Towards Value-oriented Internet Services

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Critical Infrastructure
- Assets that are essential for the functioning of a society and economy

Examples
- Electricity generation, transmission and distribution
- Security services (police, military)
- Telecommunication (→ Internet)
- Water supply (drinking water, waste water …)
- …

… and other Critical Infrastructures, such as electricity and water supply increasingly depend on the Internet!!
Society increasingly depends on a reliable and secure Internet.
"We build an Internet that senses, thinks, and acts" → classical definition of a robot!

"We´re building a world-size robot, and we don´t even realize it“
But: Internet-based services as well as the Internet infrastructure itself do affect values

→ Lack of transparency !!
Similar Situation: Food Trade

Fair Trade

Organic Food

Transparency

Privacy
An **Internet**, that provides easily manageable and trustable **choices** out of a variety of **value-oriented services**

- Provision of value-oriented services
- Individual choice according to personal values
- Comprehensible implementation of values

→ Allow for diversity
Values

Values are **results of complex cultural and societal developments**

Values are **man made** and influence our action

Values are **neither good or bad**, per se. They require ethical and legal reflection.
Tight interplay between aspects of computer science and socio-economic sciences

Values and Conflicts

- Self-determination vs. profit (advertising)
- Hedonism vs. protection of minors
- Customer tie vs. competition

Actor

Consumer

Provider

Governance
Variety of (interdisciplinary) research questions

Individual desires

I do not want to travel through country A
I prefer „green“ routers
Please keep me away from user B´s traffic
...
I am not in a hurry

Values, such as Fairness

Fairness among users

Congestion control: fairness == same data rate
Translation of fairness through the protocol stack
Variety of (interdisciplinary) research questions

Validation

How to define values in a technical manner and proof that they are supported or not?

How to deal with fuzziness?

Relation between traditional performance measures and values?

Value-oriented Engineering

Engineering of human centered interfaces, software architectures …

Engineering for diversity – values change over time

Technical invariants in communication systems vs. values
Members and Research Areas

FairNet

- Web services
- Law
- Formal methods
- Marketing
- Human computer interfaces
- Ethics
- Software engineering
- Computer networks/Internet
- Psychology

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