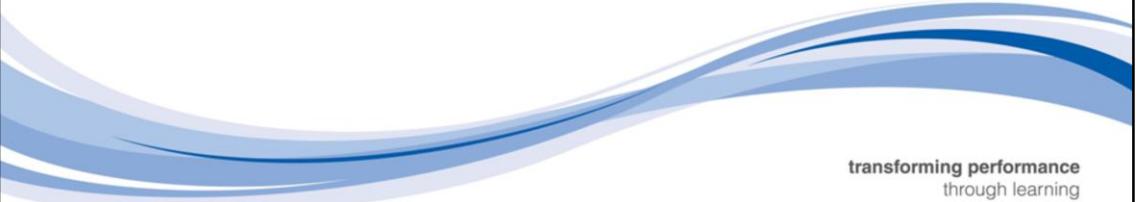




UX Fundamentals

The Strategy Plane



A decorative graphic at the bottom of the slide features several overlapping, flowing blue and white curved lines that resemble waves or clouds.

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Introduction

- **Objectives of the strategy phase**
 - Incorporating business goals
 - Understanding brand identity
 - Success metrics
- **Understanding user needs**
 - Understanding personas
- **Research methodologies**
 - Gathering data
 - Qualitative vs. Quantitative

The Strategy Plane

- **The strategy plane determines initial scope**
 - It defines what the developer and users want from the product
- **It is summed up by two simple questions:**
 - What do we want to get out of this product?
 - What do our users want to get out of it?
- **The answer give us the product objectives & user needs**

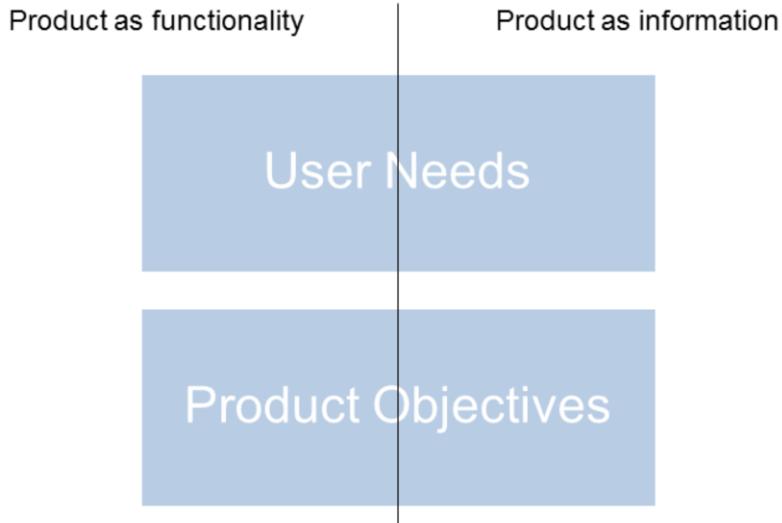
Strategy Phase Deliverables

- **Within the strategy phase we need to identify the following:**
 - Product Objectives
 - Business Needs
 - Branding
 - Success Metrics
 - Personas
 - User Needs
 - User Research
 - State of the Art



Objectives

- **There are two key objectives to the basis of UX/UCD research**
 - What do we want to get out of our product?
 - What do our **users** want to get out of our product?



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There are two key questions that need to be raised that identify the objectives and set the scope of the strategy phase. The product objectives come from within the organisation. The user needs come from the external user imposed from outward forces.

Business Goals as Product Objectives

- **Business goals define the internal strategic objectives**
 - These can be very general and tend to fall into two categories
 - Save the organisation money
 - Make the organisation money
 - Of course how they do this is not necessarily clear
- **Teams have difficulty taking off the employee hat**
 - Create focused objectives over general terms
 - How do they benefit the business
 - What functionality do you want to achieve
 - Set out the conditions for success
 - But not the path to get there



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Product Objectives – Brand Identity

- **Understanding your Brand Identity is critical to success**
 - This is not the same as branding – logos, style guides etc. come later
 - The brand is beyond the visual and is an **emotional** reaction
 - A set of conceptual associations
 - Inescapable in the minds of your users
 - Created by interactions with your product
- **Will that impression happen by accident or design?**
 - Most organisations exert some control over brand perception
 - Every organisation, and every product has brand identity



Talking Point – Brand Identity



- All organisations have brand identity lets identify some choose:
 - Two technology companies
 - Two not for profit organisations
 - A non technology company
 - A government organisation
 - A piece of software
 - Identify the message you think they are trying to impart
 - Identify how you feel about them
 - Is this by design or by accident?
 - Identify any improvements you think you could make

Exercise – Branding

Example 1

Focus on the user and all else will follow
It's best to do one thing really, really well
Fast is better than slow
Democracy on the web works
You don't need to be at your desk to need an answer
You can make money without doing evil
There's always more information out there
The need for information crosses all borders
You can be serious without a suit
Great just isn't good enough

Example 2

Pride in Craftsmanship
Be fast and fluid
Authentically digital
Do more with less
Win as one

Example 3

If everyone is busy making everything, how can anyone perfect anything?
We start to confuse convenience with joy, abundance with choice.
Designing something requires focus.
The first thing we ask is; What do we want people to feel?

- Delight
- Surprise
- Love
- Connection

Then we begin craft around our intention.

It takes time...

There are a thousand no's for every yes.

We simplify, we perfect, we start over, and until everything we touch enhances each life it touches.

Only then do we sign our work

Success Metrics

- **Setting success metrics for a project allow you to set a finish line**
 - Set your goals and your constraints as part of the strategy
 - We should revisit these metrics during and after the development
 - To show worth of the UX process and its achievements
 - Expect resistance and misunderstanding when first using UX
- **Metrics can be related to the product and how it is used**
 - This could include
 - How long a user spends on a site
 - Conversion of visits into purchases
 - Improved ad revenue
 - Improvement of user satisfaction stats
- **Improved UX on your site is only part of the job**
 - You need to get metrics on feeders to your product
 - Social networking can also help

User Needs

- **Identifying user needs is complicated – needs are diverse**
 - Even internal projects are subject to this issue
- **To achieve effective user centred design we must identify our users**
 - We need to understand:
 - Who they are, where they are and what they want
 - How are we reaching and engaging with them
- **We do this by observing their behaviour**
 - Examine behaviour
 - Gather data
 - Empathise with your users

User Research

- When designing any system, you must understand why a user uses it the way they do
- This means understanding;
 - What it is that a user is trying to do
 - The reasons that they want to do what they are trying to do
 - Why they think that what they are doing should do what they believe it will do.

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When designing any system, you must understand why a user uses it the way they do. This includes understanding what it is that a user is trying to do, the reasons that they want to do what they are trying to do, and why they think that what they are doing should do what they believe it will do.

Starting to Research – Data, Data, Data

- **All UX analysis required data it is key part of requirement analysis**
 - How, what and why we gather data is the question
- **The data must be about users – you are not a user**
 - As we begin to identify data do not ‘self design’
 - By mentally jumping to conclusions
- **We are aiming to gain insight through our user data**
 - Be careful not to gather data to persuade the organisation
 - The data must be about what the user thinks
 - Not what you want them to think

Starting to Research – Methods of Gaining Data

Data	Technique	Uses
Preference <i>Opinions, likes/desires</i>	Surveys Focus Groups Preference Interview Card Sort Customer Feedback	Visual Design Branding Market Analysis Advertising Campaigns
Evaluative <i>What is understood or accomplished with a tool</i>	Usability test logs Analysis Card Sort Customer Feedback	Interaction design Functionality Screen Layout Nomenclature
Generative <i>Mental environment in which things get done</i>	Non-Directed Interview Contextual Enquiry Mental Model Ethnography Diary	Navigation & Flow Interaction design Alignment and Gap Analysis Contextual Marketing

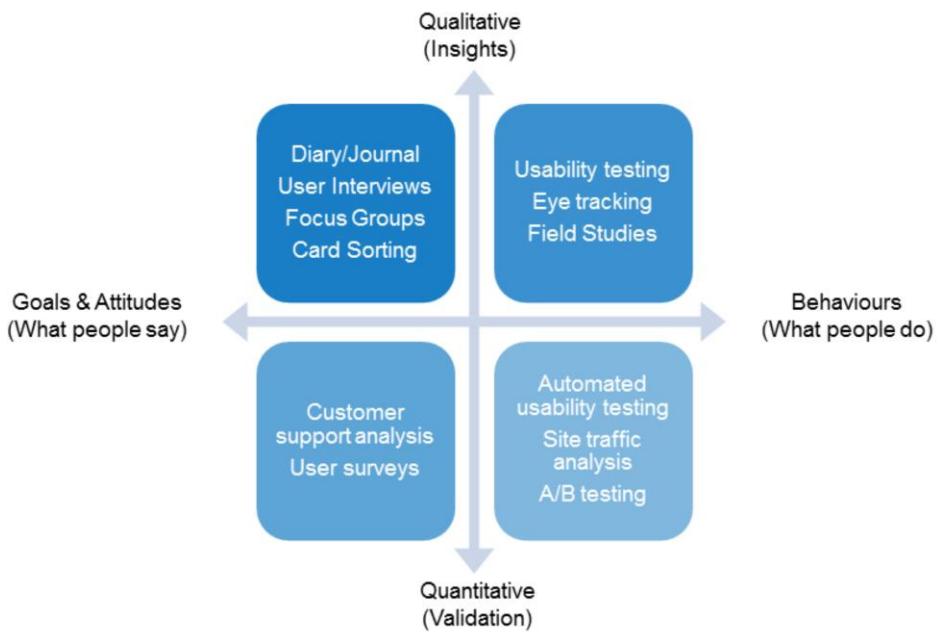
15

There are different techniques we can use to generate data most are grouped into the categories laid out above. Preference testing is the most widespread and used in a wide variety of ways e.g. *online questionnaires, marketing research user satisfaction surveys*. Preference based research is a very valuable way of gain a large volume of data.

Evaluative Research has grown in popularity in recent years – decision makers often ensure products are tested before they reach market. This can make a significant difference to bottom lines where the user is understood before products are released to market. Specifically evaluative research is often conducted to improve existing interaction functionality and the visual design of screen layout for software.

Generative Research in software design is a newer consideration in software engineering – it explores the mind space of someone doing something. It focuses on higher level thinking and internalised behaviours that re difficult to create metrics of, unlike the other two techniques. Data gathered in this phase can be used very effectively to create a micro, qualitative data approach based upon users and their preferences.

Qualitative vs. Quantitative Data



Understanding Quantitative and Qualitative Research

- There are two broad types of research and results to any research that UX designers undertake:

- Qualitative research is concerned with the “quality” of something

 <http://provalisresearch.com/qualitative-research-software/>

- Quantitative research is concerned with results that can be measured with solid numbers and statistics

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Understanding types of research

There are two broad types of research and results to any research that can we can undertake; qualitative and quantitative.

Qualitative research is concerned with the “quality” of something (e.g. whether a user had a “positive” opinion of a change in the navigation of a website).

Quantitative research is concerned with results that can be measured with solid numbers. (e.g. the improvement in navigation speed from that website navigation design change).

Quantitative research and results is easier to understand, and because it is fairly straight forward (does this take more or less time? Does it increase or reduce the number of clicks required? How many people actually use this feature? Etc.) we will not cover this in depth.

Qualitative Research

- **Types of Qualitative Research commonly applied to User Experience**

- Ethnographic Interviews
- Focus Groups
- Card Sorting

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Types of Qualitative Research commonly applied to User Experience:

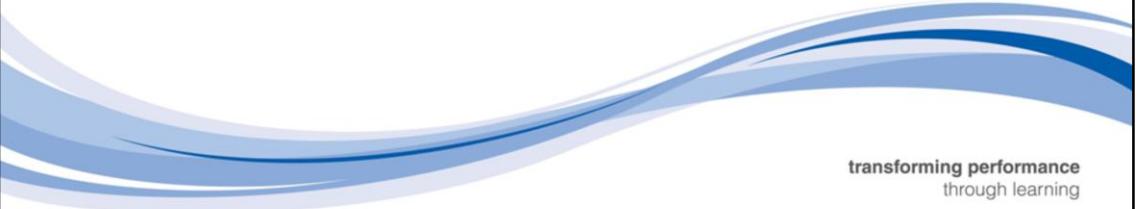
- Ethnographic Interviews
- Focus Groups
- Demographics
- User/Usability Testing
- Card Sorting
- Task Analysis

Review

- **The strategy phase sets out the core user journey for a product**
 - It begins to build and categorise users
- **The UX experience should be aligned to business goals**
 - But focused on the user
- **Data allows you to justify decisions**
 - Quantitative data can often be turned into qualitative data



Psychology of Users



A decorative graphic at the bottom of the slide features four parallel, flowing blue lines that curve upwards from left to right, creating a sense of motion.

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Introduction

- **Identifying some key concept in user psychology**
- **Understanding cognitive limitations**
 - Inattentiveness
 - Memory limits
 - Field of view
 - Multitasking
- **Different types of users – the aging brain**
- **Content considerations**
 - Voice
- **Understanding the user**

User Psychology

- **Users scan screens based on past experiences and expectations**
- **They also identify objects by recognising patterns, so maintain consistency**
- **People believe that things that are close together belong together**
 - So make good use of whitespace
- **Colour meanings vary by culture, so do not rely on colour alone**

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User Psychology

Cognitive Limitation – Inattention Blindness

- Possibly the most common is inattention blindness



Cognitive Limitation – Inattention Blindness

- It is sometimes known as Change Blindness



Cognitive Limitation – Useful Field of View

- A user will decide what screen content is about after only a quick glimpse of it through their peripheral vision



- You use peripheral vision more than your central vision for quickly getting the gist of what you are processing visually

- Central vision is important for processing detail

- Information in the peripheral vision is important for processing the “big picture”



- Blinking or animated elements in peripheral vision are

- Going to grab attention
 - Potentially very annoying

Cognitive Limitation – Useful Field of View

- If you want a user to concentrate on a particular area of a screen, do not put any animation or blinking elements in their peripheral vision
- Blinking images in our peripheral vision are potentially annoying
- But they are extremely effective at getting our attention even though we are concentrating elsewhere



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This is an evolutionary leftover; movement in our periphery could be the difference between death and survival if a predator was sneaking up on our ancestors.

Cognitive Limitation – Memory Limitations

- You only remember 4 things reliably e.g. consider a phone number.
 - People often clump them into given in batches of 4



Cognitive Limitation – Memory Limitations

- There are limits, and you are unlikely to be able to remember a complex number
- You are much more likely to recognise it from a list

Emergency number

0118 959 776 188 118 6573

0118 999 881 999 119 7253

0116 911 332 189 999 4752

- Information needs to be used to be remembered effectively



- Memories are not like photographs; they are not an accurate capture of the information, but are recreated every time you recall a memory, and as such are inherently unreliable and error prone

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The correct number is 0118 999 881 999 119 7253

It is easier to recognise than it is to recall

In fact, the most vivid memories are usually the least accurate.

Cognitive Limitation – Multitasking

- What we need to consider about multitasking



Cognitive Limitation - Multitasking

- **The exception.**
 - Physical tasks that the user does often and (e.g. walking) can be done whilst engaging in a mental task
 - There is still a negative impact on your performance
- **When driving a vehicle, it is not the act of holding a phone to your ear that makes you more likely to have an accident, but the conversation that is consuming part of your attention**



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Physical tasks that the user does very, very often and are thus good at (e.g. walking) can be done whilst engaging in a mental task.

Maybe:

If you are “walking and talking” you are much more likely to collide with somebody or something.

The Ageing Brain

- **As a person grows older their brains processing speed slows down**
 - There is a speed and accuracy trade off over time
 - Younger brains will process information faster than an older brain
 - Older adults will take longer, but they are more precise and less error prone
- **The useful Field of View narrows as peripheral vision is excluded**



Content Considerations (1)

- **What are the user expectations going to be?**
- **Does the layout suggest anything to the user due to the context?**
- **Does your design enhance the content, or does it detract from it?**

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What are the user expectations going to be?

- How does the design match up to expectations built elsewhere in the product?
- How does the design match up to expectations built outside of the product such as other products on the market or your marketing materials?
- Is the product being targeted at a market segment that would expect certain concessions? E.g. large high contrast text for an app targeted at the visually impaired.

Does the layout suggest anything to the user due to the context?

E.g. Does the placement of text suggest a connection to a picture that it should not?

Does your design enhance the content, or does it detract from it?

E.g. did you underline plain text in a hyperlinked document?

Did you remove the underlines from links from a website?



Content Considerations (2)

- **Why do users use your product?**
 - If your product is a website; why do they come to your site?
- **What are the objectives of your product?**
 - The product's purpose?
 - The user's purpose (task and/or goals)?
- **Does content need to be there?**
 - Is it obvious?
 - Is it self explanatory?
- **Can I get rid of it?**
 - Less is more.

33

Why do users use your product?

If your product is a website; why do they come to your site?

What are the objectives of your product?

The product's purpose?

The user's purpose (task and/or goals)?

Does content need to be there?

Can I get rid of it?

Less is more.

Active Voice vs. Passive Voice

- **Active Voice**
 - You need to restart the computer
- **Passive Voice**
 - The computer needs to be restarted
- **Both are valid**
 - But you need to be consistent
- **Different languages will have different rules regarding active vs. passive voice**

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Active Voice

You need to restart the computer

Passive Voice

The computer needs to be restarted

Both are valid

If you expect the user to be in full control of the system, prefer active voice

But you need to be consistent.

This does not mean that you need to use all passive or all active voice, but the ways you use active and passive voice must be consistent.

If something can possibly be taken to mean that the user has made a mistake, use of PASSIVE voice is recommended. E.g. do not say “You have entered invalid data” but prefer “the entered data is not valid”.

Different languages will have different rules regarding active vs. passive voice

Keep an eye on this during localisation and do not assume that it will be taken into account.

Readability

- **Cut unnecessary words**
- **Use verbs for actions**
 - “Data retention is a legal requirement” becomes “We are legally required to keep this data”
 - “Denial of access to your server will delay our database maintenance efforts” becomes “If you deny access to your server, we will be unable to maintain your database”



Look for	Example	Change to
-al	Denial	Deny
-ance	Maintenance	Maintain
-ment	Requirement	Require

35

Cut unnecessary words

As always; cut the unnecessary

Use verbs for actions

“Data retention is a legal requirement” becomes “We are legally required to keep this data”

“Denial of access to your server will delay our database maintenance efforts” becomes “If you deny access to your server, we will be unable to maintain your database”

Readability

- **Use vocabulary that most secondary school children can understand**
 - Where possible; There will be times when terminology will be sector specific
- **Even when using specialised language, keep as much of the vocabulary as simple as possible** 
- **You may have many users with low literacy levels**

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Use vocabulary that most secondary school children can understand

Where possible; There will be times when terminology will be sector specific.

If you are creating medical software that is used only by trained medical staff for tasks involving specialised language you can use that language.

Even when using specialised language, keep as much of the vocabulary as simple as possible.

Everyone reads simple, short, common words faster.

You may have many users with low literacy levels.

Readability

Try to replace this...	...with this
obtain	get
prior to	before
purchase	buy
request	ask for
subsequent	next
terminate	end

Hypertext and Linking

- **Always underline hyperlinks**
- **Never underline plain text**
- **Use bold and italics sparingly**



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Always underline hyperlinks

- The trend for removing the underline is terrible. It relies on well calibrated monitors to show hyperlinks differently from regular text, and most monitors keep the pre-set it came out of the box with. They are often set up to make a more attractive show floor pitch than effective real world use and do not compensate for lighting conditions.

Never underline plain text

- You make regular text look like a hyperlink

Use bold and italics sparingly

- Emphasis needs to be used sparingly, or it is no longer emphasis. Used too often it starts to look messy and cluttered. This makes it more difficult to read or take seriously

How Not To Do It

Dr Gene Ray is the Greatest Philosopher and is the Greatest Mathematician.
www.TheWisestHuman.com



Cubic Harmonics
 Only Cubic Harmonics can save humanity. Cubic Harmonics will pacify all religions.
96-hour Cubic Day
 debunks 1-day unnatural god
96-hour Cubic Day
 debunks 1-day as witchcraft.
Human day vs Unnatural day and Academicians are teaching - pseudoscience.
Worshipping a Word God will destroy the USA.

WARNING —
 Ignore Cubic Math at your own peril, and of humanity.
 You have a god like brain - parallel opposite & analytical, wasted if you believe in ONE.

 The primary purpose for Education is not Subject matter, but subservience to accept any crap taught without opposing thought, destroying opposite brain to be submissive android. You're taught to be stupid.
 Dr. Gene Ray, Cubic & Wisest Human

Mathematician.
www.TheWisestHuman.com



Cubic Harmonics
 Only Cubic Harmonics can save humanity. Cubic Harmonics will pacify all religions.
96-hour Cubic Day
 debunks 1-day unnatural god.
96-hour Cubic Day
 debunks 1-day as witchcraft.
96-hour day will disprove disunity god. Academicians are teaching - pseudoscience.
Worshipping a Word God will destroy the USA.



- **This uses hypertext that is**
 - Underlined
 - In Bold
 - In Italics
- **It uses overly complicated vocabulary**
- **It looks a mess**
- **There are no hyperlinks**

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If your website has any similarities in design to <http://www.timecube.com/> then you are probably doing it wrong.

Emphasising Elements

- **Do not emphasise too many things at once.**
 - Ideally you will only emphasize one thing at a time with each emphasis type
 - **Blinking objects are extremely effective, but risk annoying users**
 - **Space elements apart from each other**
-  ▪ Anything that makes something look different from everything around it will draw the users attention

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Anything that makes something look different from everything around it will draw the users attention

- You can do this with font types, colours, shading, animation, drawing a box around something, underlining it, using a bold or italic font, or even with sound. So long as there are not too many things vying for the attention the user it will be emphasised by it's difference.

User Psychology

- Comprehension is not the same as reading; error dialogues are often readable but incomprehensible
- Reading speed is quicker with long line lengths, but people prefer short line lengths
- Danger, sex, movement, faces and stories get the most attention

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Comprehension is not the same as reading; error dialogues are often readable but incomprehensible.

- All too often it will be perceived as though it might be asking if you would like to lose your work now, or in a minute.

Reading speed is quicker with long line lengths, but people prefer short line lengths.

- Do not argue with the reader; it does not matter whether what they believe to be true is in fact true. The fact that it looks like it will take less time means that they are more likely to read the information.

Danger, sex, movement, faces, and stories get the most attention.

User Psychology

- **People are more motivated the closer they are to the goal**
- **People are addicted to dopamine, which they get from seeking information**

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People are more motivated the closer they are to the goal

This is why a visual progress bar is important. The user can see that they have progressed, and they can see the bar rise.

The “goal” can be almost anything. In some cases, it is not even anything more than an abstract concept (e.g. grinding for loot or XP in games is based on a long and drawn out version of this principle)

This is how loyalty cards operate

People are addicted to dopamine, which they get from seeking information.

User Psychology

- **Intrinsic rather than extrinsic rewards are the best motivators**
- **People are inherently lazy**
 - E.g. People only look for shortcuts if they are easy
- **People are motivated by autonomy**



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- An intrinsic reward is an outcome that gives an individual personal satisfaction such as that derived from a job well done
- An extrinsic reward is an outcome that is expected by the user and does not lead to greater satisfaction

Intrinsic motivation refers to motivation that is driven by an interest or enjoyment in the task itself, and exists within the individual rather than relying on external pressures or a desire for reward. Students who are intrinsically motivated are more likely to engage in the task willingly as well as work to improve their skills, which will increase their capabilities.

Students are likely to be intrinsically motivated if they:

- attribute their educational results to factors under their own control, also known as autonomy
- believe they have the skills to be effective agents in reaching their desired goals, also known as self-efficacy beliefs
- are interested in mastering a topic, not just in achieving good grades

User Psychology

- **Intrinsic rather than extrinsic rewards are the best motivators**
- **People are inherently lazy**
 - E.g. People only look for shortcuts if they are easy
- **People are motivated by autonomy**



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Extrinsic motivation refers to the performance of an activity in order to attain an outcome, whether or not that activity is also intrinsically motivated. Extrinsic motivation comes from outside of the individual. Common extrinsic motivations are rewards (for example money or grades) for showing the desired behaviour, and the threat of punishment following misbehaviour. Competition is an extrinsic motivator because it encourages the performer to win and to beat others, not simply to enjoy the intrinsic rewards of the activity. A cheering crowd and the desire to win a trophy are also extrinsic incentives.

People are motivated by autonomy.

- People like to feel like they are in control
- Making the user feel like they are in control motivates them to continue using a system; they feel that they are a vital part of the machine rather than a completely replaceable cog

Knowing the User

- **Who is the user?**
- **What are they doing?**
- **What do they want to achieve?**



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You will need to ask yourself three questions whenever you engage in User Experience design. These are the three core questions upon which everything else is built.

Who is the User?

- Who are the users? What do they know and what can they learn? 
- What sort of background to the users come from?
 - Are they highly IT literate?
 - Do they only know enough to fill in cells in Excel?

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Who are the users? What do they know and what can they learn?

- How much training will they need?
- What documentation is available to support the user, and will they be able to find what they need?

What sort of background to the users come from? Are they highly IT literate, or do they only know enough to fill in cells in Excel?

- How many errors do the users make when trying to use the software, and can they recover from those errors?
- Does the software help the user recover from those errors?
- Does the software meet the usability requirements of disabled users?

What Are They Doing?

- **What tasks do the users want and need to do?**
- **What conditions will they be working in?**
- **Can users accomplish their tasks at the required or desired speed?**

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What tasks do the users want and need to do?

- Are there substantial differences between the approach needed for different tasks, or will a one size fits all solution work?

What conditions will they be working in?

- Is it highly time sensitive?
- Do they do this as the entirety of their job?
- Are they only doing this occasionally?

Can users accomplish their tasks at the required or desired speed?

What Do They Want To Achieve?

- **Why are they doing this?**
- **What are the central motivations that drive them?**

How to Anticipate User Needs



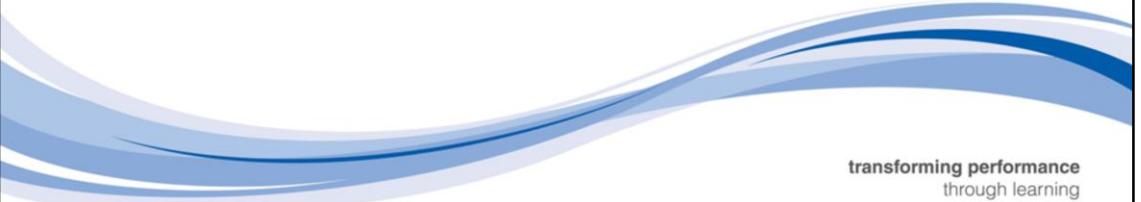
- **User Personas**
- **Card Sorting Exercises**
- **Tree Tests**
- **Asking them!**

Review

- **Users are not systems**
 - We will aim to quantify them but they are unique
- **Understanding limitations of psychology**
 - We need to be perpetually aware of these behaviours



Interviewing



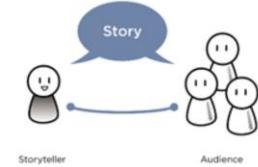
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Introduction

- **The importance of the interview**
 - Why interview
- **How to interview**
 - Brain dumping
 - Forming questions
 - Asking questions
 - Body language
- **Conducting the Interview**
 - Documenting the interview

Why Interview?

- Interviews provide an insight into the user's perspective
- There are key steps to the process:
 - Deeply studying people, ideally in context
 - Exploring behaviours and the meanings behind them
 - Making sense of the data using inference, interpretation and analysis
 - Using insights to point towards a design, service or product
- Within UX this is often called an Ethnographic Interview
 - Research focusing on cultural phenomena
 - An ethnography represents the culture of a people graphically
 - Concerned with capturing the social meanings and ordinary activities of people in naturally occurring settings



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A Framework for Interviewing – Brain dumping

- **Interviewing is an art form that takes time to master try to:**
 - Leave your world view at the door
 - It is about the user
 - Start with a Brain Dump
 - Get all ideas out of peoples head and onto the table
 - Emphasise this is not right or wrong
 - You may not even go back to validate the brain dump
 - It is a freeing experience!



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Within psychological terms the brain dump is referred to as a transition ritual – think what you do the moment you get into the house from work. You may hang up your keys, take your wallet out, change into casual clothes. These are all transition rituals – switching mental states from one model to another.

If you've effectively purged yourself of your own worldview, you are now a hollow vessel waiting to be filled with insights. You need to not only be ready to hear your participant's take on things, but you should also be hungry for it. This willingness to embrace is an active, deliberate state.

How to Ask Questions

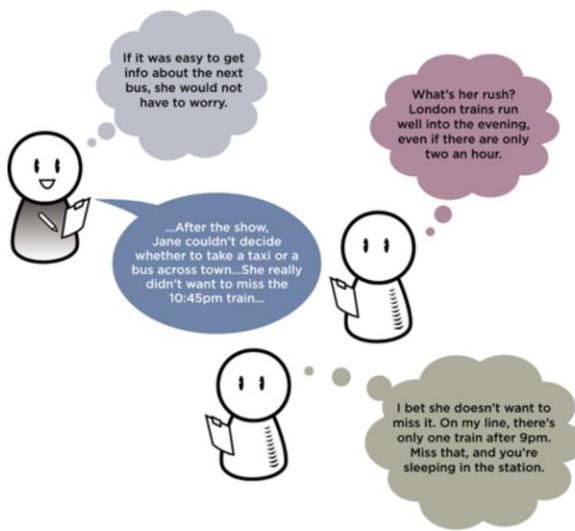
- **Ask questions to which you think you know the answer to**
 - Q: When is a self assessment tax form due?
 - A: I think its January 31st, but I always send mine in on July 1st once my P11 has come in
- **The user's data is valid and correct – We must listen to it**
 - Listening forms the most important part of interview based data
 - We can listen by asking questions – use [open question](#)
 - Base them on the previous answer
 - This builds a rapport and embeds you into the users thinking



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(A: By January 31st – but only online)

Stories Exist in the mind of the Listener



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We fill in details about a story from our own culture and experiences.

A cartoon of someone telling a story to two people. The text of the story is "... After the show, Jane couldn't decide whether to take a taxi or a bus across town.. She really didn't want to miss the 10:45pm train..." The storyteller is thinking, "If it was easy to get info about the next bus, she would not have to worry." The two people in the audience are each thinking something different: "What's her rush? London trains run well into the evening, even if there are only 2 an hour?" and "I bet she doesn't want to miss it. On my line, there's only one train after 9pm. Miss that, and you're sleeping in the station." (Illustration by Calvin C. Chan).

Quoted from: Quesenberry, Whitney; Brooks, Kevin. 2010. Storytelling for User Experience. New York: Rosenfeld Media.

Body Language

- What type of language are you getting from each pose?



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Image source – Interviewing Users: How to Uncover Compelling Insights

Conducting the Interview

- **Frame your questions to promote discovery**
 - Listen for opportunities: Identify inefficiencies or gaps
 - Apply design thinking brainstorm how your product or service can add new value to meet those needs
- Phrase your Questions within an interview precisely
 - Ask interviewees to define what a subject means to them
 - Put interviewees in the moment – build on their experiences

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Let the person know why you are doing the interview – Many people may be wary about a stranger coming and asking them lots of personal questions. Before you jump in give them an overview of what you are trying to accomplish and most importantly let them know there are no wrong answers. Also let them know that any feedback will be kept anonymous.

Don't ask any leading questions – Rather than asking 'How often do you use Facebook?', ask 'Do you use any social networks?'. Not only does this give you opportunities to ask follow up questions but it can uncover insights that you may have forgotten to ask about.

Use the script as a guide not a bible - The script should help lead the conversation in the right direction but it should not be stuck to too rigidly. Be prepared to go a little off piste if the conversation is heading in an interesting direction. Just make sure to cover all the areas you need to.

Keep it to less than an hour – A fairly simple tip but an important one. Most people will have trouble staying focussed longer than this so if you are running out of time cherry pick the most important questions.

Conducting the Interview

- **Frame your questions to promote discovery**
 - Listen for opportunities: Identify inefficiencies or gaps
 - Apply design thinking brainstorm how your product or service can add new value to meet those needs

- Phrase your Questions within an interview precisely
 - Ask interviewees to define what a subject means to them
 - Put interviewees in the moment – build on their experiences

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Leave time between interviews - A whole day of user interviews can be exhausting, particularly towards the end. Give yourself a half hour buffer between them to allow for any over run, give you time to finish up your notes and to have a bit of a break.

Asking Good Interview Questions

	To avoid...	Ask things like...
Conversation Non Grata	One to threee word replies like Yes, No, or I don't Know	We're going to talk about <phrase>, what does that mean to you?
The Pleaser	Hearing what they think you want to hear instead of what they really think	Tell me about a recent time when you...
The Wolf	Fixers who design your product or service for you	What resources were important to you the last time you...

Documenting the Interview

- **All recorded data must occur in the moment**
 - Open question interviews can be extensive in data
- **There are a number of methods to take detailed notes at a interview**
 - Take Notes
 - Writing evidence can lose detail
 - But can keep the data focused
 - Audio Record
 - Allows you to recall intent and replay
 - Video Record
 - The same as audio but with visual cues as well
 - Participants can be reluctant to be videoed
- **Try to debrief after the interview**
 - Feedback helps everyone

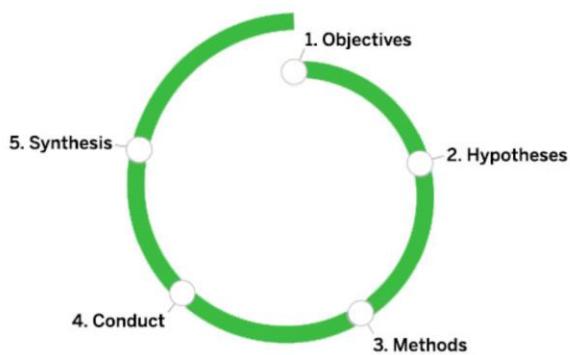
Exercise

- Listen to the following user stories about their experiences in hotels

- Record information about:
 - The person's background
 - Their occupation
 - Their use of technology
 - Their goals
 - Their motivations
 - Their pain points

Exercise – Creating an Interview Script

- Create a suitable script of interview questions for cinema goers



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The research learning spiral is a five-step process for conducting user research, originated by Erin Sanders at Frog.

Exercise – Creating an Interview Script - Methodology

- **Objectives**
 - These are the questions we are trying to answer
- **Hypotheses**
 - These are what we believe we already know
- **Methods**
 - These address how we plan to fill the gaps in our knowledge.
- **Conduct**
 - Gather data through the methods we've selected
- **Synthesise**
 - Answer our research questions and prove or disprove our hypotheses

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Objectives

These are the questions we are trying to answer.

- What do we need to know at this point in the design process?
- What are the knowledge gaps we need to fill?

Hypotheses

These are what we believe we already know.

What are our team's assumptions? What do we think we understand about our users, in terms of both their behaviors and our potential solutions to their needs?

Methods

These address how we plan to fill the gaps in our knowledge. Based on the time and people available, what methods should we select?

Once you've answered the questions above and factored them into a [one-page research plan that you can present to stakeholders](#), you can start gathering the knowledge you need through the selected research methods:

- **Conduct**

Gather data through the methods we've selected.
- **Synthesize**

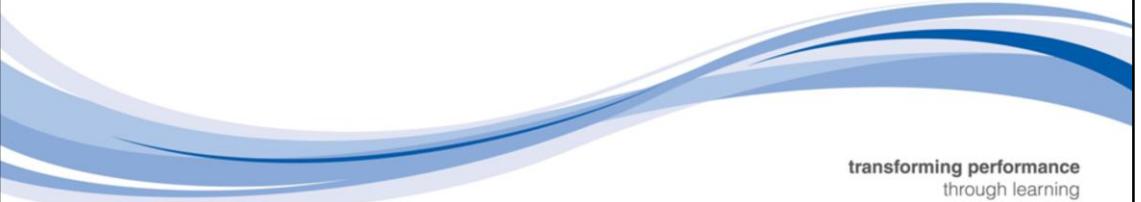
Answer our research questions, and prove or disprove our hypotheses. Make sense of the data we've gathered to discover what opportunities and implications exist for our design efforts.

Review

- **Interviewing allows us to connect and empathise with users**
 - It is the heart of UCD
- **It can be unnatural if you are not used to dealing with interviewing**
 - Practice
 - Document everything
 - Record where appropriate



Card Sorting



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Introduction

- **Introduction to card sorting**
 - Why card sort
 - How to card sort
- **Identifying and containing card sorts**
 - Methods for sorting

What is Card Sorting?

- **Card sorting involves the grouping of objects and/or concepts**
 - It helps us understand our users
 - Giving us a collaborative method for creating navigation
- **To card sort you give users cards that have content written on them**
- **Card sorting can be used to challenge misconceptions**
 - Brainstorming different categorisation models
 - Exploring how users think about topics
 - Identify complementary topics
 - Understand what fits together and does not
 - Gather words users use to describe information

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Information architecture is a central part of effective digital product development – we will perform the final IA analysis in the structural analysis but need to ensure we are organising the information in the way our users think.

Card sorting is a methodology used for years to effectively organise content into groups, keywords and tasks on physical note cards.

Users may not agree with designers about proposed content structure and asking them to organise information gives us data that can challenge preconceptions.

Why Card Sort

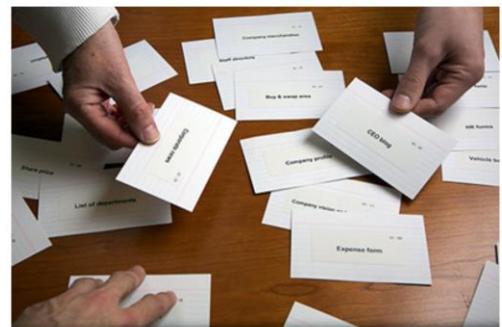
- **Card Sorting provides data that help with Information Architecture**
 - Such as:
 - Planning structure and navigation
 - Structuring offline help
 - Creating a classification scheme for document management
 - Identify knowledge-base categories
 - Determine menu groups
 - Layout the structure of a book

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Obtaining insight from users about how they categorise information can lead you to qualify assumptions and challenge existing navigation models. Especially with existing websites redesigning the information and understanding whether organisational schemas are relevant can be challenging. The fresh opinion of open sorts and the restructuring of wide open new categories can be refreshing and offer a different route to consensus.

Steps in a Card Sort

- **The main steps in a card sort are:**
 1. Decide what you want to learn
 2. Select a method
 3. Choose content
 4. Choose and invite participants
 5. Run the card sort and record data
 6. Analyse the outcomes
 7. Use them in your project



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Identify the product to be built (1)

- **What type of product you are building will suggest an approach**
 - Website from Scratch
 - Create a wish list of types of information the product will include
 - You may not know all pages/screens you want to create
 - But you should have a good high-level idea of the tasks/activities
 - Existing Website?
 - Obtain a thorough understanding of current content
 - Choose content to sort
 - Topics or subjects
 - Products from an inventory
 - Existing navigation models

Identify the product to be built (2)

- **Continued:**

- Designing a System?
 - Menu items for the application
 - Key functions for the application
 - Steps in the process
 - Key tasks
 - Exploring an Idea?
 - Brainstorm some examples
 - See what already exists in the space
 - Analyse search queries

Choose Content for Sorting

- **You need to select content that can be grouped**
 - The content has to be similar enough to suggest potential groups
 - Check the content on cards has a potential partner
- **Select content that is at the same level**
 - Examine the following list and sort:
 - Exhibitions of local Art
 - Accommodations
 - Science and technology museums
 - Things to do and see
 - London Zoo
 - List of bed and breakfast
 - Upmarket hotels

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The above example from Donna Spencer's Card Sorting book is an example of category slip. Accommodation and Things to do and see are higher level categories than London Zoo. The information will give a very linear result set.

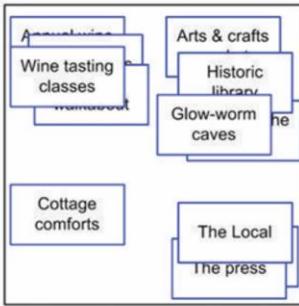
Donna says "In order to avoid unnecessarily influencing a card sort content items should be at a similar level." In other words you can use very detailed sub topics or broader high level content but do not mix the two.

Method – Open Sorts

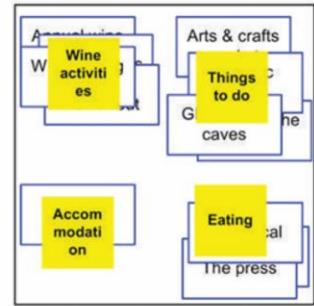
- **To open sort:**
 - The user then sorts the cards into similar piles
 - Then describe the group they have made



1. Content ideas on index cards



2. Sort them into groups



3. Label the groups

Demonstration – Open Sorting



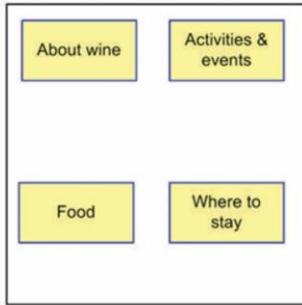
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Method – Closed Sorts

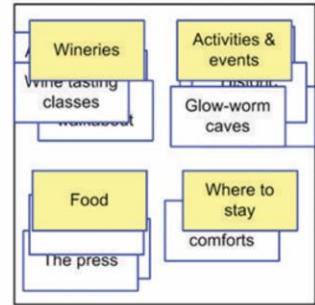
- **To close sort:**
 - Create predefined categories
 - Ask users to add the content to the best category



1. Content ideas on index cards



2. Pre-determined categories



3. Content put into categories

Manual vs. Software sorting

- **Manual sorting gives better qualitative information**
 - It is low tech and can be conducted anywhere
 - Involves face to face user interaction
 - It is often a more engaging activity for the user
 - Data has to be manually entered for analysis
- **Software sorting**
 - Easier to involve remote participants
 - Can provide a larger set of data
 - Data is entered for analysis automatically

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For a manual sort you need no more than some speakers cards or sticky notes. For automated testing you need software there are few good products – the ones below tend to provide free simple tests:

Optimal Sort - <http://www.optimalworkshop.com/optimalsort.htm>

Web Sort - <http://websort.net/>

Mind Canvas

Tree Tests

- A Tree test is also known as Reverse Card Sorting 
- In a typical tree test:
 1. The user is asked to find something (e.g., "Look for special offers")
 2. They are shown a text list of the top-level topics
 3. They choose one, and are then shown a list of subtopics.
 4. They continue choosing (backtracking if necessary) until they find a topic that satisfies the task or they give up
 5. The user does several tasks in this manner
 6. Once several users have completed the test the results are analysed for each task

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Tree Testing is typically used to evaluate the findability of topics on a website

In a typical tree test:

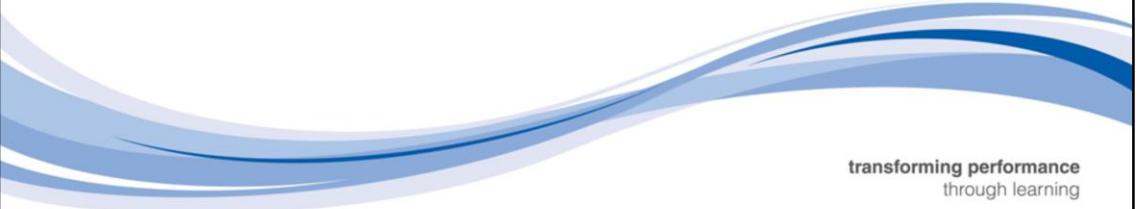
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5. The user does several tasks in this manner
6. Once several users have completed the test the results are analysed for each task

Exercise

- **Closed Sorting**



Implementation and Mental Models



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Introduction

- **What are mental models**
- **Using and creating mental models**
 - Working with user processes
 - Putting users first
 - Gap analysis

What are Mental Models

The deepest form of understanding is empathy... [which] involves a shift from ... observing how you seem on the outside, to ... imagining what it feels like to be you on the inside

- Difficult Conversations – Douglas Stone

- **Designing a product requires that you understand a users needs**
 - Mental models help us to understand tasks users perform
 - And what we are doing to assist a user in achieving them
 - Noting any gaps and filling them in the analysis
 - Mental models give a deep understanding of people's motivations
 - Along with their emotional and philosophical landscape

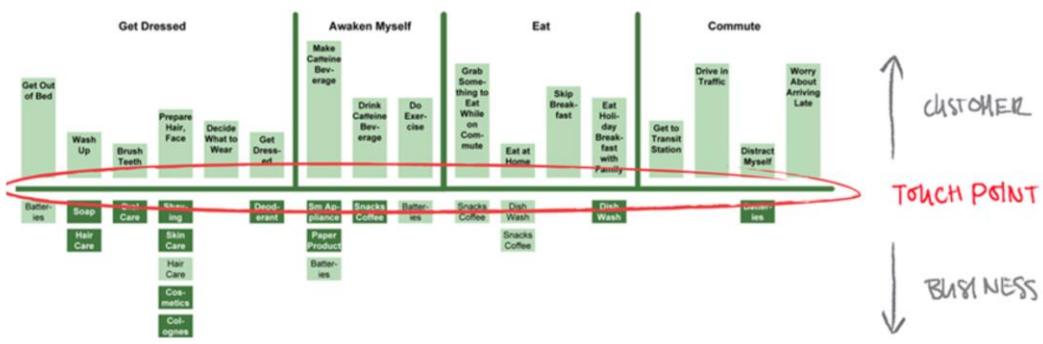
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It answers the question “How does the user think this works?” It is based on a set of beliefs regarding how a system works, and how users interact with that system based on their beliefs. Even more difficult to design for as common beliefs change over time, and are usually based on a completely different logic to what a software developer uses

Mental models embrace any user activity from looking up a part number to ordering your coffee at Starbucks. It consists of several different sections representing the tasks and activities. It can be a way of taking card sort data and implementing it into process considerations.

Creating a Mental Model – What it looks like

- **To create a mental model we look for patterns on user activity**
 - Evidence can be gathered from card sorting & interviews
 - **We then organise those behaviours into a model**
 - The model has three sections
 - Customer
 - Touch points
 - Business processes



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To create a mental model you talk to people about what they are doing, look for patterns and organise those patterns bottom up into a model. Through interviews and card sorting repeating types of behaviour should start to appear and we can group these together.

We create the top half of the model and align the user centric tasks against features we intend to create and align them beneath the towers they support. So we align our business values beneath concepts people mentioned.

Building the models

Implementation

Mental

Representational

Implementation Model

- It answers the question of “how does this work?”
- Usually described with UML diagrams and pseudo-code
- Describes how to build the system
- Tend to be ideal for developers but terrible for users

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An implementation model is a representation of how a system (application, service, interface etc.) actually works. It's often described with system diagrams and pseudo code, and later translated into real code.

An implementation model answers the question “How does this work?” and is in fact a description of the way in which a developer will build the system, app or whatever. The reason why teams without user experience support often have extremely poorly designed software for users is exactly because the implementation model is reflected in every interface element.

It's easy to design software like this, and if you see an interface with dozens of buttons on the screens, one for each implemented function, chances are you are looking at a system that was designed according to its implementation model.

Granted, we will have an (almost) perfect translation between the system functionalities and the user interface, but real users will suffer.

User interfaces designed by developers generally follow the implementation model, their user interface is mapped to the program's functions. The problem? Real users don't feel good using interfaces like this.

Users don't care how the developer made the system work. They have their own ideas about what is happening when they interact with the system. Interfaces which do not respect this can be very difficult to use.

Representational Model

- It answers the question “How will this be presented to the user?”
- Bridges the gap between the mental model and the implementation model

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This model answers the question “How is this presented to the user?”

Representation models are directly related to the user interface itself, to the layer of interaction between the system and the user. It's rarely a direct representation of the implementation model, it's more often a designer's view of users' expected mental models.

The wonderful thing about digital systems is that the face of the application can be quite different from what is going on inside the machine. Think about the leap from text-based computer systems to the graphical user interfaces we know today. Suddenly, instead of memorising lists of commands, all people had to do was click on a picture of what they wanted.

Designers must be closely familiar with users' mental models to be able to craft great representation models. It will be beneficial for them to know the basics of the implementation model, at least parts of it, but it is critical to understand and map properly users' expectations, their mental models and to create an interface that is coherent with those expectations, not with the actual implementation.

If, for example, buying something from a web shop requires a number of transactions and complex operations in the background, those should be hidden from end users. For them it is just the process of clicking on an item and adding it to the shopping cart. The designer must create a user interface that represents that mental model and that will lead to the creation of great user experience in which the system will behave exactly as users expect.

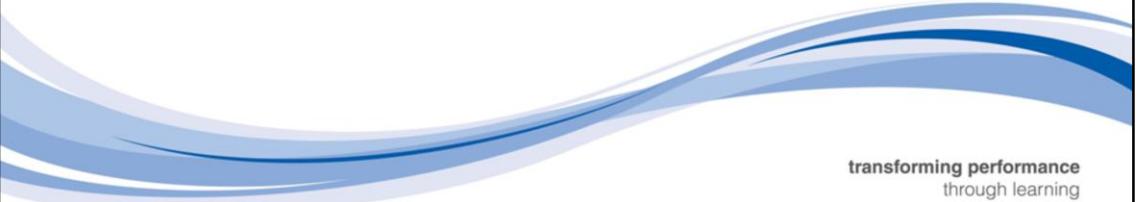
Group Exercise – Filmgoers App

Review

- **Mental match user expectation against business aims**
 - They work with gathered user centric data
 - Allowing us to understand gaps in our proposed solutions



Modelling Users



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What are User Personas?

- **A persona is a hypothetical archetype it represents:**
 - A specific person in a work role
 - With user characteristics
- **We put the fictional version of a user through user scenarios**
 - Before real users
- **The first question we must always ask ourselves is**
 - “Who is using this?”
- **This allows to keep the product focused**
 - A product that is all things to all users will be a dancing bear!

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Possibly the most useful tool for the early stages of usability design is the User Persona.

What is a User Persona?

An amalgamation of data derived from users and potential users in order to create composites of the sort of people using your software and what (and how) they will be doing with it.

These are built from interviews and questionnaires as well as user stories.

How does it help?

Because it contains details of how a user behaves, what their goals and skills are, and what sort of environment they will be working in, this can help take a usability design process most of the way to completion by putting a fictional version of a user through user scenarios before real users.

Example User Persona

USER PROFILE

Name: Sally Jones

Age: 32

Gender: Female

Marital Status: Single

Occupation: Marketing Manager

Salary: £35k-£40k p/a



Description:

Sally works as a Marketing Manager for a big investment firm in the city. She currently lives in Angel, North London, in a rented 1-bedroom flat. In her spare time she enjoys going out with her friends for dinner or drinks and occasional trips to the theatre.

She uses her blackberry to browse the web and send email when she's out and about. When at home she uses a Dell laptop with Windows 7, her browser of choice is Internet Explorer 9.

Sally is not hugely fashion conscious but does like to update her wardrobe every few months. Her dress sense can be described as elegant and sophisticated.

Example taken from <http://www.basecreative.eu>

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How Do You Use Personas?

- **Personas are a tool to control the instinct to cover everything**
 - We can try to remove the [edge cases](#)
 - This allows us to focus on the critical users
- **Consider the following scenario:**
 - What if the user wants to do x?
 - Can we afford not to include x?
 - How about putting it in the next version?
- **Consider the same scenario with a profile:**
 - Sally will not need feature x
 - But someone might need feature x
 - We are not developing for [Sally](#), not 'someone'

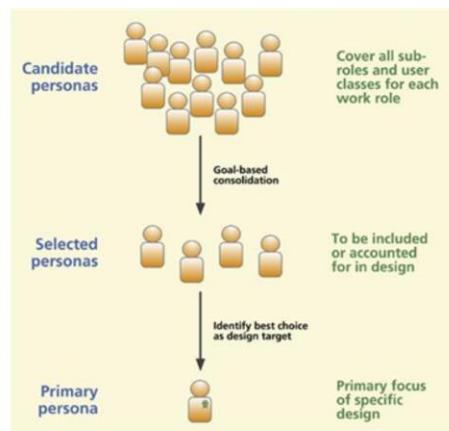
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Personas offer a focus at the start of the analysis. They allow us to work out profiles for possible users and define a set of behaviours for them. It allows us to wheedle out 'edge cases'; which are extremely exceptional or unlikely users that may creep into open plan discussion at the start of strategy modelling. For example, an app for social networking on cinema experiences would want to exclude users who never go to the cinema together for whatever reason, their 'experience' may not be what we wish to reach with our product.

Designers design for themselves, they are too close to the product in many cases, developers have exactly the same problem! Personas help us overcome the struggle of trying to design for too many conflicting needs and tries to focus the initial design work around the basis of likely users. A specific person makes clear what functionality or features must be included and what can be omitted. It is easier to quantify what a user wants if the user is known.

Identifying Candidate Personas

- **Personas are hypothetical but are built from data of real users**
 - They can be identified on the fly as you interview potential users
 - If you encounter a user persona with different characteristics add it!
- **This creates multiple candidate personas**
 - each corresponding to a major sub roles or user classes



How to Create Persona

- **The details of a persona has to be a rich life story**
 - It must be specific and precise
 - Personas must be relevant and believable
- **Information that you might want to include in your user persona includes:**
 - Who – age, location, gender, education, job title
 - Environment – when and where are they using your site? What device are they using?
 - Tasks – what tasks are they trying to complete on your site?
 - Motivation – what is their broader desired outcome?
 - Name or nickname
 - A photo

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Once you have this information, you should be able to create personas. Generally 2-4 is a good amount. You might also want to pick a primary persona if there is a specific user group that is particularly prominent in your research – this persona should be prioritised when applying personas to decision making.

Once you've created the multiple personas, it might be useful to create a document similar to those in the examples above so that they can easily be shared and referenced.

Example Persona – Microsoft Office 365



Transforming

- Customers with propensity to increase/decrease employee count regularly
- Require agile scalability and flexibility
- E.g. acquisitions, layoffs, temporary seasonal workers
- Business Value Deck: [Office 365 Transforming Enterprise Customer](#)



Cost Saver

- Customer primarily looking to cut costs, value a focus on TCO
- Interested in moving from capex to opex
- Business Value Deck: [Office 365 Cost Saver Enterprise Customer](#)



Google Compete

- Customer in active discussions with Google
- Greater focus on collaboration and messaging workloads
- Business Value Deck: [Office 365 Google Compete Enterprise Customer](#)



Task Worker

- Population of structured task workers who don't have dedicated PCs
- Prevalent in retail, hospitality, manufacturing and healthcare industries
- e.g. Manufacturing Plant Floor worker, Nurse, Barista
- Business Value Deck: [Office 365 Task Worker Enterprise Customer](#)



Dated Environment

- Customers on older versions (N-2+) of Exchange, SharePoint and Office who don't have new version rights
- Want to adopt new business productivity capabilities and stay current
- e.g. Customer deployed on Exchange 2003 without Software Assurance
- Business Value Deck: [Office 365 Dated Environment Enterprise Customer](#)

Presentation relevant to all: [Office 365 Enterprise Core Business Value Deck](#)
Main Resource for Deeper Assessment: [Customer Decision Framework](#)

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User Personas



- Take ten minutes and create a basic User Persona for the potential users of the following devices

- Fast Food Till
- Customer Relationship Management Suite
- Social Media Application
- Government Information Website
- Interactive news media Website
- Free to play web game



We will go into more detail on User Personas later in this course

Example Personas – Our Cinema Goers

- Adrian is a senior architect in a large practice. He uses email. He has a work provided Blackberry
- He visits the cinema with his family usually at weekends and holidays
- He is influenced by reviews in mass media
- Cost conscious; uses loyalty point systems, looks for discounts and deals

Adrian – Cost-conscious
35-49 married male with young kids



- David is a tech savvy social networker working with cutting edge tools and gear
- He visits the cinema with friends or his partner. Occasionally visits alone
- He is independent and makes his own choices but is influenced by digital opinion
- David has reasonable disposable income and looks for the best experience he can have in the cinema

Dave - Techie
24-34
Married male, no children



- Zoe works in marketing, she is non technical but an avid consumer of digital information
- She visits the cinema with friends, often using group discounts sourced online
- Social networking shapes her influences; likes, recommendations and trending media is important to her
- Zoe is a young professional and has limited disposable income, she would like to go to the cinema more regularly

Zoe – 18-33 single female living with friends

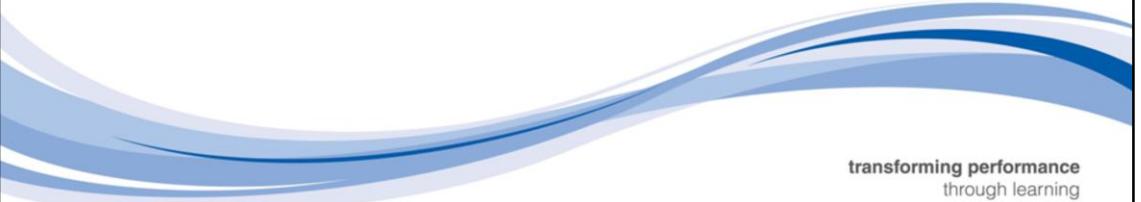


Review

- **User Personas are very important**
 - They create relatable users rather than stats
 - We can use them to help with process design



Designing for Different Experience Levels



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Introduction

- **Different experience levels and what they mean**
 - Designing for Beginners
 - Designing for Experts
 - Designing for Intermediates



Different Experience Levels

Beginners

Intermediates

Experts

What does the program do?
How do I print?
Where do I start?

I forgot how to import.
How do I find this feature?
What does this do again?
What was the command to do that?
Can I undo that?
What does this control do?
What new features are in this update?

How do I automate this?
What are the shortcuts for this
command?
Can this be changed?
How can I customise this?
What is dangerous?
Is there a keyboard equivalent?

Designing for Beginners



Beginners are easy to demoralise

- **Everyone starts out as a beginner, but nobody aims to stay one**
 - Good design shortens the time spent as a beginner

They need instruction – but not too much, and it must be quick and targeted
- **Teach them how to operate the product, not how it works inside**



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Beginners are easy to demoralize.

Nobody ever aims to be a beginner; it is merely the starting point.

Good design shortens the time spent as a beginner.

Imagine that users – especially beginners are simultaneously very intelligent, but extremely busy. They need instruction, but not too much, and it needs to be rapid and targeted. They need to learn how to operate the product, not learn how it works inside.

On the other hand, intelligent people learn better when they understand *why* things work as they do.

Designing for Experts



They have a disproportionate influence on less experienced users

- **They will look for more esoteric features and make heavy use of a few of them**
- **They will demand faster access to their regular set of tools**
- **They are undisturbed by the added complexity of new, more powerful features**



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Experts have a disproportionate influence on less experienced users.

When a prospective buyer considers your product they will trust an expert's opinion more than an intermediate's

When an expert says "it's not very good" they usually mean "it is not very good for experts" This may not apply to the beginners or intermediates, for whom the product would be ideal.

Experts will look for more esoteric features and make heavy use of a few of them, but they will still demand faster access to their regular set of tools, which will probably be large. i.e. they will want shortcuts to everything.

Experts constantly seek to learn more and see more connections between their actions and the product's behaviour. They appreciate new, powerful features. Their mastery of the product protects them from being disturbed by the added complexity.

Designing for Intermediates

- **Most users are neither beginners, nor experts**
 - People rarely remain beginners after using a product for an extended period of time
 - Few users will have the time or the inclination to become experts



As they represent the largest part of your user base, in most scenarios it would be wisest to optimise your design for the intermediate users

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Most users are Intermediate level users.

In most scenarios the product should be optimised for intermediates (as most users will remain there)

Designing for Intermediates

- **They need access to tools**
- **They do not need to have the scope or purpose of those tools explained to them**
- **They know how to use reference materials**
- **They will quickly establish which functions they use regularly and will want them to be placed front and centre in the user interface where they are easy to find and easy to remember**



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They need access to tools

They don't need scope and purpose explained to them because they already know them

They will make heavy use of tooltips, because they say nothing about scope, purpose, or meaning. They only state the functions in the briefest of terms.

They know how to use reference materials, and will dig deeper and learn as long as they don't have to do too much at once.

They establish the functions that they use regularly and those they use rarely.

They may experiment with obscure features but will soon identify which tools they use frequently, and want those to be placed front and centre in the user interface where they are easy to find, and easy to remember

They will know that advanced features exist, even though they do not need them or know how to use them.

Exercise – Assigning Experience Levels



Split into large groups and using the user personas that were created in earlier modules, categorise them according to their expected experience levels.

Is that the same experience level that the software they use is likely to be designed for?

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Use the basic personas that the course attendees created and ask them what they think the experience level is likely to be for those users. Is that the same as the experience level that is usually going to be designed for?

Review

- **Learn to understand a user or their persona's experience level**
 - It means we can assist more effectively with gap and task analysis
 - Using experience as a key

Strategy Phase - Review

- **The Strategy phase gathers data**
 - Aligning it where possible to business goals
 - It focuses on UCD to prove ideas and understand functionality