User Perceptions and Attitudes in the Data Economy and their Contradictions

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Presenter

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	Easter Switzerland University of Applied Sciences
2004 – 2018	Senior Researcher
	SAP Research, Karlsruhe (Germany) & St. Gallen (CH)
Research:	Information Systems for the Digital Economy
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Project setting

VA-PEPR: 2020 - 2024

Interdisciplinary project from design and business informatics with participation of three universities (two in CH and one in the UK) and the Mozilla Foundation.

Objective

Voice assistants (VA), e.g., Alexa or Siri, are fast spreading digital applications. The project examines people's daily life experience with voice assistants in Switzerland, e.g., based on in-home studies.

The project aims to raise awareness of the economic, social, societal and ethical implications of voice assistants and propose innovative design solutions

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Focus of the presentation

Problem:

Voice assistants (VA) collect, use, store and transfer enormous amounts of personal data, which evoke privacy concerns with lots of users

Objectives:

- Investigate attitudes to privacy and data protection (also beyond VAs)
- Examine people's perceptions of potential risks to their privacy
- Explore possible solutions that users imagine to solve the problem
  - What can we learn from that about their current views?

Beyond voice assistants

Projecting the problem into the future

Data are not only transmitted via VAs but every time we interact with the internet. There is more and more such interaction.

These data are not simply used but they are stored by the service providers.

This is part of the service providers' business models; in return users get access to "cheap" services.

At the same time artificial intelligence becomes increasingly powerful and makes users more and transparent.

How do (young) users perceive this development? What do they expect?

Methodological approach

Approach: Conduct student workshops to produce videos about future problems and solutions in the data economy

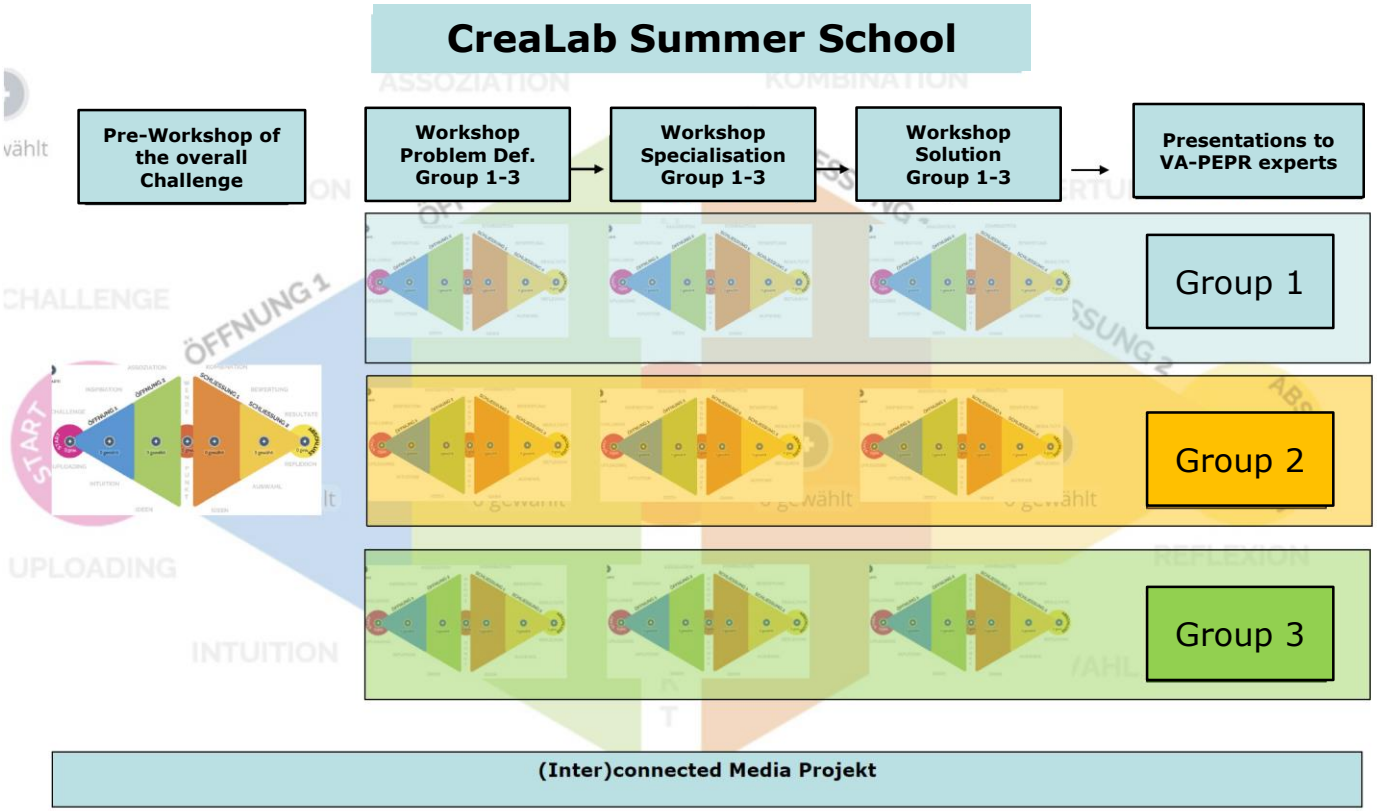
To give them time to dwell into the topic, there was a kick-off meeting 4 months before the actual workshops. Their tasks:

- Conduct a literature research on the topic of data economy and privacy and store it in a repository
- Keep a record of your research and give justification for the work they selected
- Use the online toolbox *becreate* to learn a methodology for systematically develop creative solution for a problem

Background of students:

Group	Major Subject	Gender
1	real estate	male
1	socio-cultural studies	female
1	value network management	female
1	mechanical engineering	male
1	social pedagogy	female
1	spatial design	female
2	real estate	female
2	communication	female
2	management and law	female
2	architecture	male
2	market and consumer psychology	male
2	social work	female
3	real estate	male
3	real estate	male
3	socio-cultural studies	female
3	architecture	male
3	finance and banking	male
3	marketing	female

Approach of the Summer School



Narrative approach to solutions

Design Fiction as development of a future scenario in a video providing a narrative combined with interviews describing challenges and possible solutions of the data economy in 2037:

- What opportunities as well as dangers or problems will the data economy in 2037 be associated with?

- How can the challenges related to privacy and data protection in 2037 be addressed?

Each of the 3 groups had a specific focus:

- individual
- organisational / economic
- legislative / societal

With the narrative approach we wanted to reveal uncertainties in the participants' attitudes towards the data economy.

Video Narratives

Video 1 – Individual Level

Problem: Data protection

Narrative: The protagonist of the video is affected by a cyber attack in which the attackers gain access to her data.

Solution: Personal data will be stored in the future in a data wallet managed by the state.

Video 2 – Organisational Level

Problem: Transparent users

Narrative: The protagonist comes to a job interview but is rejected due to open private information that the interviewer uses.

Solution: An avatar based on AI supports the user in deleting risky data from the internet.

Video Narratives

Video 3 – Societal Level

Problem: General distrust

Narrative: A reporter asks randomly selected people on the topic of trust in social media. People distrust each other and have lost a firm informational ground.

Solution: Automatic and social assessment of content published on the Internet with respect to its trustworthiness.

Direct observations:

- Companies' data collection was not addressed as a topic although we know form previous research people are ware of it.
- Economic aspects of personal data were hardly considered even though it was a central part of the challenge and the preparation.

Analytical methodology

Video analysis

Iterative approach

- Description of individual scenes (including timestamp, core message identification)
- Discussion of the interpretation in groups

Rationale: Videos provide a denser description and reveals more informative reports – following literature in design fiction.

Contradiction analysis

Group analysis:

Are the core messages consistent or do they reveal contradictions?

We took contradictions as indicators for issues that the participants are exposed to but that they might not consciously aware of.

Findings - contradictions

The central contradictions we found:

- C1.1: ”Central storage, data must be controlled by the state” vs. ”Distributed storage, data must not be controlled by a single institution”
- C1.2: ”Technology is a threat to the user (quantum computing)” vs. ”Technology is a friend of the user”

- C2.1: ”Use of personal data is in users’ interest” vs. ”Use of personal data in in the interest of companies”
- C2.2: ”Users can control data-based discrimination” vs. ”Users become victims of data-based discrimination ”

- C3.1: ”Credibility criteria for information are objective” vs. ”Credibility criteria for information are subjective”
- C3.2: ”Information sharing in social media is democratic” vs. ”Information sharing in social media in manipulative”

Conclusions

	Individual	*Social*
	Information Object	
Challenge	data ownership	equal access to technology
Design Target	users' data sovereignty	support by infrastructure
	Information Usage	
Challenge	control of data use	avoid discrimination
Design Target	usage transparency	bias detection in data
	Information Process	
Challenge	information reliability	information autonomy
Design Target	checks and regulations	control of ethical data usage

Thank you for your attendance!

Questions?

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