

Undertaking User Testing

REFERENCES

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A sense of Diversity



Why Do you need a perform [user] testing?

To convince your stakeholders?

As a marketing tool?

To convince the market researchers/BA/developers/etc. of the value of user testing? Or in other words, that:

- they are not good representatives end-users;
- trusting their own personal choices is not enough.

To ensure the end-users can use your product?

To ensure your product fits in within its context of use?

To save \$\$\$ down the line....

Who are my User?

stakeholder

business analyst

developer

domain expert

content editor

member of the public

End-user

Usability

Not just about testing
Not just about 'ease-of-use'

About: designing a product that fits the end-user's goal

ISO 9241-11 (1998) defines usability as:

“The extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.”

- effectiveness
- efficiency
- satisfaction

did the user succeed
quickly enough
whilst enjoying the experience?

Case Study

One of the key aspects to designing the Cricket service and UI will be to provide an experience that is preferable (rather than just another channel) to traditional sources of Cricket information (newspapers, radio, TV). While there are some areas that mobile data services cannot compete, such as watching the game live on TV, it should capitalise on those areas where it can provide a better or more relevant experience. These would be:

- Provide information when customer is mobile, or away from sources such as TV, radio, newspapers
- Provide timely up-to-the-moment information (based on pre-existing choices)
- Provide a constant connection between customers and their chosen teams

Objectives for the session

To give you a sense for:

- ✓ Need Identifying the need for testing
- ✓ When Determining when to test
- ✓ Tools The diversity of testing tools and methods
- ✓ How many Determining the number of users
- ✓ BvsC Considering the benefit versus cost of testing

To give you a sense of what user testing is about and
how it can be done!

When to test

<http://www.easy2use.co.uk/upswing.htm>



1. The product as proposed by planning.



2. The product as specified by market requirements.



3. The product as designed by program architecture.



4. The product as delivered by development.



5. The product as installed at the user's site.



6. What the user needed.

Defining Testing Objectives

What do you need to find out to ensure that you met your Usability Objective?

Possible aspects to evaluate:

Quantitative

task completion

number of errors

facilities/functionality

specificity/extensibility

dialogue/task match

throughput

efficiency

readability

Qualitative

appearance

knowledge requirements

construction/packaging

product compatibility

easy to remember

learnability

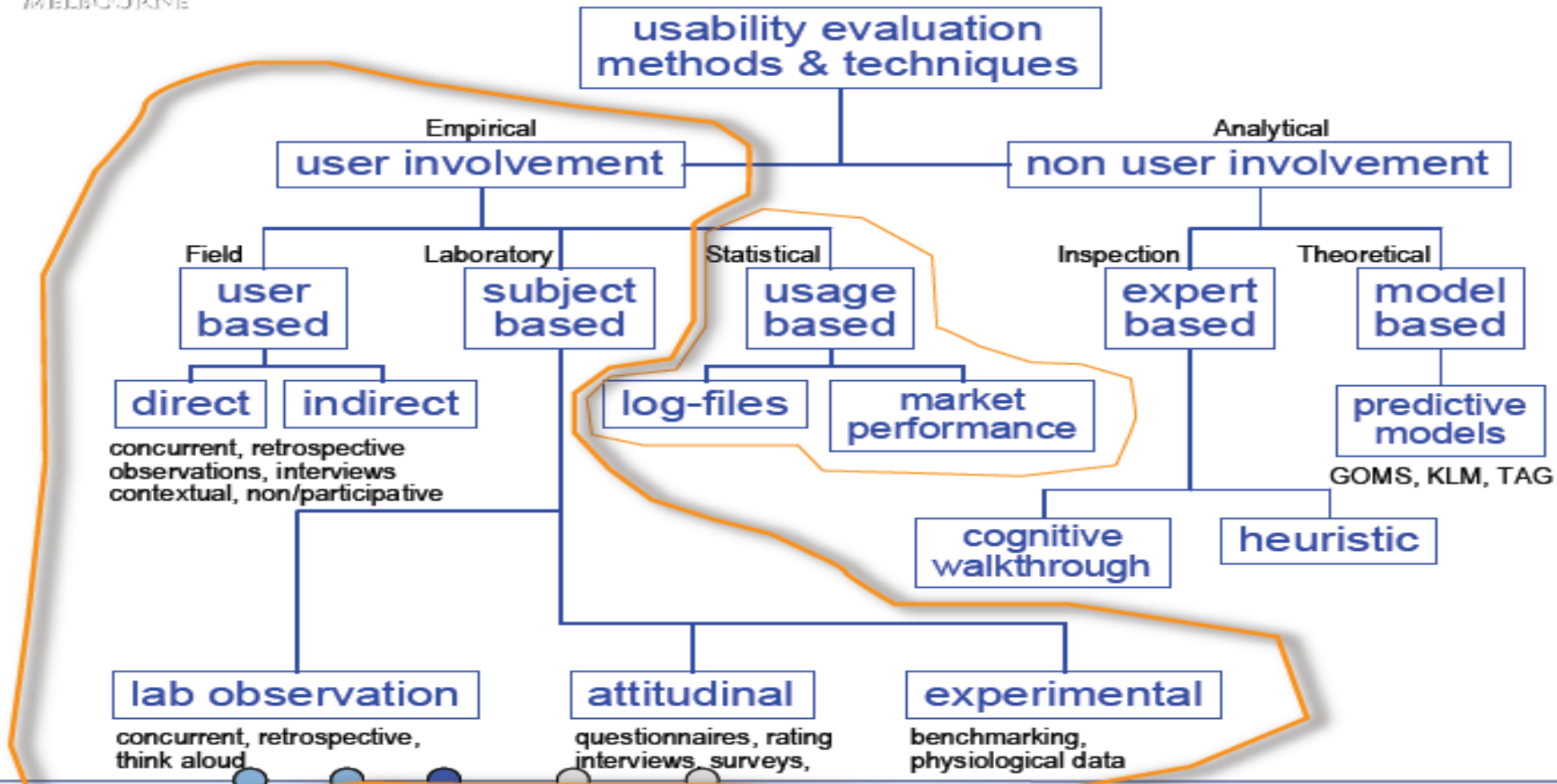
Testing Objectives

To find out if the Cricket service will provide value to customers in the following ways:

- Keep them informed
- Provide them with the latest information
- Generate the feeling of being 'there'
- Entertain them
- Enable them to voice their opinion
- Allow them to demonstrate their 'colours'
- Enable them to be prepared

What Testing Tools and Methods

MELBOURNE



Whatever the method-step involved

Define:

- Testing Objectives (derived from your Usability objectives!)
- Measurement criteria & Data collection
- (Scenarios / Tasks)

Organise materials & equipment

Organise users & testing team

Pilot test

Test with users (data gathering)

- Briefing (pre-questionnaire, getting user consent, test brief)
- Running the test
- Debriefing (follow-up interviews/questions)

Analyse & Report

What Testing Method-Essential Questions

Do you have access to users?

How long do you have?

What is your budget?

How many usability experts do you have access to?

At which stage of the development is the evaluation going to happen?

Methods: Observations

Direct observations can be carried out manually.

Indirect observations, e.g. videotaped actions yield a permanent record, can be re-visited, interpreted and analysed with the users later.

Both yield rich information but are subject to the Hawthorne effect (where the act of observing changes what is being observed).

Both take some experience to do and both can be intrusive.

How to record:

- pen & paper
- audio & video (i.e. usability labs)
- using products like Morae or UserVue (<http://www.techsmith.com/>)

Define: Scenario or Performance Based?

Scenario-based testing attempts to determine how the users tackled the tasks given, where the major difficulties lay and what can be done to alleviate those difficulties.

Performance-based testing seeks to obtain clearly defined performance measures from the data collected. Common measures are :

- Frequency of correct task completion
- Time taken to complete the tasks and frequency of user errors
- Time taken up by various cognitive activities, such as pausing while using and between using certain commands.
- Performance-based measures have to be reliable in order to be considered.

Methods: Observations

5.1. Briefing

The briefing stage is when the evaluator informs the user about the test and includes:

- Introduction to the aims of the testing
- The product/prototype introduction
- Instructions for the user
- A user profile survey
- Users' consent for any video/sound recording is sought too.

5.2. Testing

The testing stage refers to the actual conduct of the usability test. In user testing this stage involves:

- The user completing a set of pre-designed tasks
- The observer noting any difficulties encountered during the process and, at suitable points, asking the user questions

Users are also encouraged to speak what is on their minds during the tasks. This technique is known as 'think aloud'.

Methods: Observations

5.3. Debrief

The debrief is conducted at the end of the test. Debriefing aims to:

- Obtain the user's final opinion of the product
- To ask the user more about his/her experiences and difficulties during the usability test
- The debrief is done by interviewing the user or sometimes by asking the user to complete a pre-designed questionnaire

Usually the whole process is recorded:

- Video recording is a common tool
- Other forms of recording include sound recording and note taking

Preparation for observation includes selecting the user and sample size, designing the tasks, practising before the actual test, and designing the interviews/surveys.

Methods: Questionnaires and Survey

Use Questionnaires & Surveys to gather:

- facts about the users (age, expertise, habits, etc.)
- qualitative data (satisfaction, perception, judgement, etc.)

Can be used independently or to complement observations.

Creating your own? <http://www.ucc.ie/hfrg/resources/qfaq1.html>

Re-using an existing one?

Acronym	Instrument	Reference	Institution	Contains
QUIS	Questionnaire for User Interface Satisfaction	Chin et al, 1988	Maryland	27 questions
PUEU	Perceived Usefulness and Ease of Use	Davis, 1989	IBM	12 questions
NAU	Nielsen's Attributes of Usability	Nielsen, 1993	Bellcore	5 attributes
NHE	Nielsen's Heuristic Evaluation	Nielsen, 1993	Bellcore	10 heuristics
CSUQ	Computer System Usability Questionnaire	Lewis, 1995	IBM	19 questions
ASQ	After Scenario Questionnaire	Lewis, 1995	IBM	3 questions
PHUE	Practical Heuristics for Usability Evaluation	Perlman, 1997	OSU	13 heuristics
PUTQ	Purdue Usability Testing Questionnaire	Lin et al, 1997	Purdue	100 questions
http://acm.org/~perlman/question.html				
SUS	Satisfaction User Survey	Brooke	DE CoLtd	10 questions
http://www.usabilitynet.org/trump/documents/Suschapt.doc				

Analysis & Reporting Results of the test

Nielsen's heuristics(1994):

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

Rating problems encountered:

Priority 1: Must fix

Priority 2: Sub-optimal

Priority 3: 'Cosmetic' issues

References

Books:

General:

- Usability Engineering. 1994 .Nielsen. Published by Morgan Kaufmann - a must read
- Interaction Design. 2007. Preece, Sharp & Rogers, Published by Wiley - HCI text book

Specific: Rubin, J. 1994, Handbook of Usability Testing. Published by Wiley

Associations and Conferences:

Australian:

- <http://chisig.org/> - main aim is to organise the annual Australian HCI conference: <http://ozchi.org/>
- <http://www.oz-ia.org/> - the Australia Information Architecture conference

Americans:

- Usability Prof Assoc: <http://www.upassoc.org/> - for Usab prof, by Usab prof
- Computer-Human Interaction SIG of the ACM: <http://www.sigchi.org/> - strong academic publications

URLs:

- <http://www.usabilityhome.com/> - a good old list of usability testing methods, expanded from: <http://jthom.best.vwh.net/usability/> : an old list on methods for usability - from design to testing.
- <http://usability.gov/> : is the primary US government source for information on usability and user-centred design - a good reference site, with lots of practical tools and tips, can be overwhelming for the first timer.
- Cannot have a list of link without mentioning Jacob Nielsen: : <http://www.useit.com/> - his commercial endeavour
- finally, how about Wikipedia? Does a god job when defining some methodologies, especially for: http://en.wikipedia.org/wiki/Web_analytics - But not so well when defining Usability, Usability **IS NOT** about the ease of use, but how well a system supports its end-users' goals.

