IBM Ireland Center for Advanced Studies

Dimensions of Computer Mediated Networks where People are Involved

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Agenda

- Before proceeding to R&D in the SoNet group, let us first think about “dimensions” of computer mediated networks where people are involved
  - Web and other computer mediated networks are evolving extremely fast.
  - Getting dimensions right will help us to see trends and outline a multidisciplinary approach for the SoNet Research group.

Three dimensions of human life

Three pillars and one fastening ring of networks

- Semantics
  - After all, we call ourselves "***homo sapiens***" meaning "Man the Wise"
  - Semantics
    - Semantic web technologies
    - Traditional AI, including Natural Language Understanding
- Social
  - We are social beings as well as individuals / "To live in a society and be free from it is impossible" / Sometimes we want to be "***homo ludens***" (the "playing man")
- Activities management
  - "***Homo faber***" (Latin for "Man the Smith" or "Man the Maker")
  - This is about evocation, "getting things done", action management, etc
- Human Computer Interaction (HCI)
  - The proliferation of Web 2.0 has lead to the emergence of massive *networks connecting people and various digital artefacts*. The efficiency of human navigation in such networks depends on the availability of suitable user interfaces powered by an "intelligent" backend which provides guidance and recommendations.
  - As not all of us all the time are knowledge workers, we'll probably need to move beyond the desktop metaphor.

Computer mediated networks are based on

Human Computer Interaction

Dimensions of human beings!

↔ Dimensions of software?

- In the past: Distinct research fields
  - SE = Software Engineering (dimensions of software *technology*)
  - HCI = Human Computer Interaction (dimensions of software *use*)

Dimensions of human beings!

↔ Dimensions of software?

- In the past: Distinct research fields (e.g. SE and HCI)
- Now: The Web is THE example for a joint venture of technology *and* its use
  - Enterprise social software (also known as Enterprise 2.0) tends to encourage use prior to providing structure.

→ 'Pillars' of computer mediated networks are dimensions of social software

Dimensions of human beings!

↔ Dimensions of software?

- In the past: Distinct research fields (e.g. SE and HCI)
- Now: The Web is THE example for a joint venture of technology *and* its use.

  → 'Pillars' of computer mediated networks are dimensions of social software
- Beyond: All of the dimensions of human beings concern software
  - Its production is influenced by the weight of the dimension under which it was developed, therefore 'semantics', 'socialness', or 'activities' in software represent the implementation result (=means) of the undercurrent dimension.
  - But: Means might overtake the dimension, e.g., we can do collaboration, so the 'social' dimension is easily reduced to 'collaborative'.
  - But also: Without semantic and social means the dimension 'Getting things done' couldn't prosper at all.

→ Cooperation of research fields

- Dimensions and means interdepend strongly, so the boundaries between Software Engineering and HCI are blurred!

Dimensions of human beings!

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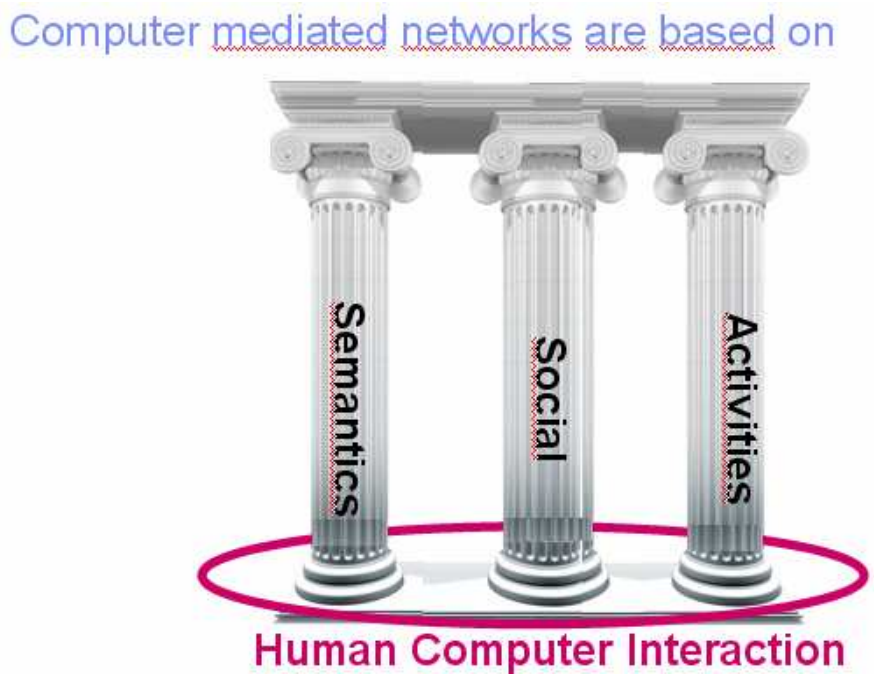
How to make SoNet an interdisciplinary group

- SoNet might focus on mining multidimensional networks
- and have extensive collaboration in the following areas:
  - Semantics
    - traditional AI, including Natural Language Understanding
    - Semantic web technologies
      - Nepomuk Partners
  - Social
    - IBM experts for social network analysis
  - Activities management
    - IBM expertise might be useful
  - Human Computer Interaction
    - KTH, DFKI



Conclusion

This cooperation will bring UCE close to the centre of European academic life!

