

UXD - User Xentered Design

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Lecture 3 - Requirements Gathering

Principles of User Centered Design

1. Start with a focus on users and tasks

Tasks & goals are the driving force

Understand user behaviour and context of use

Consider the abilities and limitations of users

Consult users throughout

Filter any design decisions through the lens of the user

Principles of User Centered Design

2. Empirical measurement

Identify, document, and come to agreement on goals

Select criteria and methods for assessment

Evaluate design against these goals

Principles of User Centered Design

3. Iterative Design

Refine design based on feedback

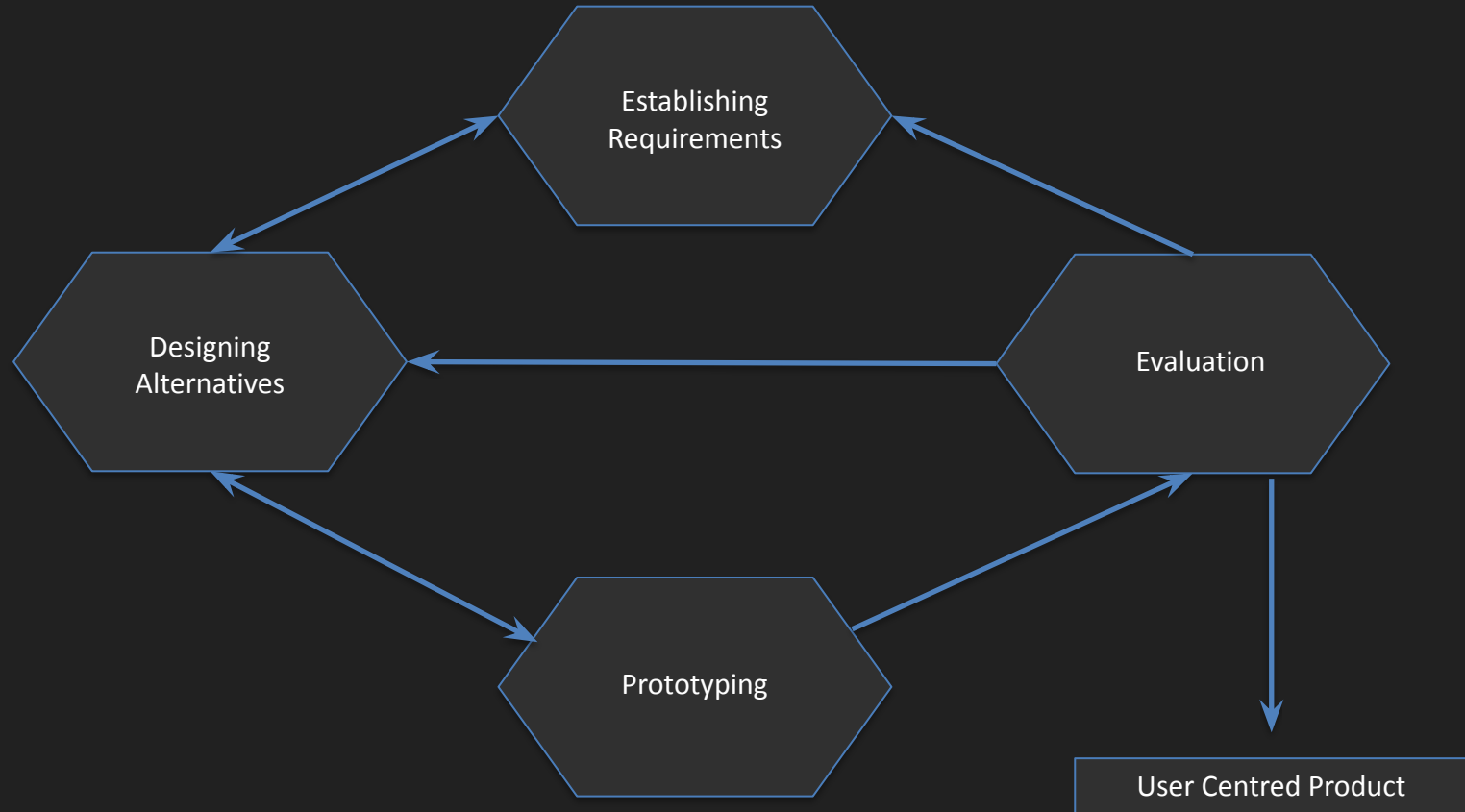
Repeat this process multiple times

Improving through trial and error

Interaction Design & Software Engineering



User Centered Design Process



User Centered Design Process

Requirement Gathering

Designing alternatives

Prototyping

Evaluating

Requirements Gathering - What?

Specific statement specifying what a product should do or how it should perform

“images should load within 5 seconds” - specific, functional

“users should find the app fun to use” - vague, more research needed to understand how this can be achieved

Requirements Gathering - Why?

1st principle of user-centered design

Guide design decisions

Produce set of requirements which allow for evaluation

Functional & Data Requirements

Functional Requirements

Product should do _____

“The game should be challenging to all users”

Data Requirements

Type, amount, scope, precision, etc. of data

“The virtual learning environment should be accessed by each student for at least 15 minutes each day through the term”

Environmental Requirements

Physical Requirements

Lighting, noise, movement, safety, abilities

“The app should be readable in direct sunlight.”

Social Requirements

Collaboration, sharing of data, physical locations of collaborators

“The app should allow teams of 5-10 to collaborate in real time.”

Environmental Requirements

Organisational Requirements

Is user support available? How easily obtained? Training?

“Students should be able to get help with the virtual learning environment from trained IT support staff at the university.”

Technological Requirements

What hardware/platforms will product run on? Compatibility?

“The app should be able to open image files exported from Photoshop”

Requirements Gathering - How

User Characteristics

Key attributes of user group

Abilities, skill levels, technical knowledge, social identity, cultural identity, physical abilities, preferences

Generation of a user profile

Who are your users?



People directly interacting with the product

Other stakeholders

Not necessarily you

Requirements Gathering - How

Interviews

Conversation with a purpose

Can be unstructured, sem-structured, or structured

Requirements Gathering - How

Interviews

Stages:

- Ethics/privacy

- Background - details like experience, etc

- Venting - let users vent issues

- Addressing issues - prompt, introduce topics

- Tying up - sum up the issues

Useful for eliciting scenarios

Requirements Gathering - How

Interview tips

Keep questions short - break down complex questions

Avoid jargon/unnecessarily technical language

Keep questions neutral and open

Stay on topic

Requirements Gathering - How

Ethnography/observation

Observe/record realistic interactions

Focus on: users, behaviours, context



Requirements Gathering - How

Observation/Ethnography Data

Examples of data:

- Researcher notes

- Recordings of interactions

- Artefacts from the environment

- User stories

- Conversations/semi-structured interviews

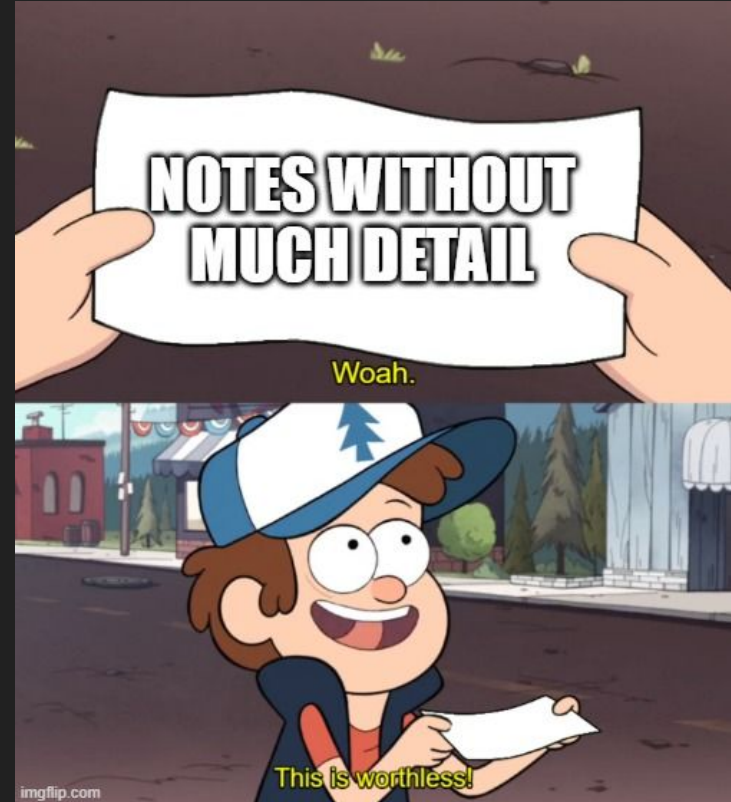
Requirements Gathering - How

Ethnography tips

Keep detailed notes

Keep observing until saturation

Ethics and data privacy



Requirements Gathering - How

Other Methods

Focus Groups

Cultural Probes

Desk study

Requirements Gathering - Why

Personas

Imagining a user




Based on data from real users



Drew

Influencer

ABOUT

-  Age 25-34
-  \$50K-75K
-  High Tech Proficiency

EVENT ATTENDANCE ATTRIBUTES

Frequent event go-ers (monthly), tend to be very early planners, and more likely to travel regionally or nationally for an event, tend to go to trending events only.

EVENT INFLUENCERS



MOTIVATIONS

Motivated to find new things to do and share them with network, having influence, being the first to know about something and getting tickets right away.

CORE NEEDS

Finding events on social media and being able to easily share them. Being able to see trending events that will up their klout. Also getting notifications of on-sale so they can be the first to get tickets.

PAIN POINTS

Finding the time to attend events and staying on budget.

39%

Total Universe GTV

12

Events per month

*GTV Calculated based on 4 of Drew's Frequency of Events
Based on a study conducted with 75 participants



Amy

43, Service Provider

Pasadena, CA
Formerly in Film/Creative prior

Aspirations

"I'm starting my second career in something I love and I hope to someday become an established local brand."



Business

Full time business offering event planning services



Business Growth Drivers

Online | WOM | Social Media | Marketing



Mindset

"I don't know how to code or write HTML, but I've heard there are some tools out there where coding is not required, and I think I can handle that."

Confidence Building a Website



Needs for a Website

"A website is the only way I can showcase my brand and get in front of new clients."

Hesitations

"My website will be the face of my brand so it needs to be polished and professional. And once it's out there, how can I market it to get more clients?"

How Weebly Uniquely Serves

1. Offers professional webinars and marketing advice to help grow her business
2. Makes her feel part of something bigger with a community of like minded small business owners
3. Makes it easy to create a high-quality site to establish her brand and attract clients

Requirements Gathering - Why

Scenarios

“A scenario is a concise description of a persona using a product to achieve a goal” (Cooper).

Informal narrative description of interaction

Light on details about tech, focus more on contexts, constraints, successful outcomes

Requirements Gathering - Why

Scenarios

Be concise

Include the product

Describe the goal

Requirements Gathering - Why

Scenarios

Charlie wants to take his elderly mother, Freia, to his favorite home products store, ComfortAtHome. He knows that the store has moved within the shopping center, but he doesn't know where. He also needs to find a route that is suitable for his mother who uses a walker but doesn't like elevators. He opens the navigation app on his smartphone and enters the name of the store in the search feature. Two different branches of the store are listed, and Charlie asks for directions to the one nearest to their current location. A map of the shopping center is displayed, showing their current location, the location of the nearest store, and the suggested route. This route, however, includes a series of steps that are unsuitable for his mother. So, he asks for an alternative route that uses only ramps, which the app displays. They set off, following the new route provided.

Sharp, Helen, et al. Interaction Design : Beyond Human-Computer Interaction, John Wiley & Sons, Incorporated, 2019. (p.409)



PERSONA 1 - SCENARIO 1

SCENARIOS

UX Knowledge Base Sketch #16



PERSONA 2 - SCENARIO 1

SCENARIOS ARE



SHORT STORIES



SEQUENCE OF ACTIONS AND EVENTS FROM THE MAIN CHARACTER'S (PERSONA) PERSPECTIVE.



ABOUT A PERSONA



BASED ON THE PERSONA'S NEEDS, GOALS, MOTIVATIONS



← TRYING TO ACHIEVE HER GOAL



BEFORE IMPLEMENTING SG, ASK: WOULD THIS BE USEFUL TO OUR USERS?



BY USING THE FUTURE PRODUCT / SERVICE



IT IS ABOUT THE FUTURE!



IN HER CONTEXT.



REAL WORLD CONTEXT CONTAINING INFORMATION ABOUT BEHAVIOR, USAGE, CONDITIONS AFFECTING THE EXPERIENCE.

SCENARIO \neq USE CASE



LIKE A TECHNICAL BLUEPRINT



IT IS ABOUT FUNCTIONS, NOT THINKING OR FEELINGS



LIST OF ACTIONS BETWEEN THE USER AND THE SYSTEM

|| SCENARIO \neq USER STORY



SHORTER (SOME SENTENCES)



DESCRIBING A NEED FROM A PERSONA'S PERSPECTIVE



IN THE PERSONA'S OWN WORDS.

HOW TO CREATE SCENARIOS



PREREQUISITE: PERSONAS



DECIDE WHAT SCENARIOS SHOULD BE CREATED: MOST SIGNIFICANT ACTIVITIES BY EACH PERSONA



MAKE A BELIEVABLE STORY

↳ PLOT: TRIGGER, ACTIONS, ACHIEVED GOAL

↳ CONTEXT, I.E.G.: WHERE?
WEATHER CONDITIONS
LIGHT CONDITIONS
WHEN?

↳ MOTIVATIONS, REASONS

↳ HOW THE FUTURE PRODUCT / SERVICE CAN HELP REACHING THE END-GOAL?



IT IS ABOUT THE PERSONA'S EXPERIENCE (THINKING, FEELING, SEEING, DOING), NOT ABOUT UI SOLUTIONS!



TRY TO AVOID UNREALISTIC ASSUMPTIONS! THINK ABOUT WHAT THE PERSONA WOULD DO!



EXCLUDE THE UNNECESSARY SENTENCES!

⇒ THEN YOU CAN START DEFINING REQUIREMENTS FROM THE SCENARIOS!

Requirements Gathering - Why

Design Fictions

Like scenarios, but for the imagined future

Communicate how your product fits in an ideal world

Reading

Rogers, Y., Preece, J., & Sharp, H. (2019). Interaction Design: 5th Edition, Chapter 11

Adams, A., & Cox, A. (2008). Questionnaires, in depth interviews and focus groups, In Cairns' P., & Cox, A. (Eds.). Research Methods in Human-Computer Interaction. Cambridge University Press, pp. 17-34



Round 1 - General (HCI themed) Knowledge

Question 1: The World Bank has a measure called HCI, meaning Human Capital Index. What Asian country was measured to be the highest in HCI in 2020?

Round 1 - General (HCI themed) Knowledge

Question 2: HCI can also stand for Honda, Canada Inc. This model of Honda was the best selling car in Canada in 2022.

Round 1 - General (HCI themed) Knowledge

Question 3: Highly Charged Ions (HCIs) are atoms that have lost their electrons in high-energy collisions like supernovas. What band had a 1995 hit song called Champagne Supernova?

Round 1 - General (HCI themed) Knowledge

Question 4: The Huntsman Cancer Institute (HCI) is a cancer research facility in Salt Lake City, Utah. What animal represents the zodiac sign cancer?

Round 1 - General (HCI themed) Knowledge

Question 5: Hot Carrier Injection (HCI) is a phenomenon in which solid state electronics' semiconductors begin to break down. What semiconductor manufacturer is the biggest employer in Ireland within that industry?

Round 2 - Lecture Round

Question 1: Name one type of non-functional requirement.

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Round 2 - Lecture Round

Question 2: Can you do requirements gathering after you've done prototyping?

Round 2 - Lecture Round

Question 3: Name two methods for conducting user research during requirements gathering.

Round 2 - Lecture Round

Question 4: Name one type of deliverable/product of requirements gathering.

Round 2 - Lecture Round

Question 5: Give an example of how you might respect participants' data privacy rights during an interview.