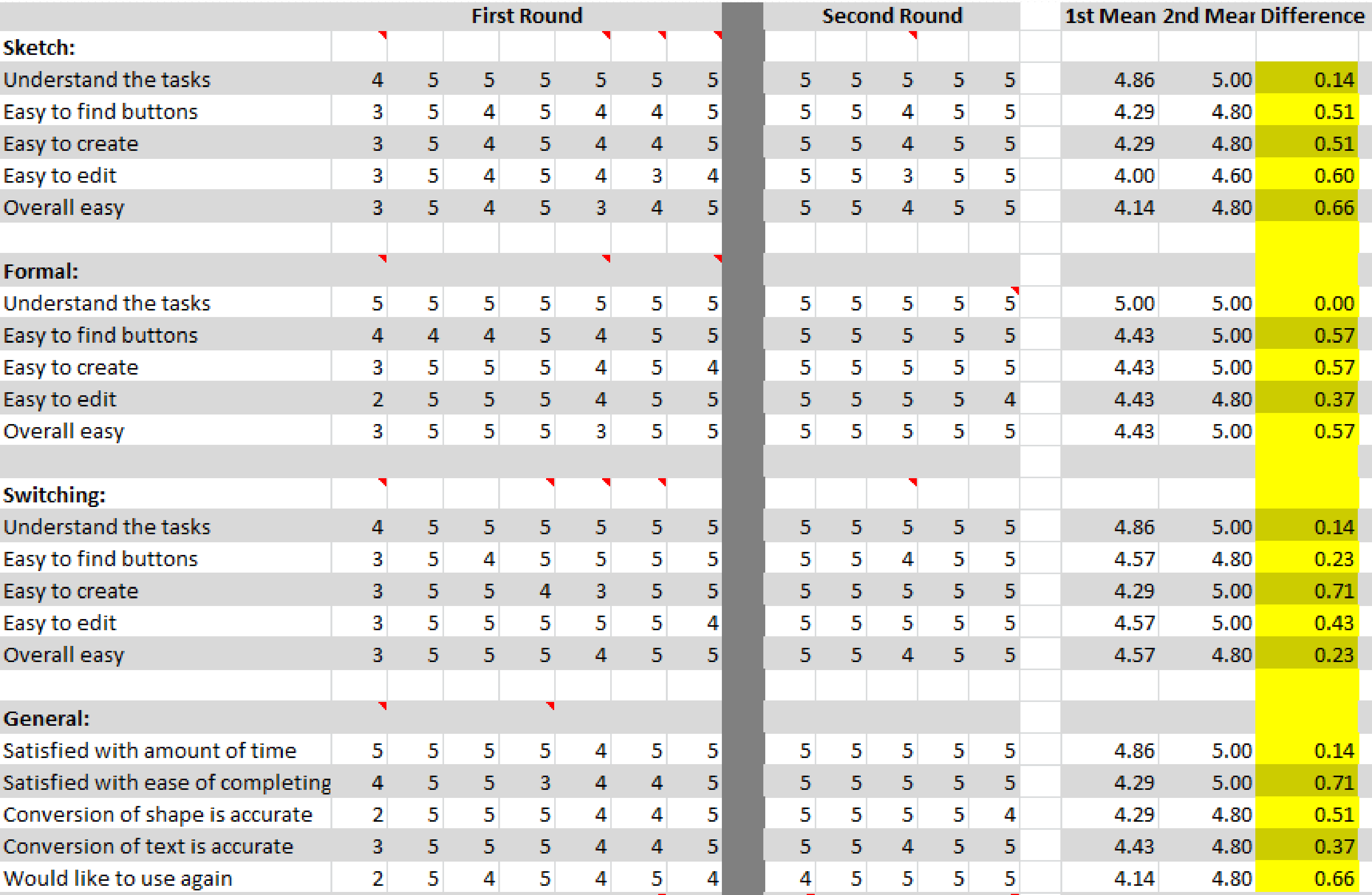


Round 1 and 2 results



Notations	First Round								Second Round				
Problems	Total	Test 01	Test 02	Test 03	Test 04	Test 05	Test 06	Test 07	Test 08	Test 09	Test 10	Test 11	Test 12
Formal: Try to add/edit letters after creating a shape	3	1		1			1						
Formal: Try to drag enlarge	2	1						1					
Formal: Try to delete shapes in select mode	3		1	1	1								
Formal: Try to draw a shape instead of a single-click	2				1			1					
Formal: Expect to stretch circles in 4 directions	1	1											
Formal: Look for a way to cancel a shape when creating	1		1										
Formal: Try to sketch a letter in formal	1							1					
Formal: Click on the top left corner for rotation									1				
Formal: Hard to handle the angle of rotation												1	1
Sketch: Drag move before selecting											1	1	
Both: Try to move the letters seperately	3	1	1		1								
Both: Expect the position of pencil button to be the first	2	1			1								
Both: The purposes of buttons are not clear enough	2	1	1										
Both: Expect the default mode to be pencil	1	1											
Both: Ask for built-in samples	1	1											
Both: Indicator of processing is required	4		1		1		1	1					
Both: The default distance between shape and label is toc	3				1	1		1					
Both: Try to delete a shape by clicking on the area not the	3	1			1	1		1					
Both: The instruction of "new graph" button is too long	4	1		1		1	1						
Bugs:													
Both: Unrecognised stroke doesnot work with undo/redo	1		1										
Sketch: Error message when switching selection between s	1		1										
Both: "File is protected" error message when saving a file	2				1	1							
Both: Duplicate letter are not properly handled	2	1	1										

Improved User Satisfaction!



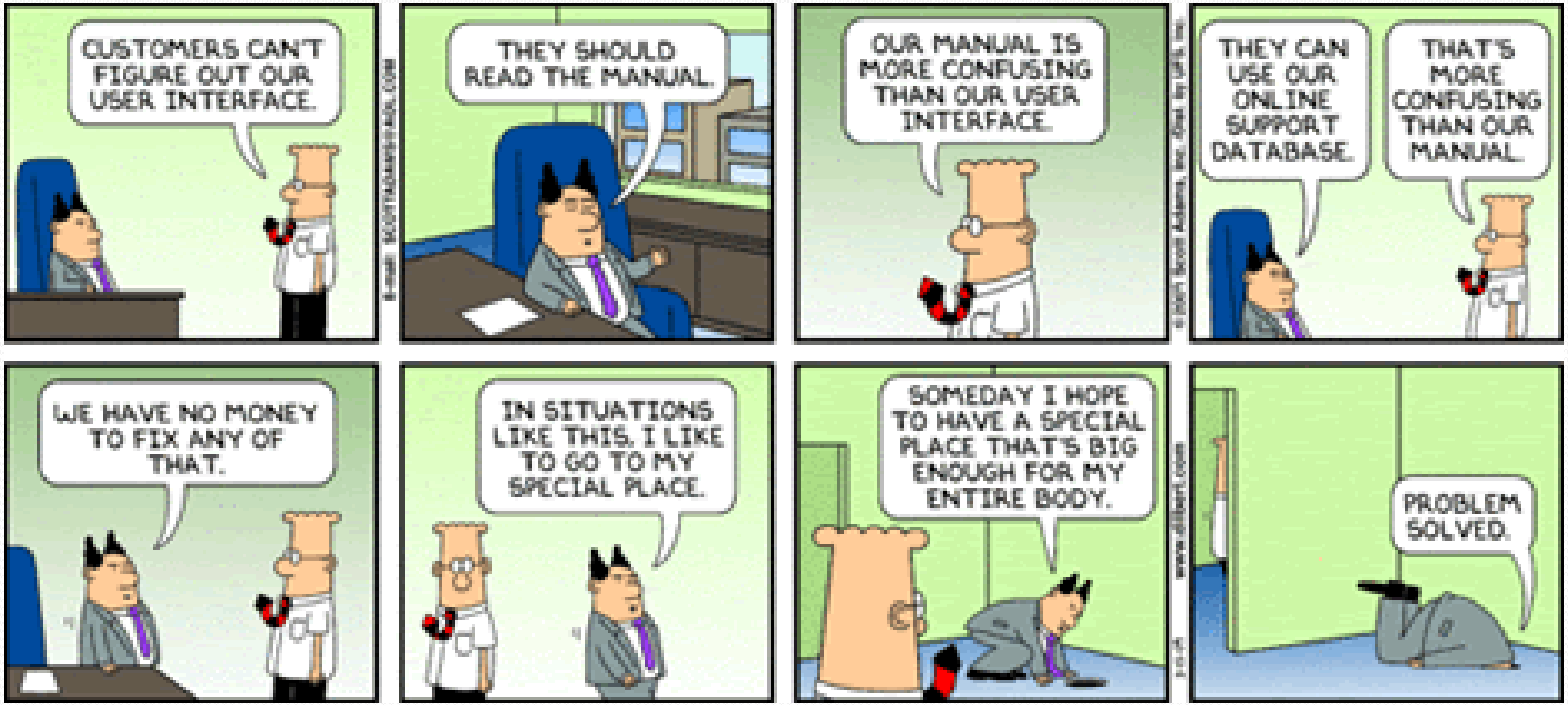
	First Round							Second Round					1st Mean	2nd Mear	Difference
Sketch:															
Understand the tasks	4	5	5	5	5	5	5	5	5	5	5	5	4.86	5.00	0.14
Easy to find buttons	3	5	4	5	4	4	5	5	5	4	5	5	4.29	4.80	0.51
Easy to create	3	5	4	5	4	4	5	5	5	4	5	5	4.29	4.80	0.51
Easy to edit	3	5	4	5	4	3	4	5	5	3	5	5	4.00	4.60	0.60
Overall easy	3	5	4	5	3	4	5	5	5	4	5	5	4.14	4.80	0.66
Formal:															
Understand the tasks	5	5	5	5	5	5	5	5	5	5	5	5	5.00	5.00	0.00
Easy to find buttons	4	4	4	5	4	5	5	5	5	5	5	5	4.43	5.00	0.57
Easy to create	3	5	5	5	4	5	4	5	5	5	5	5	4.43	5.00	0.57
Easy to edit	2	5	5	5	4	5	5	5	5	5	5	4	4.43	4.80	0.37
Overall easy	3	5	5	5	3	5	5	5	5	5	5	5	4.43	5.00	0.57
Switching:															
Understand the tasks	4	5	5	5	5	5	5	5	5	5	5	5	4.86	5.00	0.14
Easy to find buttons	3	5	4	5	5	5	5	5	5	4	5	5	4.57	4.80	0.23
Easy to create	3	5	5	4	3	5	5	5	5	5	5	5	4.29	5.00	0.71
Easy to edit	3	5	5	5	5	5	4	5	5	5	5	5	4.57	5.00	0.43
Overall easy	3	5	5	5	4	5	5	5	5	4	5	5	4.57	4.80	0.23
General:															
Satisfied with amount of time	5	5	5	5	4	5	5	5	5	5	5	5	4.86	5.00	0.14
Satisfied with ease of completing	4	5	5	3	4	4	5	5	5	5	5	5	4.29	5.00	0.71
Conversion of shape is accurate	2	5	5	5	4	4	5	5	5	5	5	4	4.29	4.80	0.51
Conversion of text is accurate	3	5	5	5	4	4	5	5	5	4	5	5	4.43	4.80	0.37
Would like to use again	2	5	4	5	4	5	4	4	5	5	5	5	4.14	4.80	0.66

Results summary

- It is often difficult to *sell* your results
- Numbers are convincing
- Video of puzzled users is very compelling
- Summarise and prioritise problems found

Tips

- Testing the site / app, NOT the Users


CUSTOMERS CAN'T FIGURE OUT OUR USER INTERFACE.
THEY SHOULD READ THE MANUAL.
OUR MANUAL IS MORE CONFUSING THAN OUR USER INTERFACE.
THEY CAN USE OUR ONLINE SUPPORT DATABASE.
THAT'S MORE CONFUSING THAN OUR MANUAL.
WE HAVE NO MONEY TO FIX ANY OF THAT.
IN SITUATIONS LIKE THIS, I LIKE TO GO TO MY SPECIAL PLACE.
SOMEDAY I HOPE TO HAVE A SPECIAL PLACE THAT'S BIG ENOUGH FOR MY ENTIRE BODY.
PROBLEM SOLVED.
www.dilbert.com

http://www.90percentofeverything.com/2009/05/26/dilbert-on-user-experience/

Test Planning

- A good plan is absolutely essential for a good test and defendable results
- The higher the stakes, the better the plan needs to be
  - In early iteration for design it might be quite informal
    - Remember: test early and often
  - As we move from design to prototype to pre-market product the formality picks up
  - Can also do formal testing as part of product selection, too
    - It's much more common to be selecting a product to get a job done than to be perfecting a product for market
    - Even a software shop might purchase a leave booking system

Selecting ‘users’

- Who are the users for a usability test?
- People you can get!
  - Have a recruitment plan
    - Dissemination, incentive
  - Runs into research ethics – do they know what they’re in for? Can they say no?
- Are they representative of your intended user base?
  - YOU, for instance, are probably almost perfectly wrong for it (IDE interfaces aside) in terms of skills and intrinsic understanding of the product and its design (you know too much!)
- Heuristic evaluation and performance measurement are (valuable!) ways to side-step the issue of user selection
  - Replace user with an expert, or a model

Summary

- Usability testing

- Why
- When
- How
- Results
- Effectiveness