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DEPARTMENT OF COMPUTER GRAPHICS AND INTERACTION

NUR – User Research

JAKUB FRANC

Before you start

Methods of data collection

Lecture Outline

General introduction / motivation

Research strategies

Sampling

Biases

Ethics

User data representation models
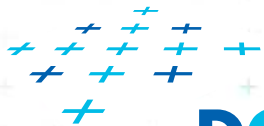
Research methods

User Research

Applied interdisciplinary subject

Cognitive Psychology

Interaction Design

Methodology of Social Sciences

Computer Science

User Research

Acquiring, maintaining a presenting information about users'

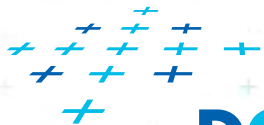needs

habits

experience

skills

Even potential users

SW development, web, design, consumer goods..

User Research Benefits

Our **assumptions** about how users use the product

might **differ** from its **real usage**

resulting in **frustration** of the user

Credit: webdesign.com

User Research Benefits

Significantly **reduces** development and service **costs**.

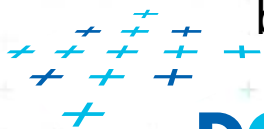Credit: Sonia Paz, missphones.co.uk

User Research Benefits

Essential for product success on current market

businessweek.com

Research Approaches

Qualitative

Quantitative

Mixed

Applied

Basic

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Qualitative Approach

Why? How?

Holistic picture

Small sample, lots of information, in depth

Less structured

Researcher investigates by her/himself

Interviews, ethnographic studies, observations, case-studies..

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Qualitative Approach – Evaluation

Advantages

Provides insight and detailed description

Helps with initial exploration, broadens view

Investigates phenomenons in their natural environment

Allows formulation of the hypothesis

Disadvantages

Not always possible to generalize

Time consuming

Vulnerable to researcher bias

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Quantitative Approach

How many?

Reductionist - narrows scope

Large sample, little information

Structured

Surveys, tests, observations

Hypothesis – surveying – hypothesis testing

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Quantitative Research – Evaluation

Advantages

Allows hypothesis testing - allows generalization about the whole population

Quick data collection

Provides exact numeric data

Disadvantages

Marginalizes phenomena that are not direct subjects of the investigation

Knowledge gained could be too abstract for application in real conditions
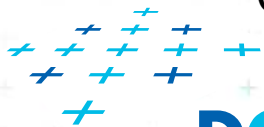
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Research Phases

1. research questions / hypotheses formulating
2. defining population and sampling
3. choosing the data collection method
4. constructing research tools
5. pilot research
6. data collection
7. data analysis and interpretation
8. presenting, making the data actionable

Sampling

Credit: bestchoiceuniform.com

Sampling strategies

Random

Simple (lot)

Systematic

Non-random

Quota

Snow ball

Self–selection

Screening process - screener

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Screener – golfresorts.cz interviews

1. Active player

How often do you play golf?

(Target: >4x times a month)

2. Profession/Hobby

Are you golf professional?

(Target: 4 professionals, 4 amateurs)

3. Usage of internet

How often do you use internet?

(Target: 4x less than weekly, 4x more than weekly)

Note: Targets should not be visible for the candidate

Sampling Bias

Difference in distribution of surveyed variables between population and sample

Certain subgroups or views overrepresented or shortchanged

Screening candidates

Non-responder bias

Timing bias

Invitation bias

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Biases

! Highly important to consider them when interpreting data !

Researcher bias

Respondents' expectations

External influences (even social)

Duration bias

Instrument bias

Hawthorn effect vs. Double blind

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Ethical Issues in Data Collection

Briefing

Contract

Debriefing

Principles:

Non-maleficency (no harm done to the participant)

Beneficiency (participants' benefit)

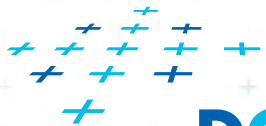Personal data protection / privacy

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User Data Representation Models

Segments

User profiles

Personas

Our images

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Personas

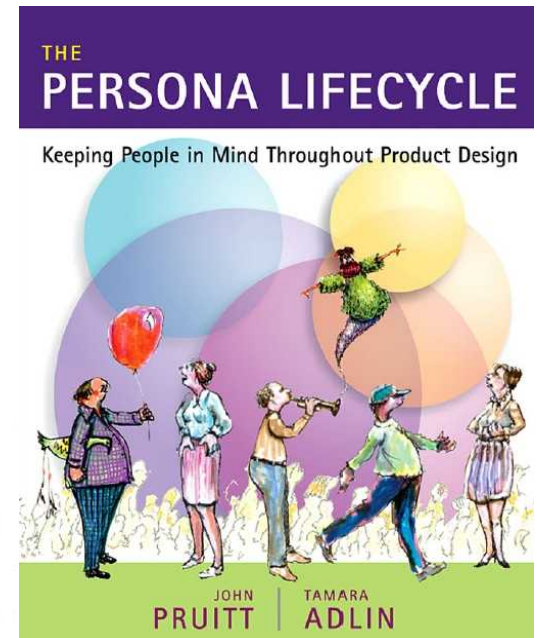Method popularized by Alan Cooper

Hypothetical user

Represents user subgroup

Based on information gained

through empirical research

Detailed description

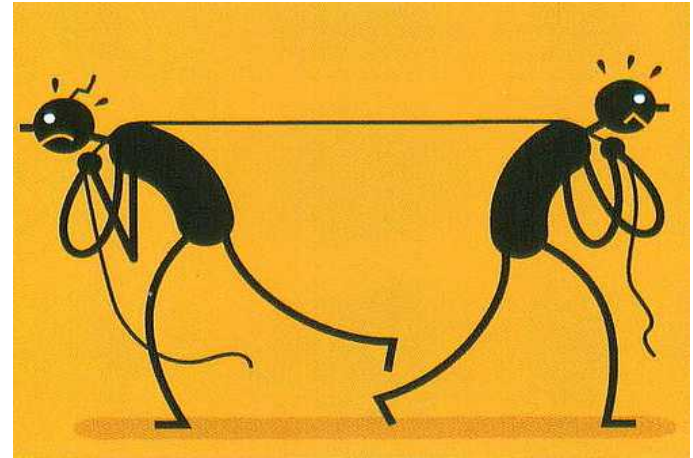Narrative description

Motivation!

THE
PERSONA LIFECYCLE

Keeping People in Mind Throughout Product Design

JOHN PRUITT | TAMARA ADLIN

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Personas – Their Benefits

Unifying

Beneficial for communication

Design errors that could be avoided using personas

- Incosistent vision

- Elastic user

- Designing for myself (Designing as if I am the only user.)

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Alan Cooper's Car

Personas: a real-world example

If an auto manufacturer tried to build a car that pleased every possible driver...

...it might look like this. Instead of pleasing everyone, the vehicle pleases no one.

What if instead the manaufacturer chose three specific drivers, who were representative of larger groups of similar drivers, and tried to please each of them.

Marge, *mother of three*

Marge wants safety and room for many passengers. A minivan meets her needs.

Jim, *construction worker*

Jim wants cargo space and the ability to carry heavy load. A pickup truck meets his needs.

Alesandro, *software engineer*

Alesandro wants sporty looks and speed. A two-door sports car meets his needs.

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Persona Example

User need set 1: 1: Romantic, relaxed, dining experience... Important Features for this need type were: Good decor, Romantic setting, Relaxed service, Trendy, Special Requirements (Low-fat, vegan etc.) and the type of crowd. Features not important were Price, Buffet-style dining option. Many respondents high on this factor spent more than $20 on a meal and went to restaurants as a couple.

Developing a Persona: Adam is 42 years old Sales Professional in a San Francisco company. He has been dating frequently and is always on the lookout for a great place to take a date to. For him, money is not an issue, a satisfying dining experience is.

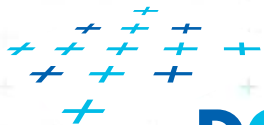# Basic Methods of Data Collection

Observation

Interview (focus group)

Survey

Experiment

Observation

Introspection (including Cognitive walkthrough)
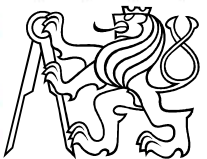
Extrospection

Ethnographic Research

Customer visit, Contextual inquiry

Monitoring day-to-day activities using observation and interviews

Ethnocentrism – using own values for evaluating other groups

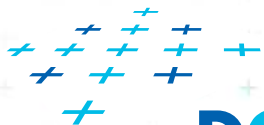Holistic (complex, elements, mutual relations)

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Ethnographic Research

Requires 'long-term' stay in the field

Flexible strategy

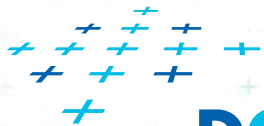Recording (notes, sketches, photos, audio and video recordings, company artifacts)

Interview

Structured

Semi-structured

Free

Cannot be used for hypothesis testing!

Interview - Evaluation

Advantages

High response rate

Allows researcher to ask follow-up questions

No self-selection

Disadvantages

No anonymity

Bias of interviewer's presence

Expensive

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Interview Principles

Goal, maintain rapport, integrate knowledge gained during the interview

Anonymity

Length of interview (30 – 90 minutes)

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Interview Principles

Behavioral approach - concentrate on immediate experience, not extrapolations

Words are not the only source of information

!Restate, but do not interpret!

   Stay non-judgmental!

Never say the participant is wrong

Be aware of your own expectations

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Interview Questions

Direct vs. Projective

"people's attitude"

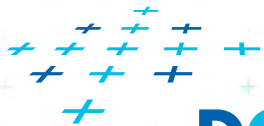 Technique of unfinished sentences

  Metaphors

Keep questions open-ended

Do not force opinions

No leading questions

Avoid binary questions

Be curious!

Survey - Evaluation

Advantages

Low costs

Anonymity

Ability to hear from wide range of people

Disadvantages

Low response rate (nonrespondent bias)

Respondent's uncertain identity

Self-selection

Complicated follow-up

Cognitive – verbal – behavioral disonance

Forces opinions

Instructions

What is its importance and how does it relate to the respondents

Personal data privacy (no marketing abuse)

Reward, acknowledgement

Contact

Questionnaire Design Principles

No chance to intervene – need maximum precision and clarity

Specific

Exhaustive

Mutually exclusive

Does the question really relate to what we intend to find out?

Is it necessary?

Is it understandable to everyone?

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Questionnaire Design Principles

Use scales (Likert is popular)

Do not ask 2 questions at once

Avoid suggestive questions

Are all the possible categories listed?

Stick to closed questions (Use open-ended question only when absolutely necessary?)

GIGO principle

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Survey Difficulties

People want everything (cheap, fast, reliable...)

People exaggerate

People answer despite their uncertainty (social pressure to have an opinion)

People lie!

Wanna Learn More?

Mike Kuniavsky: Observing The User Experience

Lazar et al.: Research Methods in Human-Computer Interaction

Miloslav Disman: Jak se vyrábí sociologická znalost

Credits: bandai.com

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Thank for your attention

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