How to Characterize a Research Line for User-System Interaction

Matthias Rauterberg
GOOGLE: rauterberg
Department Industrial Design
Eindhoven University of Technology

Thinker versus Tinker

“Don't worry about what anybody else is going to do... The best way to predict the future is to invent it. Really smart people with reasonable funding can do just about anything that doesn't violate too many of Newton's Laws!”
— Alan Kay in 1971,

"There is nothing so practical as a good theory."
— Ludwig Boltzmann

Ludwig Boltzmann (1844-1906)
Alan C. Kay (1940-)

© M. Rauterberg, 2005
Knowledge: but which one?

- Theory
  - Test
  - Design

- Design
  - Theory
  - Test

Model-T

Model-D

Research versus Design Paradigms

- positivism
  - technical rationality
    - rational problem solving
  - etc, e.g. “Vienna Circle”

- phenomenology
  - constructionism
    - design as reflective practice
  - etc, e.g. “idealism”

- etc, e.g. “hermeneutic”

- etc, e.g. “phase models”

Comparison of both Paradigms

**positivism:**
- \{\text{theory, model}\} \not\in \text{reality}
- reality (t_1) = reality (t_2)

**constructionism:**
- \{\text{theory, model}\} \in \text{reality}
- reality (t_1) \neq reality (t_2)

---

Results from both Paradigms

**positivism**
- limits

**constructionism**
- attractors
  - assessment criteria
  - design solutions
What is User-System Interaction about?

Goal:
Actual Performance
=>
Desired Performance

Interface Design or Interaction Design?
Challenges of USI research

The Three Different Views

USI Research Line
- basic cycle -

USI link to Industry
- marketing cycle -
USI Research Line
- development cycle -

USI Research Line
- validation cycle -
Conclusions

- a coherent and powerful corpus of descriptors and technical terminology [see HCI Glossary]
- a theoretical framework to investigate the interaction space
- a rigorous validation method to prove the design relevant knowledge