Gendered Conceptions in Processes of Software Development

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Research Objectives and Outline

Research objectives:
• How is gender inscribed in technological artefacts during the software development process?
• What explicit and implicit concepts of software quality are applied during the development process and what gendered implications are produced therefore?
• How do professional self-conceptions shape the development process and product?

Outline:
1. Research Design
2. Method “Mind Scripting”
3. Results of Case Studies
4. Conclusion: An Extended Definition of Software Quality
1. Research Design

Theoretical basis:
• Software designers permanently make unconscious, gendered presumptions referring to:
  • quality requirements of the software
  • future users and their preferences
  • the way of organizing software development processes which shape the design process and the outcome

Three case studies of different SW teams were conducted

Methods:
  ➢ semi-structured interviews with software developers
  ➢ Mind-Scripting: collective deconstruction of implicit assumptions
  ➢ Artefact analysis: gender inscriptions
2. Mind Scripting

• Deconstructing and comparing “mind scripts” to investigate collectively shared constructions of reality

• Focuses on how socialisation as social and gendered beings, educational background and professional socialisation translate into
  • inherent professional self-conceptions
  • working and engineering processes
  • technological artefacts that incorporate and reproduce social power structures on the basis of which they are being developed
3. Results of the Case Studies – A comparative analysis
Setting

• **Case Study “Game Design”**
  • Investigated development process: adventure game; quality leap was intended
  • 10 team members: managers, programmers, graphic artists and animation artists
  • Focus of Mind Scripting: explicit and implicit quality standards concerning computer games \(\rightarrow\) “When he/she tried out a computer game last time”

• **Case Study “Search Engine”**
  • Investigated development process: search engine based on semantic web
  • 11 sub-team members: managers, programmers, design analysts
  • Focus of Mind Scripting: process related aspects of software quality \(\rightarrow\) “When they made an implementation decision that was important to him/her”
Professional Self-Conception

- Ambivalence between fancying creative chaos and the need for more structure
  - Tension between free space for creativity and business environment

- Diversity within the team: different professional approaches
  - Management approach
  - Technical approach
  - Artistic approach
  - Scientific approach
  => valued unequally

- Division of labour: management, design, implementation
Understanding of Quality

- Technology development as social process of negotiation: different approaches have to be mediated
  - Inconsistent variety of quality definitions within the teams
  - Division of labour and hierarchies: who decides what is good quality?
- Two levels of quality: explicit objectified standards and subjectified “preferences”
- Implicit understandings of quality play an important role:
  - Game Design: describe what actually makes a game a good game
  - Search Engine: needed to specify and realize the general and abstract concepts
Use Context

• Ignorance of target groups and use context
  • Game Design: Devaluation of the „average“ user
  • Search Engine: Use context remains abstract

• „I-Methodology“ and Stereotyping
  • GD: Stereotyping presumptions on user-preferences and competences based on gender, age and nationality
  • SE: no shared understanding: introduction of an “ordinary mortal user”

=> Gendered inscriptions in artefacts

• Gendered conceptions for “realistic” character design
  • Male main character: “normal type of guy”, photo references
  • Female character: “beautiful and sexy”, therefore 3-D model as reference
4. Conclusion

- **Gender scripts in technological artefacts:**
  - Explicit and implicit understanding of Quality
  - What can be operationalised?
    - Objectified professional approaches/“subjective preferences”
  - Usability as objectified check list
  - Use context on a meta-level: what remains implicit and hidden

- **Unconsciously:** I-Methodology, imaginary user representations, social constructions of reality in classifications and game design

Social constructions and gender scripts
An Extended Definition of Software Quality

Traditional definition of software quality: technical feasibility

- Set of quality factors such as efficiency, flexibility, maintainability
- User satisfaction
- Errors and unexpected software behaviour

Process-oriented definition of software quality: mutual shaping of social and technical aspects

=> Operationalising the social components
Thank you!
Kiitos paljon!

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