

Data Science Workshop

Lecture 11: UX Design

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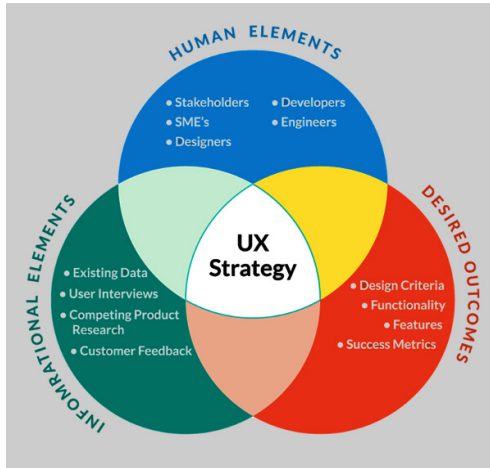
**Warsaw University
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**MSc program in Data Science has been developed
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UX Design strategy



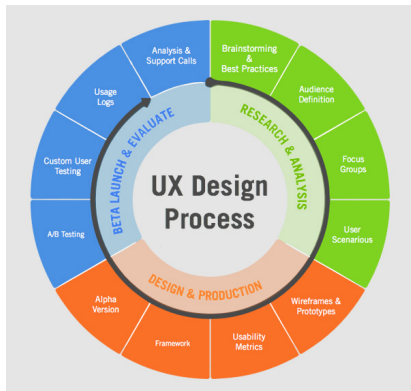
<http://graphicdesignjunction.com/2018/12/ux-topics-all-beginners-need-to-know/>

UX Design

- Created for a User Interface (UI) design.
- The design process focused on user interaction with our design.
 - Before, during, and after using our product.
- Design meets the users' needs.
- A method that uncovers the design lacks and therefore reduces the costs.

UX Design Process

1. Research
2. Modelling
3. Prototyping
4. Testing



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UX Design Process products

1. Research
 - User needs and product functionality.
2. Modelling
 - A sketch of the solution.
3. Prototyping
 - A testbed.
4. Testing
 - A prototype for implementation.

Research

- Desk research
 - Work on one's owns.
- Workshops
 - Work with a client.
- Interviews
 - Work with a user.

Research - workshops

- The workshops aim to identify the business case.
- It is a verification of our desk research results.
- During the workshops, we quickly sketch the proposed solutions.

Research - interviews

- The interviews aim to understand the users' needs.
- We focus on details and tailor solutions to the user
- The interview should occur in the user's natural environment.
- We verify information obtained from the user by an observation.


Modelling

- User scenarios
 - The scenario describes how a user might act to achieve a goal.
 - The scenario uses a persona to flesh out users experiences to reflect real situations.
- Storyboard
 - A visualisation of the user scenario.
- Flow diagrams
 - A step by step behaviour schema.
- Wireframes
 - Screens drafts.

User scenario

- A user scenario is a short story that tells us about the user's motivation, aims, and tasks in the context of product usage.
- It always tells about the specific person (Persona).
- The scenario provides the context of:
 - Who** details of the persona.
 - What** their goals are.
 - When** they might perform tasks (including obstacles).
 - Where** they might do these (including obstacles).
 - Why** they want to do things, must perform subtasks, etc.

Persona example



Rebecca

Casual audiophile

Age 26
Gender Female
Occupation Frontend developer
Marital status Single
Location Mountain View

Online locations Work and mobile
Computer(s) iPhone and MacBook Pro
Internet usage 8-9 hours

TECHNOPHOBIC TECH WIZ

CDs MUSIC STREAMING

CASUAL LISTENER HARDCORE GEEK

Music is essential to Rebecca's life. She is listening to tunes almost every second of her life, particularly while working.

Obstacles Rebecca faces:

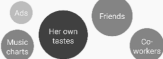
- Too busy to explore new music artists she might like
- Streaming music consumes a lot of data

How will Rebecca interact with Spotify?

Questions Rebecca will ask:

- How do I keep updated on new releases by artists I follow?
- How do I learn of new artists I haven't heard of?
- Can I listen to music in a data-efficient manner?
- How can I listen on both my MacBook and my iPhone?

Who influences Rebecca?



Rebecca's situation

Goals, motivations:

- Listen to great music to keep her productive at work
- Relax and unwind at the end of the day
- Superior music quality for full enjoyment of tracks
- Expand the circle of music artists she listens to

Key words
music, jazz, r&b, pop, artists, new releases, top charts, background music


Rebecca's story

Music is a big part of my life; I like to think that I always have a "background music" running in each scene of my life. I love working while listening to music; somehow, it gives me a lot of focus on my task.

I regularly talk to my co-workers about music and singers – that's what we like to talk about over lunch. We're constantly looking for new artists to inspire us and to expand our music library, but lately it seems a little tough to do that. Everything seems to have a "filter bubble" effect, and we keep listening to the same genres and artists.

I really enjoy finding new artists that match my subjective taste, and most of the times I get those from my close friends. I wish there were a way to find more music and artists without having to rely on the serendipity of life!

Example of a persona that shows the six main elements you should include. Name, age, gender, tag line, experience and skills are placed on the left-hand side. The middle column focuses on the context to indicate how they would interact with a product or service. Finally, on the right-hand side some goals and concerns are shared, as well as a short scenario to indicate the persona's attitude.



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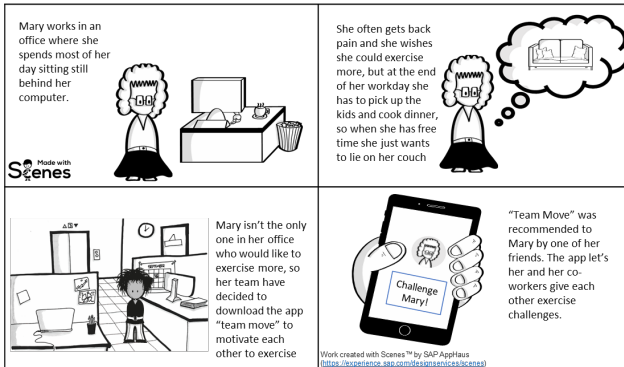
<https://www.interaction-design.org/literature/topics/user-scenarios>

User scenario example

Jeremy, 52, a senior manager for a medical supplies company, needs continuously updated information on purchasing-related issues while he travels between work and hospital sites.
He wants something convenient to take him straight to only the most relevant updates and industry news, including current information feeds about share prices, tariffs on foreign suppliers, budget decisions in local hospitals and innovations in the medical devices he handles.
Instead of liaising with three other managers and spending an hour generating one end-of-day report through the company intranet, he'd love to have all the information he needs securely on his smartphone and be able to easily send real-time screenshots for junior staff to action and file and corporate heads to examine and advise him about.

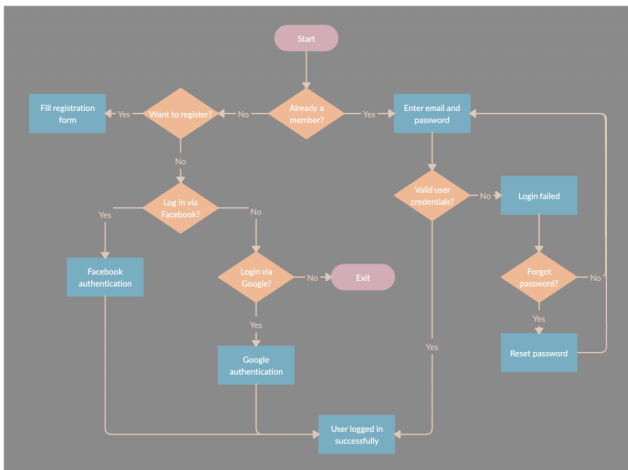
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Storyboard example



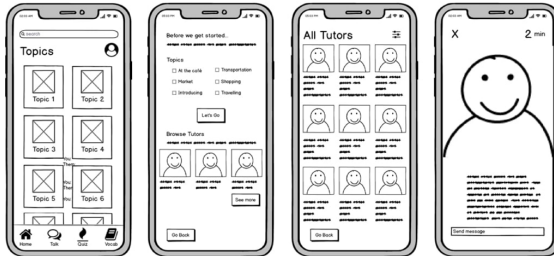
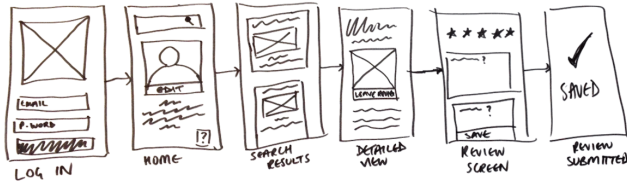
<https://www.interaction-design.org/literature/topics/user-scenarios>

Flow diagram example



<https://creately.com/blog/diagrams/user-flow-diagram/>

Wireframe examples



<https://careerfoundry.com/en/blog/ux-design/what-is-a-wireframe-guide/>

Prototyping

- During prototyping, we create a clickable prototype.
- The prototype shows how we solve separate users' issues.
- It can be done using dedicated tools (e.g. Axure).
 - Free licence for students and teachers
 - <https://www.axure.com/edu>.

Testing

- During the tests, we register all actions in the system.
- We also register the tester behaviour.
 - That allows us to evaluate how challenging was the task for the tester.
- We answer the following questions
 - Was the aim of the test reached?
 - Is the application self-explaining?
- We define what changes should be introduced into the prototype.

Task

- In group
 - Prepare a user scenario for your project user.

Tom *moved recently and he does not know the neighbourhood. He **wants to order a pizza on delivery.** He decides to **find a recommended pizzeria on the Internet.** He is starving, so he wants a fast delivery. A search engine finds the website *pizzanextoyou.com*. Tom **enters the website and finds a pizzeria in the neighbourhood.** He checks a menu and prices. He does not trust an online order, so he finds the pizzeria phone number and **calls to order the pizza.***

References



J. Levy.

UX Strategy: Product Strategy Techniques for Devising Innovative Digital Solutions.

O'Reilly Media, 2015.



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