

Hints and tips for design a questionnaire

- 1) Specific questions are better than general ones
- 2) Close questions are usually preferable to open questions
- 3) Consider a "no-opinion" option (as the zero point in Likert scale...)
- 4) Vary the orientation of rating scales or intersperse with other questions
- 5) Appearance, order and instructions are vital
- 6) Add introductory and concluding notes
- 7) Make return easy

Interviews and questionnaires: some considerations

First of all it is important to distinguish (a) researches where we already worked on areas of specific interest and (b) researches where these areas are not still clear: NEVER think about yourself as an expert, always do a preliminar work.

Interviews and questionnaires: some considerations

Preliminar work could be different and more or less structured depending on our time and resources, which practically requests a careful pianification (preliminary work should be considered in the project – and thus considered as an economical investement): where how when who/with whom.

Interviews and questionnaires: some considerations

Interviews may be open, semi-structured, structured...is always better to have at least a pattern to follow (arguments that SHOULD be touched, open interviews NEVER really open) and A LOT OF PATIENCE (listen who talk a lot, encourage who do not talk).

Interviews and questionnaires: some considerations

In the preliminary phase interviews should be preferred: they help us in establishing relevant subject areas, and should always be preferred when we are put in contact for the first time with key-persons (who are not necessarily the managers).

Interviews and questionnaires: some considerations

For both structured interviews and questionnaire it is highly suggested to carefully prepare items, which practically means to individuate subject areas and, for each area, one or more indicators.

Interviews and questionnaires: some considerations

Carefully prepare questions, avoiding negative and conditional forms, joking around, implications. Each item should belong to a subject area (decided in advance).

Interviews and questionnaires: some considerations

For example:

Vote is the only way in which a person like me could contribute to a change in the society.

Totally disagree

Higly agree

Interviews and questionnaires: some considerations

Type of answers:

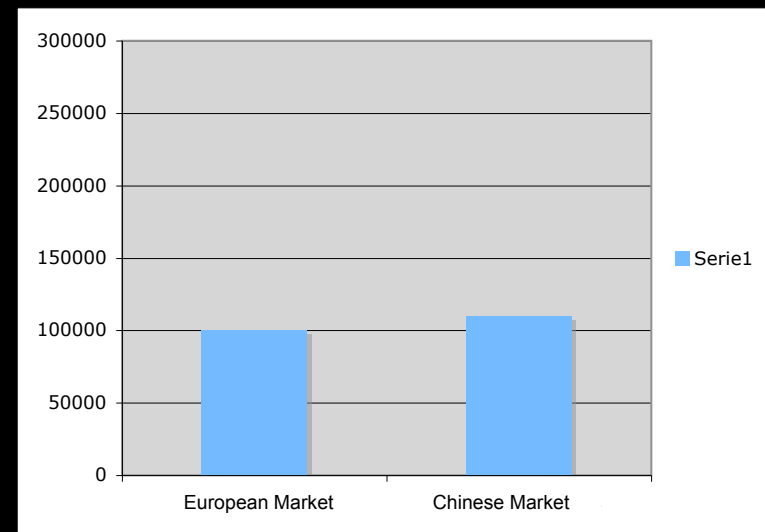
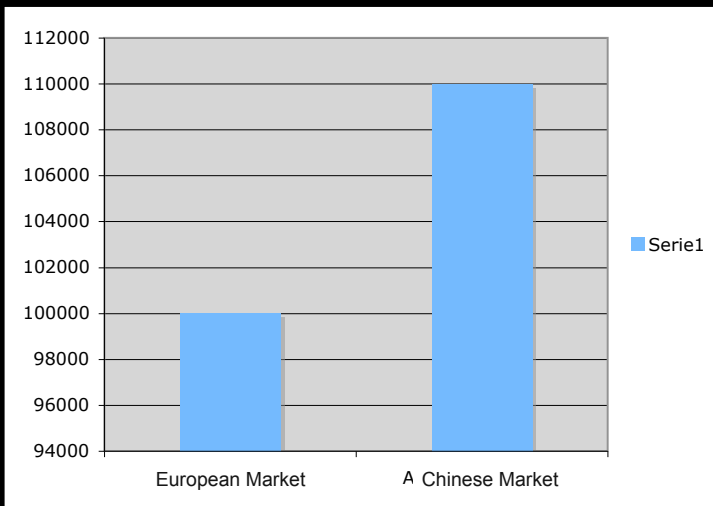
Avoid answers YES/NO, prefer 5/7 points
Likert scale.

Make predictions/hypothesis (it helps in the
organization of data for the analysis)

Interviews and questionnaires: some considerations

Do statistical analysis (ALWAYS!): take a
look to Green and D' Oliveira Statistics for
psychologist.

Presentation of data (means, standard
errors, discussion).



Gathering stories: thinking aloud

When it is necessary to know a good deal of low level detail about current technology, users can be asked to talk through the operations concerned – including their internal cognitive processes – as they use technology in question.

This data, properly termed A VERBAL PROTOCOL, can provide helpful indications of current problems.

Gathering stories: thinking aloud

It is important to remember, however, that by imposing the requirement to generate a commentary:

- 1) You are interfering with the very process you are attempting to study
- 2) Not all cognitive processes can be accessed by the conscious mind

Thinking aloud

- 1) When you would use it?
- 2) When you DON'T?
- 3) What sort of influence it could have in “changing” the problem we are studying?

Gathering stories: probes

Is not a widely used method, but it has been proved to be extremely useful in specific circumstances (such as working with the elderly population of another country).

Probes are collection of artefacts design to elicit requirements, ideas or opinions in specific contexts.

To a target group some artifacts are delivered (such as collection of maps, postcards, disposable cameras, with tasks as “take a picture of the first person you see in the morning” or “of something boring”): then items are sent back to the designers, with the purpose of “sending ideas”.

Gathering stories: probes

“Cultural probes” were developed by Gaver et coll. (1999) in working with elderly people located in three European cities: artifacts have been designed to stimulate interest and curiosity, and suggesting ways in which people could use it to send ideas back to the designers.

They have been extremely useful to confront and to provide inspiration for designers, rather than elicit specific requirements.

Technology probes are another form of probe that were used to gather requirements for home technologies and the area has now evolved into a whole area of “probology”.

Gathering stories: probes

According to an analysis of probes (cultural, technological, mobile, domestic, urban) by Graham et al. (2007) probes represent the “turn to the personal” in a direct reference to the “turn to the social” that happens in HCI at the beginning of the 1990s.

Probes are an amalgam of social science methods that enable designers to focus upon the individual’s everyday life, going beyond the general.

Gathering stories: card sorting

Card sorting refers to a number of techniques concerned with understanding how people classify and categorize things (particularly relevant in website/new software design, as the structure of the content is critical).

It has been said that trying to find things on a website is like looking for the scissors in someone else house!

Gathering stories: card sorting

As its most basic, cards sorting involves writing concepts onto cards and then grouping them in different ways.

This results in a taxonomy and a set of high-level concepts known as an ontology.

Where the results from a large number of people are available, various mathematical grouping techniques can be used.

The method could also be used with team work, followed by a discussion on which category is better to use.

Gathering stories: working with groups

An alternative to asking individuals or stimulating individuals to provide information is to work with groups of people.

The most common example of this is the FOCUS GROUP; another important group activity is BRAIN STORMING, which could be enhanced by other activities/techniques (as analysis of requirements/flows, scenarios, etc). Brainstorming session should be fun to participate in, but to achieve this they require an experienced facilitator.

Fieldwork: observing activities *in situ*

Interviews and questionnaires provide one side of the story, but it is difficult for people to describe all the details of the relevant aspects of everyday life or work.

WHY?

The choice of observing people's activities as they happen obviously depends on our goals: sometimes the designers can simply ask "Can you show me how you do that?" during an interview.

Always re-assure "the observed" on ethical issues, ALWAYS TELL PEOPLE YOU ARE OBSERVING THEM AND GUARANTEE ANONIMITY (or, alternatively, ask ALWAYS for permission).

Fieldwork: observing activities *in situ*

However, it is important to consider that some unusual situation could not come out during observation, thus is always better to use observation AND other techniques (between the ones described in this group of lessons).

A group of techniques which has become the most widely practised requirements method in the area of Computer Supported Cooperative Working (CSCW) are the workplace studies (workplace ethnology, ethnomethodology), often supported by collections of physical artefacts as well as stories, myths and so on: those techniques need specific competencies and a large amount of resources.

Requirements: the final list

When presenting the final list of requirements to the team, is better to have:

- a) illustrations/films/pictures, case studies, artefacts
- b) use a standard form or a model, including the minimum amount of information for each requirement, that is:
 - 1) a code to classify the requirement as functional/non functional
 - 2) a brief description (one sentence)
 - 3) source(s) of the requirement
 - 4) rationale

When possible, is better to add other specifications, as criteria to measure if the requirements is satisfied, the level of importance, possible dependence or conflicts with other requirements, time-table.

To conclude...

There is no a clear distinction between the definition of requirements, designing and evaluating: many of the activities and techniques described could be used at different stages of the design process, since even after the understanding phase we could go on with exploring other possible concepts/ requirements (which should be done after in the evaluation phase).

To conclude...

- 1) To better know activities of people in their context we can use interviews, questionnaires, observation in situ and in case other techniques (but only with experts/expertise)
- 2) Using more than one technique helps in compensating for limits
- 3) Work on requirements definition should be documented, scenarios based work is useful/appreciated.
- 4) Scenarios-based design starts with the understanding phase (stories) through conceptual scenarios for requirements definitions, concrete scenarios and use case.

From Stories to Conceptual Scenarios

Conceptual scenarios are more abstract than stories and you should understand which is the level of abstraction more appropriate in your case. Much of the context is stripped away during the process of abstraction and similar stories are combined.

For example: we gathered different stories on booking appointments in an hospital with different modalities(telephone, internet, front office, special needs).

How to abstract these stories?

From Stories to Conceptual Scenarios

The process of abstraction is one of classification and aggregation.

Aggregation is the process of treating a whole thing as a single entity rather than looking at the components of something.

Classification is the process of recognizing that things can be collected together, so that dealing with the class of things is simpler (more abstract) than dealing with the individual things.

Finding an appropriate level of abstraction at which to describe things for a given purpose is a key skill of the designer.

From conceptual to concrete scenarios

Each conceptual scenario may generate lots of concrete scenarios.

When designers are working on a particular problem or issue they will often identify some feature that applies only under certain circumstances. At this point they may develop a more specific elaboration of the scenario and link it to the original.

Thus one reasonably abstract scenario may spawn several more concrete elaborations which are useful for exploring particular issues. Notes that draw attention to possible design features and problems can be added to scenarios.

From conceptual to concrete scenarios

Concrete scenarios also begin to dedicate a particular interface design and a particular allocation of functions between people and devices. Concrete scenarios are particularly useful for prototyping and envisioning design ideas and for evaluation because they are more prescriptive about some aspects of the technology.

However, there is not a clear break between conceptual and concrete scenarios .

The more specific the scenario is about some aspects, the more concrete it is.

Use Cases

A use case describes the interaction between people (or other “actors”) and devices. It is a case of how the system is used and hence needs to describe what people do and what the system does.

Each use case covers many slight variations in circumstances – many concrete scenarios.

Before use cases can be specified, tasks and functions have to be allocated to humans or to device. The specification of use cases both informs and is informed by the task/function allocation process. This is the interaction design part of physical design.

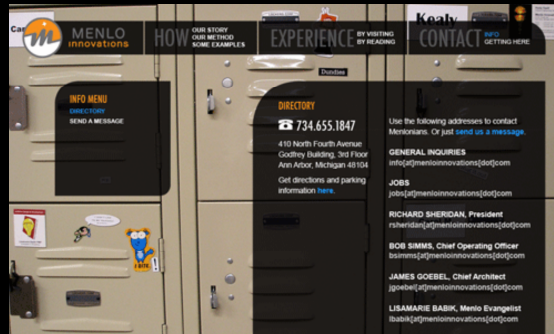
Use Cases

Finally, all the design issues will be resolved and the set of concrete scenarios is then used as the basis of the design.

A set of use cases can be produced which specifies the complete functionality of the system and the interactions that will occur.

There are a number of different ways of representing use case – from very abstract diagrams to detailed “pseudo code”.

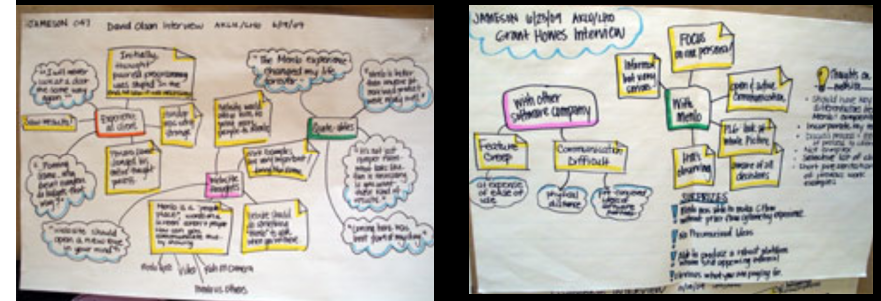
A Practical Example



Design Process Contextual Inquiry

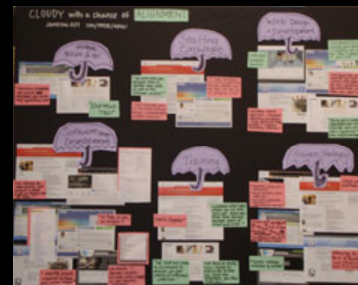
Interviews with past clients, project stakeholders and potential website visitors were conducted to gather information about their unique experiences with Menlo.

The following "mind maps" were created to visualize two such interviews.



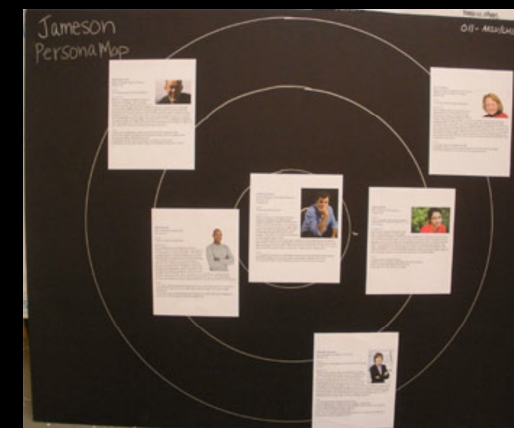
Comparative Analysis

A comparative analysis was conducted to better understand Menlo's competitive landscape as well as the companies they wish to emulate. The first two artifacts show an analysis of the competition, and the components of their websites that either hinder or invite engagement. The last two artifacts outline how Menlo aligns itself with the competition and other "small giants" who they respect.



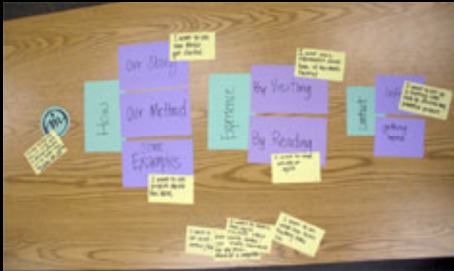
Personas, Scenarios & Persona Mapping

Using the data obtained from interviews and the comparative analysis, personas were created that represented the various types of people who would visit the Menlo website.



Site Architecture

Usability tests were conducted to help determine site architecture. The left image shows the "Site Navigation Game" that was played with users. The goals of the primary, secondary and tertiary personas were written on yellow cards, and users were then asked where they would go first to accomplish these goals. The right image shows the final site navigation after multiple rounds of this usability test



Lo-Fidelity Prototyping

The above research was then translated into sound design decisions. The following paper prototypes were created for usability tests with potential users of Menlo's website.

