Postgraduate Certificate Web Design and Development 12 December 2009
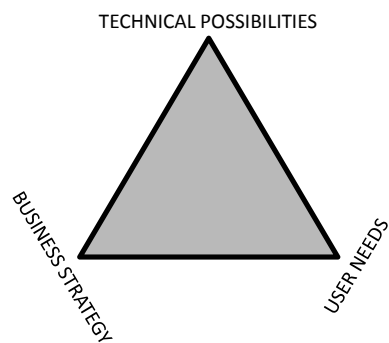
User-Centred Design on the Web

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2.1.1 *Introduction*

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TECHNICAL POSSIBILITIES

BUSINESS STRATEGY

USER NEEDS

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This module

- In this module we teach **how to create websites with a great user experience.**
- In **WDD 2.1** we'll start with understanding **user and business needs**
- In **WDD 2.2 on 16 Jan** we'll look at how to translate those into a great **design**
- In **WDD 2.3 on 30 Jan** we'll look at how you can **evaluate your design**
- **WDD 2.4 on 13 Feb** is about **scoping and managing** your project
- **2nd Assignment due: Tuesday, 2nd March 2010**

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What is User Experience?

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…how users experience your product or system…

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System: 12/11/2009

...how users experience your product or system...

...your brand...

The elements of user experience

Proposition	Value delivered to customer
Concept	Concept for how the value is delivered
Structure	Organisation of product components
Information	What information is used by users
Interaction	How users interact with product components
Appearance	What it looks like and how it is arranged

...one view of it. Here's another one

Task: *Review a website*

- **Look at http://www.orange.co.uk**
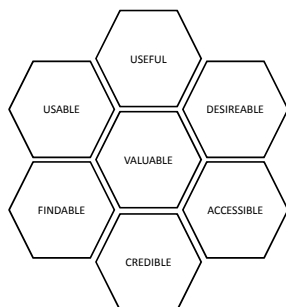- What is the website's **proposition**? How relevant is it?
- What is the underlying **concept** that realises the proposition? Does the concept work?
- How is the website **structured**? Is this effective?
- What **information** is on the website? Is it sufficient and relevant?
- How does the **interaction** work? What is problematic and what is well executed?
- How does the website's **appearance** reflect its proposition, concept and brand?

What is *a good* User Experience?

A good user experience is…

USEFUL
USABLE
DESIREABLE
VALUABLE
FINDABLE
ACCESSIBLE
CREDIBLE

Source: Peter Morville http://semanticstudios.com/publications/semantics/000029.php

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It makes sense for your organisation

1. **Increased effectiveness and efficiency**
   More page impressions, higher sales conversion, more competitive products…
2. **Increased customer satisfaction**
   Solid brand reputation, loyalty from existing customers, word-of-mouth
3. **Reduced support costs**
   Fewer site user will call for help
4. **Effective channel migration**
   Encourage customers to move to more cost-effective channels
5. **Differentiation**
   Stand out in a crowded market

How do you create a good user experience?

How do you create a good user̲s̲ experience?

...by involving
these people
throughout...

...this process is called User-Centred Design.
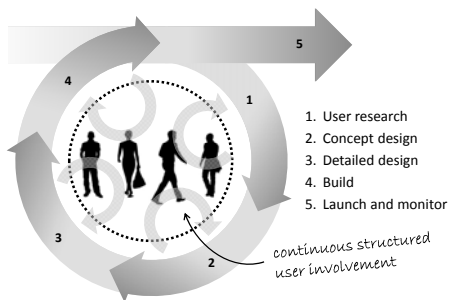
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1

1. User research
2. Concept design
3. Detailed design
4. Build
5. Launch and monitor

3

2

continuous structured user involvement

PROJECT TIMELINE

EVALUATION

DISCOVERY & RESEARCH   DESIGN & CONTENT CREATION   BUILD
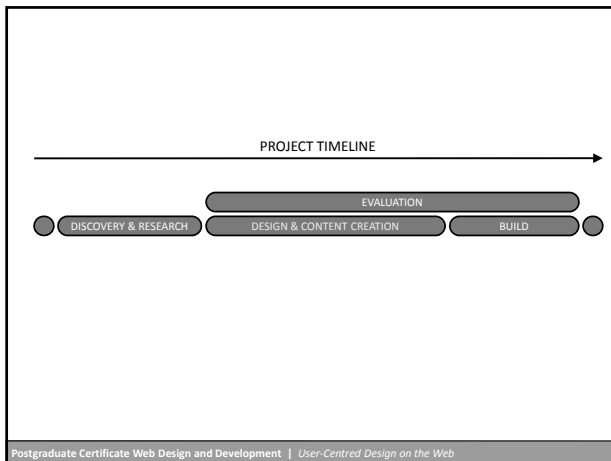
User-Centred Design

- User-Centred Design (UCD) is a design process that is based on **around structured user involvement** and **iterative design**
- There are many possible UCD models, **but all follow the same sort of pattern**
- There is also an **International Standard** for user-centred design, ISO 13407, which can be used to inform many Web development projects.
- **It's a toolbox:** pick and mix
- Fit for purpose – **we do not have to use every tool!**
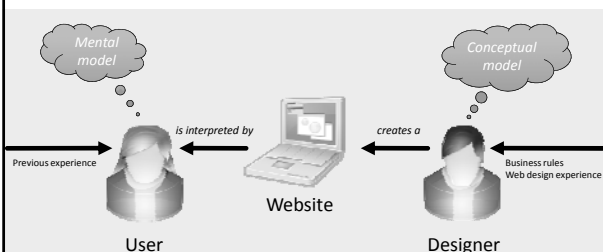
A recap on terms…

Terms

- **User Experience** is the overall experience and satisfaction a user has when using a product or system
- **User Centred Design** is the process of how to build websites that have great user experience
- But from the users' perspective, their user experience is built on the **interactions** they have with the website.
- **Individual user interactions are the building blocks of the overall User Experience**

2.1.2 Norman's model

A model of interactions

Mental model — is interpreted by — Website — creates a — Conceptual model

Previous experience — User — Designer — Business rules / Web design experience

Source: Donald Norman's The Design of Everyday Things

Mental model

- Is a user's **own view of how a website works**
- Is usually **incomplete, inaccurate** and **naive**
- Built on **previous experience of websites** and technology that may or may not be applicable
- But the user's mental model is **good enough** to explain to them how the website works

- An example: Just how much do you know about how your car works?
- What do you need to know to drive it?

What are your mental models like?

Write down how an ATM works

What are your mental models like?

Write down how an ATM works
- How much money are you allowed to take out?
- What denominations?
- If you take out the maximum and go to another machine and tried the same what would happen?
- What information is on the strip on your card? How is this used?
- What happens if you enter the wrong number?
- Why are there pauses between the steps of a transaction? What happens if you try to type during them?
- Why does the card stay inside the machine?

How did you go?

- How detailed was your mental model? How shallow?
- How much did you use analogies to explain it?

Good design encourages useful mental models

A good website design treats its users like rather lazy detectives… leaving obvious clues around, guiding them to a useful understanding

There are some key design principles to support this task:

- Functions and system states that are **visible** to users
- **Feedback** that clarifies what the user has done
- Clear and simple **affordances** let users know what is possible on the website
- A natural **mapping** between controls and their effect

Task: *Review a website*

- **For the search results page of the following website**
  - http://www.kayak.co.uk – use the search results page

- **Identify affordances, feedback, mapping and system visibility**
  - What is unique to this website?
  - What is common to other websites?

- **How does the site help users develop a mental model?**

2.1.3 *Client and competitor research*

PROJECT TIMELINE

EVALUATION

DISCOVERY & RESEARCH   DESIGN   BUILD

Business Requirements
Stakeholder meetings
Competitor evaluation
User research
Task analysis
Personas and task scenarios
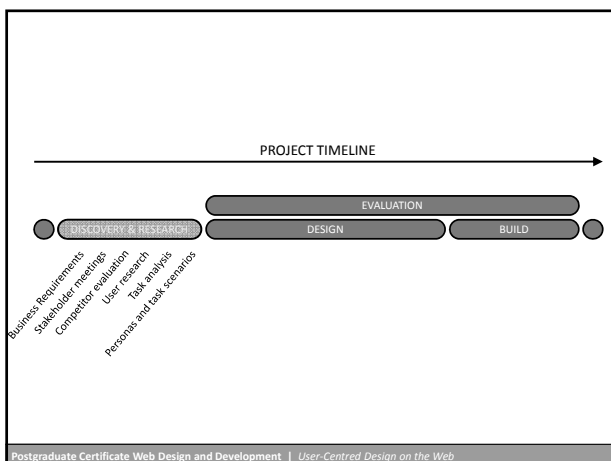
…I don't need to do this, I've already got a design brief from the client!

Discuss: *What design briefs won't tell you…*

What client briefs rarely tell you…

- Hidden agendas & internal politics
- Unstated/undiscovered user needs & behaviours
- Where you can innovate

Before you start, you need to understand:
- Business needs & objectives
- Stakeholders, their involvement and agenda
- The market
- Your users, their goals, needs, and context of work

Understanding business objectives

- UCD is **all about discovering business opportunities** through user research and improving the way users can interact with products or services.
- Often **there may some resistance** against adopting UCD
- So it's vital to understand the **business goals, success factors and politics** of the organisation you are working for.

- It's all about **bringing organisational objectives/business goals and user needs together!**

Understanding business objectives

- **Scope & definitions:** WHAT is the product/service supposed to do?
- **Primary purpose/goal of project:** WHY are you doing it? (what are the business benefits?)
- **What's the Business model?**
  - Revenue generating (for example Commerce, Advertising, Subscription)
  - Non-revenue generating (for example promotional or cost saving)
- **What is considered a successful outcome and how will you assess it?**

Planning the UCD process

- Formulate SMART **objectives** for the website
- Formulate **strategies**
- What **resources** are available? (people, equipment etc...)
- What **methods/processes** will you adopt?
- What is your **schedule?**
- What is your **budget?**

…UCD gives you a rich toolkit of methods, from informal low cost "guerilla" methods to thorough research.

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Understanding the organisation

- **What are the politics of project?** (Don't underestimate the importance of politics!)
- **What decision structures are there?** (WHERE does the power lie?)
- **Who are the stakeholders?** (WHO has a vested interest in this project?)

- **A good Project Initiation Process** helps to clarify some of those things.

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Understanding stakeholders & their objectives

- **Get to know people.**
- Have **one-to-one** meetings.
- **Listen to them.** Don't spend the time telling them about all your great ideas!
- When you need to, communicate your ideas clearly and effectively.
- Establish **common frames of reference between** stakeholders.
- **Identify conflicts.**
- **Get buy-in.**

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Some things to ask stakeholders...

- What's your **involvement?**
- **Why do you want to do this** project?
- How do you think this could **benefit the business/organisation?**
- What would be the **best possible outcome?**
- What do you fear **could go wrong?**
- How would you like to be **involved/informed?**
- What are your **key objectives?**
- What is your (departments) **strategy** for the next year/five years?
- What **motivates** you to do this?
- Etc...

More on stakeholder workshops

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Types of Stakeholders

- Decision makers
- Gatekeepers
- Beneficiaries
- Workers

Think how, why and when to involve them in the design process:
- Direct involvement at defined points/throughout?
- Highlights and snapshots only?
- Reports and recommendations?
- Setting priorities?

This has to be part of your **communication plan...**

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PROJECT TIMELINE

EVALUATION

DISCOVERY & RESEARCH   DESIGN & CONTENT CREATION   BUILD

*Regular touch points with relevant stakeholders
prevent unwanted surprises further down the road.*

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Task: Client survey

- Open this <u>client survey</u> and **apply it to your project**
- If you have a client, then you can use this and the workshop link to be the basis of client interviews
- If you don't have a client, then the survey will help you identify what your goals for the website are

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Competitor evaluation

- Looking at other companies products is a great source of inspiration…
- Get lots of **photos/screenshots**
- **Compare** features and functionality
- Pick out the **stuff that works well**

- There is **no point in re-inventing the wheel**
- Design is **evolutionary** process; no one designs everything from scratch
- Competitor evaluation lets you **identify what the state-of-the-market is**
- **Your business goals will tell you whether you can match them or whether you need to set a new standard**

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Competitor evaluation

If you can, print out screenshots and put them on the wall. Identify trends and common themes, unusual ideas and things that do or don't work well.

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Task: Conduct competitor evaluation

- Identify some competitors for your website, or failing that for Ocado.com

- Use the 6 layer model of user experience as headings for a competitor review
  - Proposition
  - Concept
  - Structure
  - Information
  - Interaction
  - Appearance

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3.1.4 User research

So who are your users?

You are not your user!

Your client is not your user!

Your client is not your user!

Really important point!

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Understanding your users

- Initial business analysis usually identifies the general types of users.
- In a business context, **marketing departments often have a good overview of users.**

- We need to find out more detail, though…

User research

- **Setting research objectives**
- **Techniques for research**
  - Lab Interviews
  - Surveys
  - Contextual Interviews & field research

- We will cover just three of many **…**
  http://www.usabilitynet.org/tools/methods.htm

Research objectives: Things you can find out about your users

- **Skill** levels (expert or novice?)
- **Likes and dislikes**
- **Product usage** patterns & product-related desires
- **Vocabulary**/language
- **Environments** (connection speed/browser/hardware/shared or exclusive use?)
- **Social** and economic factors

More specific research objectives

- What do users *want*? (user preferences)
- What do users *do*? (user behaviours)
- What do users *need*? (gap between user desire and their current behaviour or tools)
- What do users *feel*? (emotional responses)

- Our aim is to develop an **understanding of our users** and the way they carry out their tasks.
- Focussing on **what users need and what they currently do** is more productive than asking users what they want.

The danger of asking users what they want…

The danger of asking users what they want…

- Often users **voice a perceived need**
- Users often **do not mention some requirements** assuming they are obvious

- You can only address this issue by grounding the discussion in users' real world behaviour

- Users also **will not appreciate technical possibilities** (or impossibilities) **nor your client's needs**

Method 1: Interviews

- **You can get users in a lab** (or any other place) and involve them in activity sessions
- Ask users to explore their habits and decision making processes by using **games, sketching, interviewing** and **web surfing** in the lab
- Helps users to **recreate their actual experiences** even though they are out of their everyday environment

Use this method as:
- **A quick and cost-effective** approach to understand **goals, attitudes** and **behaviours** where you can reproduce what you need in a lab

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Planning interviews

- Set your **goals for your research**
- Write a **discussion guide**
- **Don't stick to the discussion guide!** It is a resource for an open conversation, not a survey
- Take a few notes but if you need a good record of the interview record it, don't try to transcribe while you're reading

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Research goals for a travel website

Brief from client
- What are the key features in a booking engine?

- How can we best sell hotels to people who come for flights?

- Can we improve customer retention with (cheap) after-sales service?

Research goals
- What do users want to do on a booking website?
- What do users think of features in competing booking engines?
- How do users choose hotels at the moment?
- What makes up a trusted recommendation for a hotel?
- What is the whole travel experience like for the user?
- What are the key moments of frustration or pain in this?

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Discussion guide: a common structure

- **Set expectations** for the session – time, recording, payment
- Get some background information and have a chat to **build a rapport** – this is one place where it's OK to reveal your own opinions
- Understand their real life by talking about **relevant behaviour offline –** remember to identify needs through current behaviour
- Start with general topics and then move naturally into more detailed ones
- Ask about **current internet and computer usage**
- Close the interview by asking for any last comments or questions

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For a travel booking website…

- When was the last time you went overseas?   ➢ Set the scene
- Where did you go? Why?   ➢ Motivation
- Why did you choose the place you went to?   ➢ Motivation
- What kind of holidays do you like?   ➢ Preferences
- Tell me how you went about finding the   ➢ Research
  holiday …
- How many sites did you visit? When did you   ➢ Booking
  know when to book? …
- Tell me about the day you took the flight…   ➢ After-sales

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Exercise: Write a discussion guide

- Your client wants to launch a DVD mail rental service. Write a discussion guide to get information about:
  - Current movie-watching behaviours and practices
  - What information about the movies the website should display
  - How movie recommendations should be presented
  - What additional features should the website include?

- Remember to start by setting the scene and building rapport

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Method 2: Surveys

- Surveys are a great idea if the website already exists and has an audience
- Many web-based tools have made surveys a very practical and cost-effective method

Survey questions: some terminology

- **Closed questions have a limited number of choices in response**

I am very satisfied with my current insurance company:				
Strongly Disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree

- **Open questions require the user to write a response in their own words**

  What is your relationship with your current insurance company like?

Differences in question types

- **Closed questions** are much **quicker to analyse** and provide a snapshot response of what is important to the users

- **Open questions** can gather a lot **richer information** from users, but they need a lot more time in analysis

Types of Survey Questions

- All surveys should collect **basic background information**
  - Demographics (age, gender, etc)
  - Experience with technology (how many years have they used the internet, how confident are they)
- Questions can also ask about **current patterns of use**
  - Descriptive: How often users visit, how long they stay for
  - Intent: What they are looking for, whether it was found
- A final type of question to include is **attitudes or evaluations of the website**
  - Overall Satisfaction: Did the user's experience meet their expectations?
  - Drivers of satisfaction: What are the individual parts of the website that did or didn't meet their expectations?

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General rules on writing survey questions

- Each question must have a single idea and be clearly worded. Avoid jargon or technical terms.
- Give clear instructions about how users are meant to respond to the questions. (e.g. 'check one')
- Where you are measuring opinions, include an 'N/A' rating to avoid forcing people to rate experiences they didn't have
- Order questions to move from general topics to specific ones

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Two most important aspects of writing Surveys

- **Keep the survey as short as possible**
  - Any survey more than 10 minutes will begin to bore your users and affect data quality.

- **Always pilot your surveys with representative users**
  - This will help make sure that your question wording is clear and unambiguous

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What's wrong with these survey questions?

- **State your age in years:** [ ]

- **How long have you used the internet?**
  [ ] **> 1 year**   [ ] **1-3 years**   [ ] **3-5 years**   [ ] **5+years**

- **How useful is the internet to you?**
  _____
  _____

What's wrong with these survey questions?

- **State your age in years:** [ ]

  > Asking users to select from a range of ages (eg 15-19; 20-25 etc) means less analysis work and greater likelihood of users giving this personal information

- **How long have you used the internet?**
  [ ] **> 1 year**   [ ] **1-3 years**   [ ] **3-5** s

  > What if I've used the internet for 3 years? Don't use overlapping ranges

- **How useful is the internet to you?**

  > Good opportunity for a closed question. Or use different wording like "How is the internet most useful to you?"

Survey wrap-up:

- This section covers only the basics of survey design and analysis. This is a detailed topic that will reward a lot of attention

- **Surveys and interviews can are complementary methodologies**, where possible you should use both.
  - Use surveys before interviews to identify who is using your website at the moment
  - Use surveys after interviews to follow up interview results and check the relative size of your findings

Method 3: Contextual research & field studies

- Context: the **human, physical, organisational, historical and social environment** in which a product is used
- These variables can determine **how technology is used** & how **work is carried out** that appears to be similar
- Degree of fit between context-of-use and product design **influences uptake**

- Understanding the context of use is therefore **vital for effective user-centred design**

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*"What people say,
what people do,
and what people say they do
are entirely different things"*
Margaret Mead

http://www.flickr.com/photos/whiteafrican

http://www.flickr.com/photos/elroin6900

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Society
Organisation
Environment
Workspace
Technology
Equipment
Task
Person

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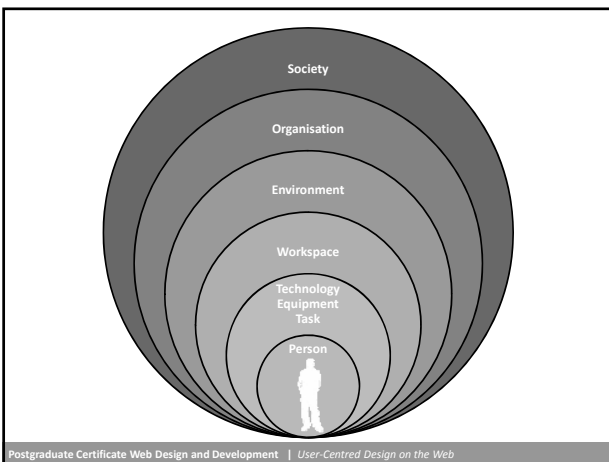
Contextual Inquiry

- **Observe and interview** users in context of their work to see **what users do, not what they say they do**
- *"go where the user works, observe the user as he or she works and talk to the user about the work."*

Use this method to get:
- Deeper insight into **motivations and behaviours**
- An understanding of user goals and needs, in particular the **unsatisfied or unarticulated**
- Identify **problems and work-arounds**
- Understand **organisational and environmental factors**

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Contextual Inquiry

Master - Apprentice model:

Avoid interview/interviewee or novice/expert situation

Based on four core principles:
1. **Context** – all work is observed in its context
2. **Partnership** – no "interviewer" situation
3. **Interpretation** – the researcher interprets the observations and shares them with the user to validate
4. **Focus** – on concrete data & tasks

User research recap

- **Interviews**
  - Relatively cheap, easy to run and easy to extract data
  - Hard to get large numbers, limited ability to generalise
- **Surveys**
  - Good for existing websites and large numbers of users, even international, can be cheap
  - Great care needed for set-up, analysis and avoiding bias
- **Contextual Inquiry**
  - Unbeatable for complex or unfamiliar situations or identifying unmet needs
  - Lots of data, a lot of which will not be relevant; highest cost

3.1.5 Analysing user research data

Analysing data

Affinity sorting help identifying common themes in your research

Create a wall of data

- Go through your notes or recordings and write post-it notes for each and every meaningful participant comment
  - Write in the users' voice - "I don't like package holidays because they're too expensive"
  - Write your own insights and questions in a different colour

- Writing all the relevant user comments by hand is the single best way to **get an real empathy for your users**
- After building the wall of data, **start grouping the post-its so that similar post-its are together.** Group by common **goals, behaviours, attitudes, activities,** etc.
- **Involve other people** in this analysis to check your assumptions

Analysing data from user research

Analyse:
- User outlook and perspective, their building blocks for a mental model
- Goals
- Behaviours
- Processes & tasks
- Social interactions
- Physical environment

….and distill into **personas, scenarios, lists of requirements etc**

Personas

- **Personas** are a way to **sum up user research** into archetypical **user representatives,** describing **goals, attitudes, motivations** and **key design challenges**
- They **merge many sources of data** into a format that drives successful design
- **Build consensus** about who the target users are and **avoid self-referential design**
- Allow to quickly **explore or validate design decisions**

Personas – Behavioural variables

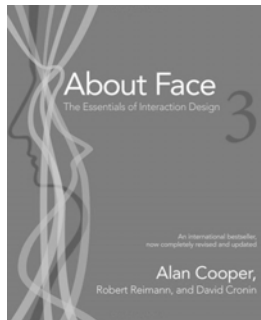Map your personas to the behavioural variables identified in your research:
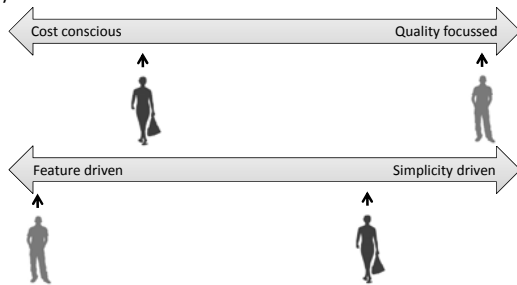
Cost conscious   Quality focussed

Feature driven   Simplicity driven

Personas – Goals, attitudes and motivations

Define the goals of your personas based on your users research:

- **End goals:** What outcomes they want to achieve
- **Experience goals:** How users want to experience your product or service
- **Life goals:** What users want to achieve in their life
- **Attitudes,** what **motivates** and what **annoys** them
- How they **relate to the organisation**
- What makes them a **design challenge**
- **Their outlook in a single sentence or metaphor**

About Face 3

The Essentials of Interaction Design

An international bestseller, now completely revised and updated

Alan Cooper,
Robert Reimann, and David Cronin

Scenarios

Scenarios are user stories that describe the steps users go through to satisfy their goals:

- **Task scenarios** describe what users are doing currently
- **Use scenarios** describe how users will perform the same task using your product or service

- Task scenarios should contain information about **the user, his goals, actions, objects used** and **information needed,** set in **context.**

- Task scenarios help you to define functional requirements and to find gaps in the current offering

Documenting scenarios

- Use scenarios are effective to describe system requirements in a way that keeps the user at the heart

- Choose the right way to document your stories. There are a number of options:
  - Narrative stories
  - Flow diagrams
  - Use Cases

Gap analysis

Mapping a persona's scenario against site functionality help identifying gaps in the functions and information offering

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Task analysis

Task analysis is the breakdown **of (complex) tasks into a sequence sub-tasks (actions).** Pay attention to:
- Frequency
- Level of skill required
- Knowledge required
- Environment
- Safety
- Switching with other tasks
- Social context

Task analysis allows you to:
- Diagnose problems or inefficiencies
- Gather requirements

Task: Create a persona for your project

Task: Create a persona for your project

1. **Create some behavioural dimensions** based on your research to date. If you don't have any, use your best guess (Worksheet 1)
2. **Create a persona:** Goals, attitudes, motivations and some demographic data (Worksheet 2)

Under normal circumstances a persona should be based on thorough user research, but for today we can make some stuff up…

Requirements

Based on the business requirements gathered and user research conducted, you should be able to start thinking about:

Functional requirements: What your product must do
- Specifications of the system's functionality
- Actions that the system must take (verbs)
- Not a quality e.g. 'fast'

Non-functional requirements: a quality your product must have (look and feel, usability, performance, operational, maintainability & portability, security, cultural & political, legal)

Summary

We talked about:
- The importance of **user mental models** in user experience
- The need to understand **business requirements,** organisational factors such as **stakeholders** and the **market**
- User research methods: **Contextual inquiry, lab interviews and diary studies**
- Ways of summarising this research: **Personas, Storyboards, Task analysis** and **Scenarios**
- **Types of requirements**