CS449/649:
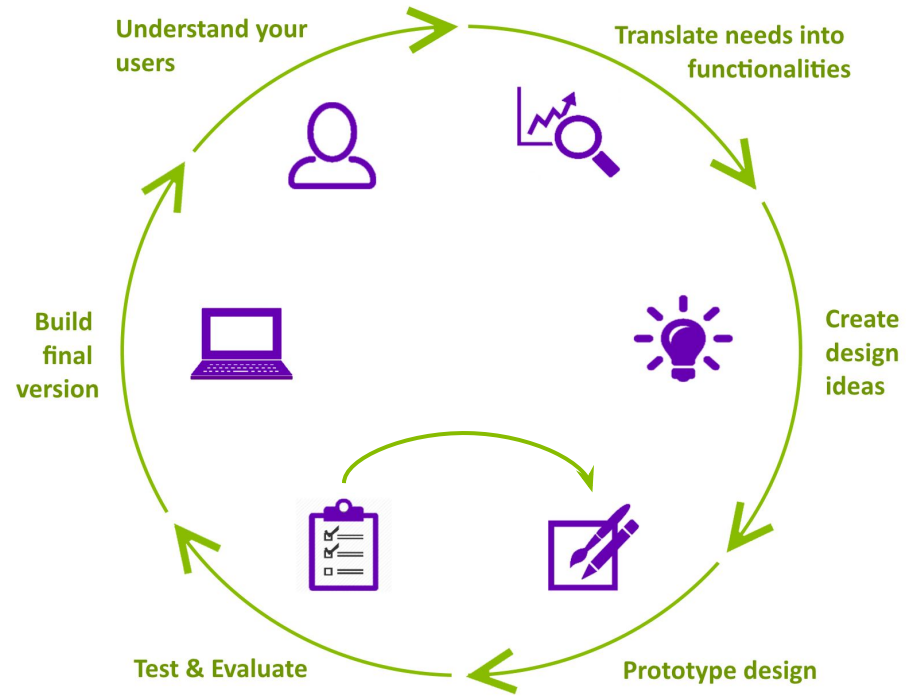# Human-Computer Interaction
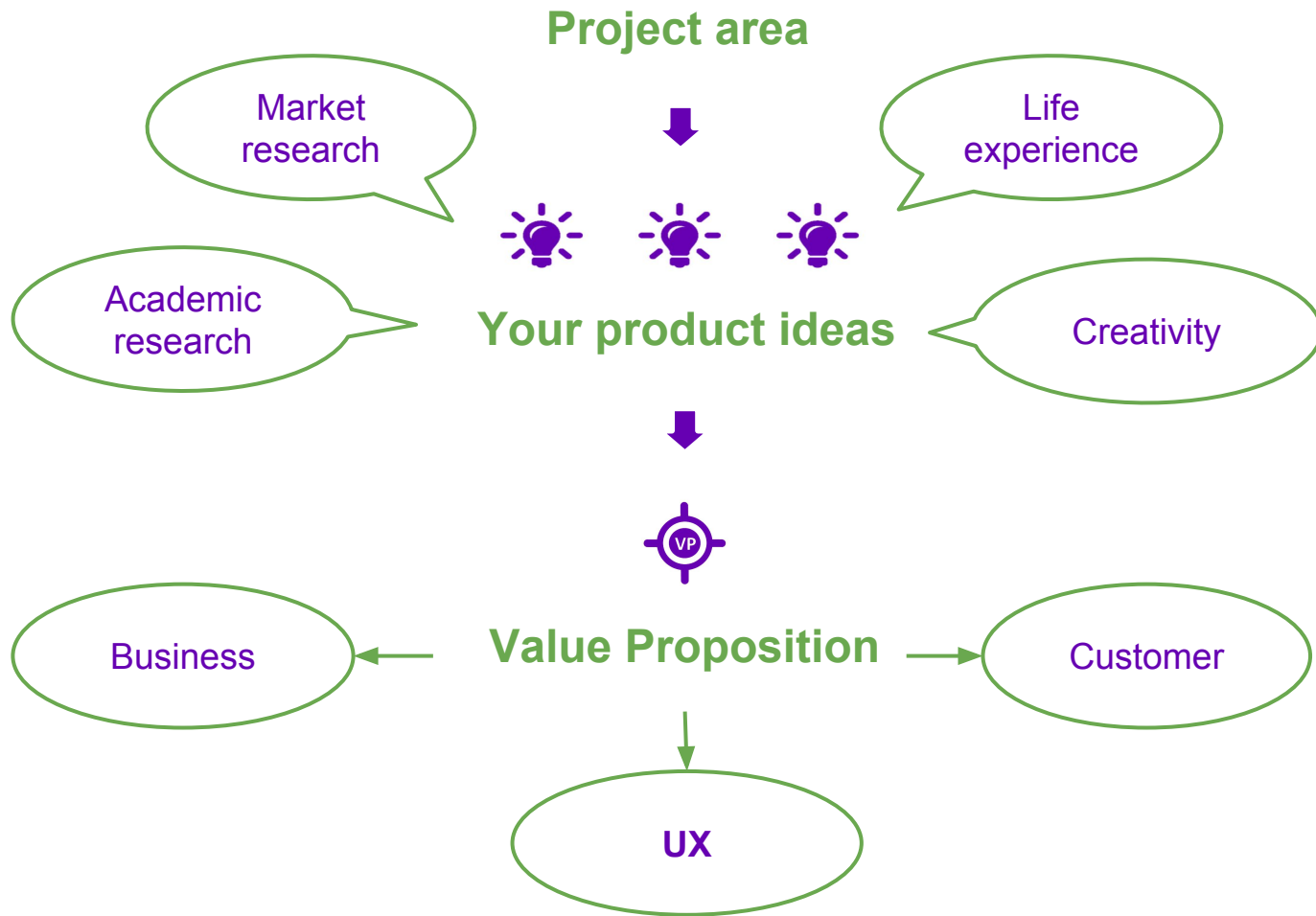
Spring 2017

Lecture II

Anastasia Kuzminykh
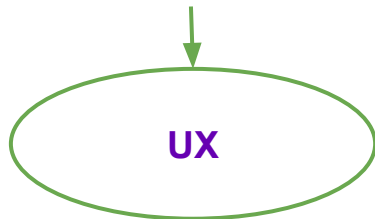
Understand your users

Translate needs into functionalities

Create design ideas

Prototype design

Test & Evaluate

Build final version

Project area

↓

Market research

Life experience

💡 💡 💡

Academic research

Your product ideas

Creativity

↓

VP

Business ← **Value Proposition** → Customer

↓

UX

Value Proposition

UX
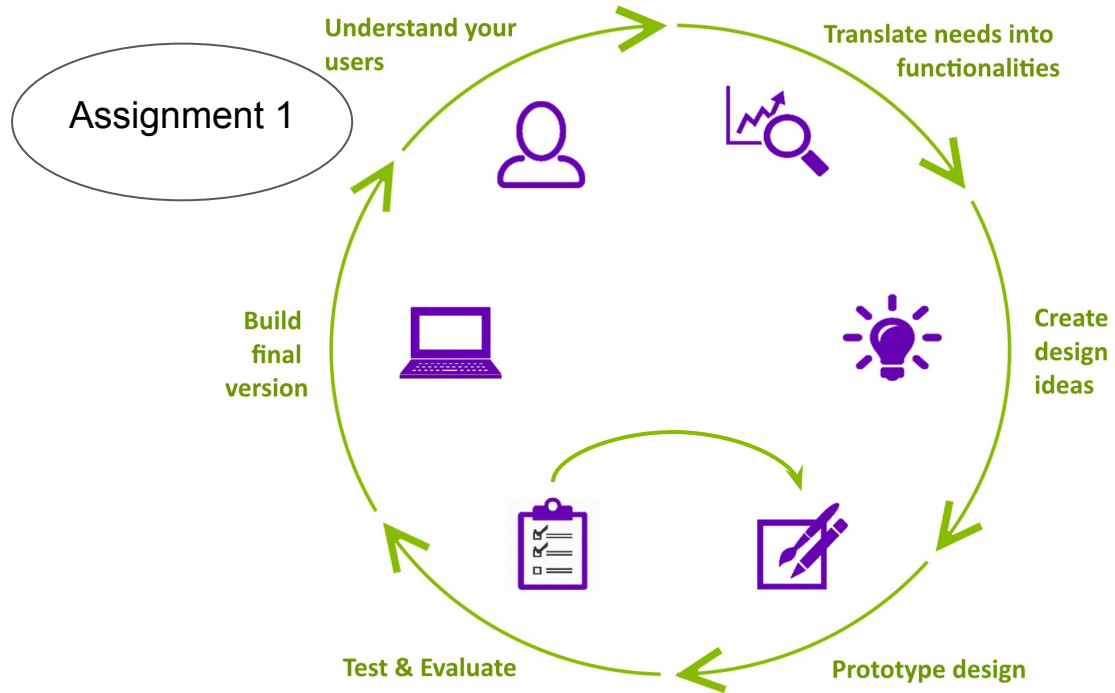
1. Identify key objectives and desired outcomes
2. Identify corresponding critical aspects of the user experience
3. Identify the design work that can be done

Value Proposition

A promise of the value you can deliver; a sharp product definition
that highlights the key aspects of it.

Often reflected
in slogans:

 - "Relationships Matter"

 - "Watch TV programmes and films anytime, anywhere."

 - "Connect with friends and the world around you on Facebook"

 - "Broadcast Yourself" (2005–2012)

 - "The simpler, safer way to get paid."

Value Proposition

A promise of the value you can deliver; a sharp product definition that highlights the key aspects of it.

Assignment 1: Description of the project → **What do you do?**

Who is it for? ← Assignment 1: Target user groups
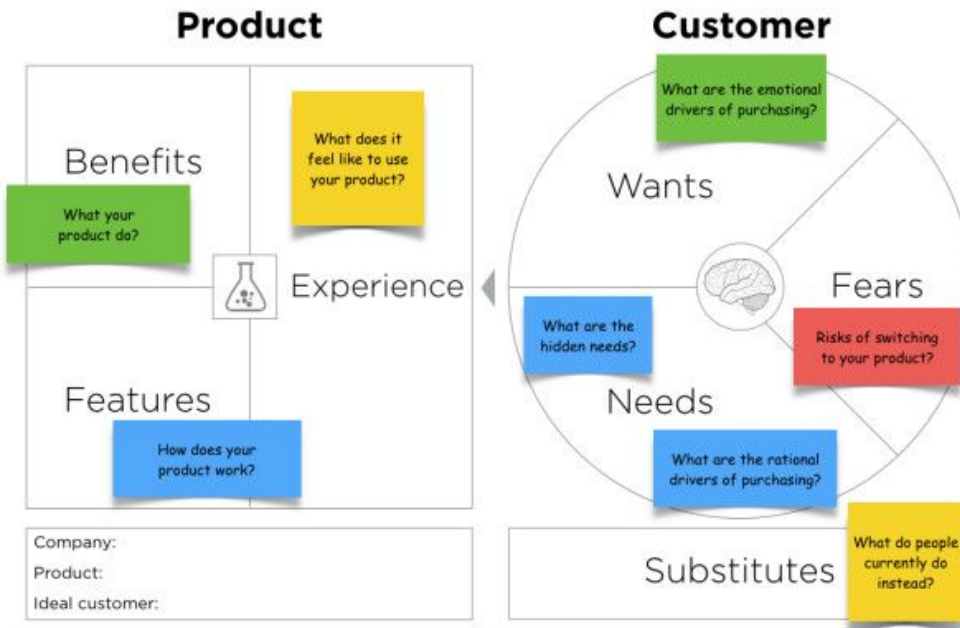
Assignment 1: Goals and Hypotheses → **How will it help?**
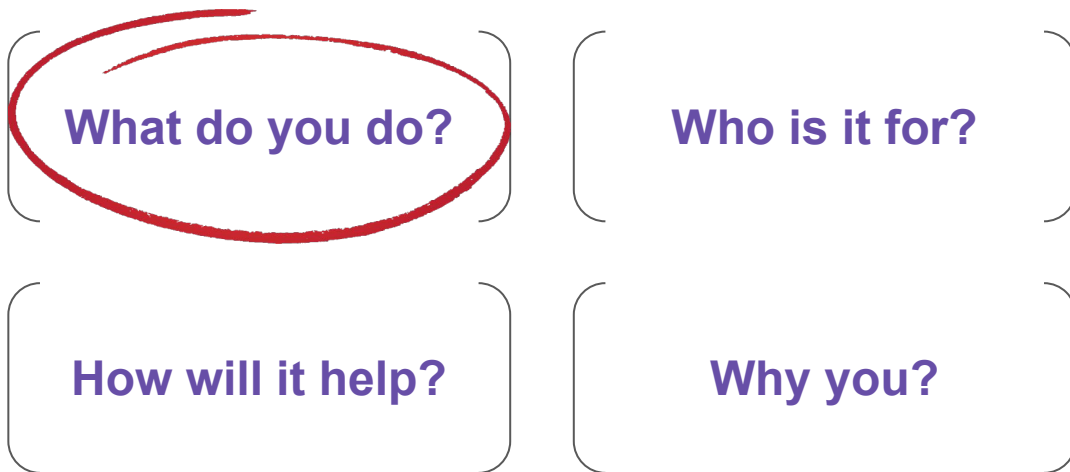
Why you? ← Assignment 1: Description of the project

Created by Peter Thomson

Value Proposition

A promise of the value you can deliver; a sharp product definition that highlights the key aspects of it.

What do you do?

Who is it for?

How will it help?

Why you?

Value Proposition

A promise of the value you can deliver; a sharp product definition that highlights the key aspects of it.

What do you do?

Who is it for?

How will it help?

Why you?

Value Proposition

A promise of the value you can deliver; a sharp product definition that highlights the key aspects of it.

What do you do?

Who is it for?

How will it help?

Why you?

Value Proposition

A promise of the value you can deliver; a sharp product definition that highlights the key aspects of it.
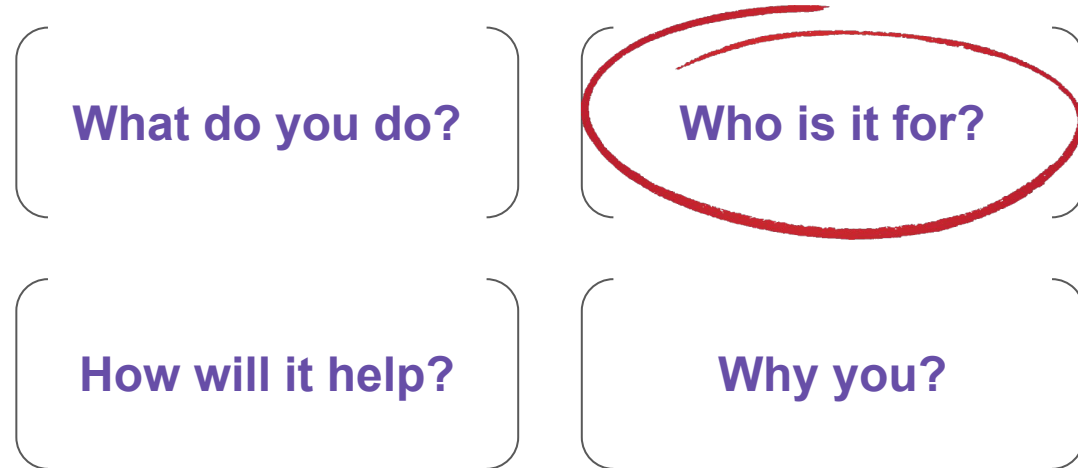
What do you do?

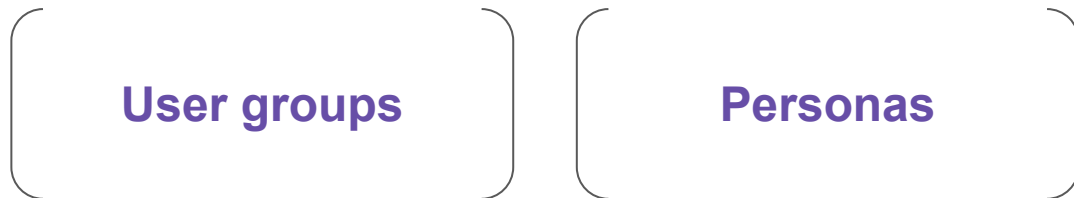Who is it for?

How will it help?

Why you?

Your Users

User groups

Set of characteristics
Based on statistics
General

Personas

Fictional character
Based on statistics
Specific

User groups

Your Users

Set of characteristics
Based on statistics
General

Demographics:

- Age & Gender
- Country & Language
- Education
- Occupation
- Residence
- Income
- Family status
- Size of a family
- ...

Other Characteristics:

- Means of transportation
- Music preferences
- Hobbies
- Food preferences
- Device preferences
- Fashion & clothing style
- Haircuts
- Sport preferences
- ...

Your Users

Personas

Fictional character
Based on statistics
Specific

Best practice: 3-5 different personas

- Persona Group

- Fictional name

- Job titles and major responsibilities

- Demographics (age, education, family status, etc.)

- The goals and tasks when using the product

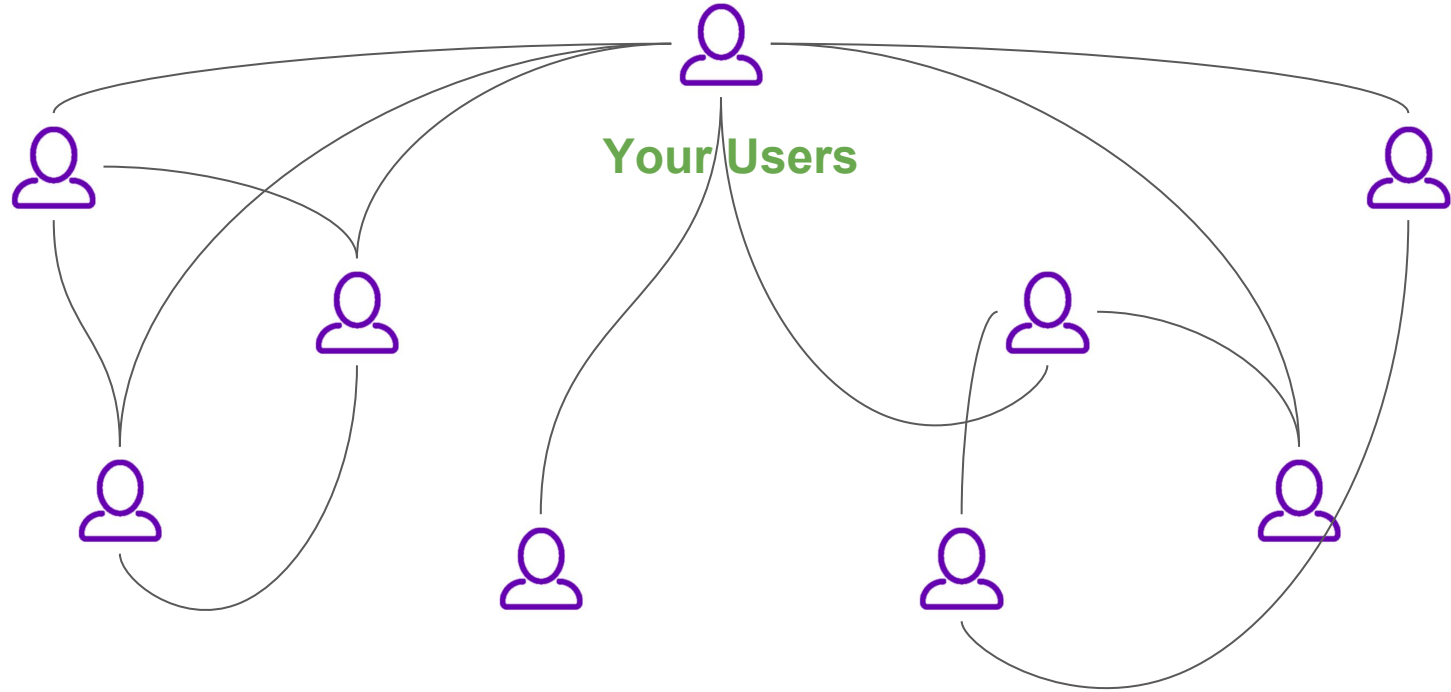- Physical, social, and technological environment

Important for:

- Building empathy and relating to users
- Communicating design goals
- Staying focused of design goals
- Supporting decision-making

Reading: **The origin of personas** by Alan Cooper

[How to build your creative confidence | David Kelley](#)

Your Users

Your Users

Representation of user groups

Diverse but generalisable

Participants

Balanced around key differences

How many?

Your Users

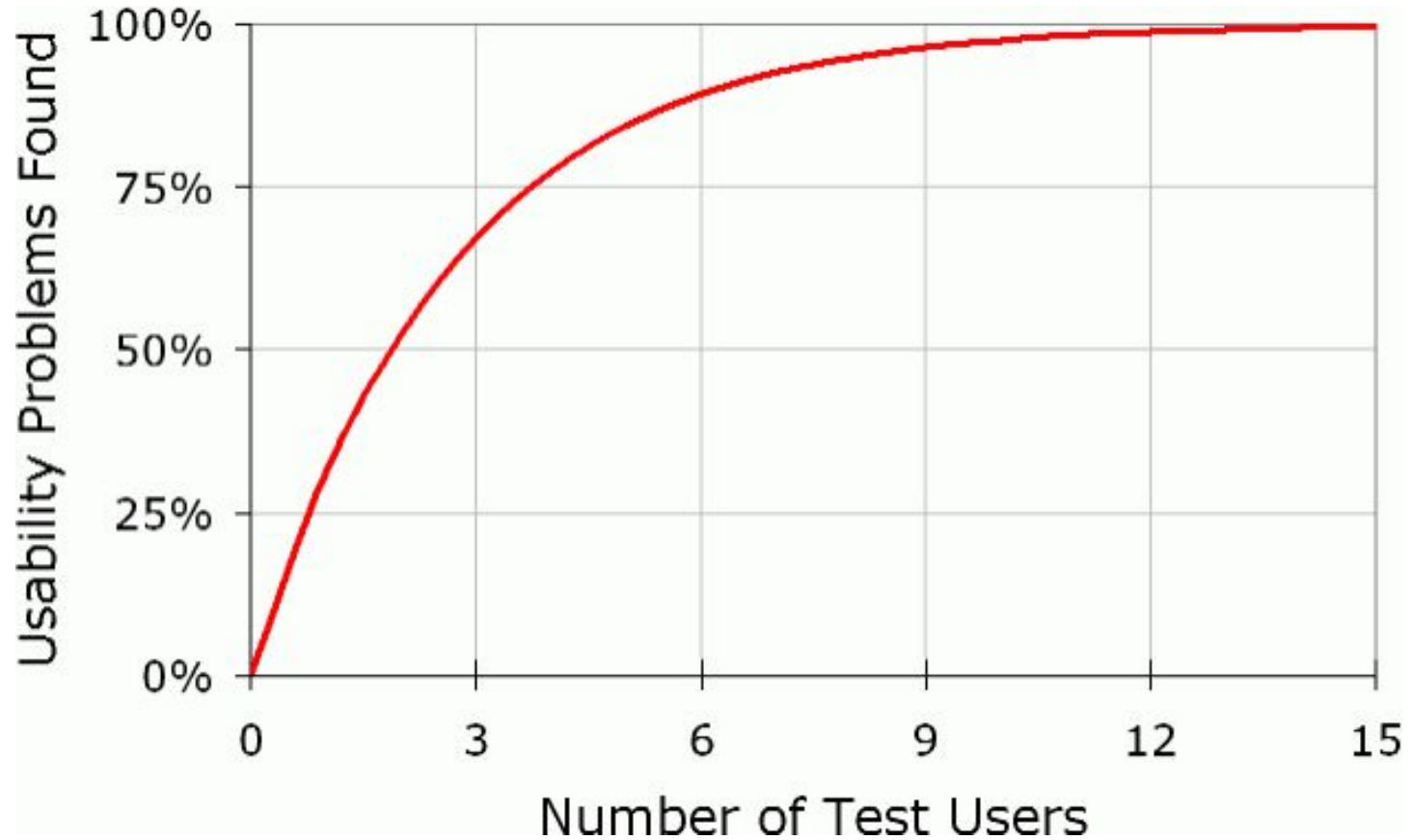**Participants**

[Why You Only Need to Test with 5 Users](#)

by **[Jakob Nielsen](#)**

$$N(1-(1-L)^n)$$

Where **n** is a number of users, **N** is the total number of usability problems, **L** is the proportion of usability problems discovered while testing a single user. The typical value of **L** is 31%

Why You Only Need to Test with 5 Users by Jakob Nielsen

Your Users

Ethics

Your Users

Ethics

Why would the university have ethics requirements for a course?

Always respect participants!
Including their:

- Time
- Attitude and environment
- Desire for privacy

University has a formal process for Ethics.
They consider:

- **Recruitment**
- **Voluntary participation**
- **Confidentiality and anonymity**
- **Risks/benefits**
- **Fully informed consent**

Process and protections ensure study is done correctly with proper forethought

Your Users

Ethics

Principles:

- Respect for human dignity
- Respect for free and informed consent
- Respect for vulnerable persons
- Respect for privacy and confidentiality
- Respect for justice and inclusiveness
- Balancing harms and benefits
- Minimizing harm
- Maximizing benefits

Research Ethics Board (REB) at Waterloo can:

- Approve, reject, propose changes, or terminate any work with human subjects by members of the university. **This includes you**.
- REB consists of five members (both men and women)
    - One member knowledgeable in ethics
    - Two members have expertise in fields covered by REB
    - One member knowledgeable in biomedical law
    - One member from outside university

Goal is breadth – want a balanced perspective on projects being examined

Your Users

Ethics

Informed Consent:

- Full Disclosure
- Comprehension
- Voluntariness
- Competence
- Agreement

Voluntariness:

- Subjects can refuse to answer and can stop participating at any time
- If they say they don't want to participate, their involvement is done
- Never, ever push subjects for information they cannot or do not want to disclose

Partial consent:

- They can consent to all or part of process
- Consider consent forms
- Make them aware of selective exclusion

IDEO Shopping Cart (21:15 min)

Tim Brown: Designers -- think big! (16:42 min)

Week 1 take-away

Questions:

- Differences between UI, UX and usability
- Steps in user-centered design cycle
- Mobile first design princip
- Value Proposition: what is it, why we need it and 4 components
- Users:
    - User Groups and Personas - differences, how to identify and describe, how to use
    - Forming groups of participants for user studies
    - Ethics in human research

Names:

Don Norman, Jakob Nielsen, Alan Cooper, David Kelley, Tim Brown