Interaction design in the wild - some reflections on the context of design.

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Keynote

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My background (short)

• 1984: Social anthropology, Oslo.
• 1985: Design tools for teachers.
• 1986: Univ. of Trondheim.
• 1993: Apple Research, Calif.
• 2000: PhD: Understanding Interactivity.
• 2001: Interaction Design Institute Ivrea, Italy
• 2005: Mobile health informatics lab.
• 2006: NordiCHI 2006 conf. co-chair.
Interaction Design

- Interaction Design defined (ixda.org):
  - “Interaction Design is the professional discipline that defines the behavior of interactive products and how products communicate their functionality to the people who use them”
  - “Good interaction design makes products ranging from computer software to clock radios to cars more useful, usable, and desirable”
Quality criteria

...useful, usable, and desirable...
(Liz Sanders/SonicRim), from the Roman architect Vitruvius (50 BC): “Utility, strength and delight”.

• Utility/useful:
  – Usability, fits the needs.
• Strength/usable:
  – Technically well made.
• Delight/desirable:
  – Eye pleasing, culturally/socially desirable, interesting.

Colloseum

• Utility, strength and delight
Colloseum

• “Utility, strength and delight” for whom?
  – blind to the ethical/political dimension.

Power relations

“*Ave, Caesar, morituri te salutant.*”
Interaction Design

• Xerox Star (1975-80)
  – User studies
  – Prototyping
  – Usability testing
  – Graphical user interfaces
  – Mouse input
  – Desktop metaphor
  – Object-oriented UI design

Scandinavian Interaction Design

• “useful, usable, and desirable” + a social/political/ethical dimension.

The UTOPIA project (1981-86), Ehn, Bødker++:
  – Including the users as design partners
  – Respecting the “tacit knowledge” of the worker
  – Empowering the workers vis-à-vis management.

Storyboard/Scenarios Mockups/Paper prototypes Running prototypes
The politics of technology

• Examples in the news:
  – Windows vs. Linux (Microsoft vs. GNU)
  – DVD formats, MP3, file sharing.
  – Police access to mobile phone logs.

• Not so much in the news:
  – Computer systems with hopeless usability (e.g. patient record systems in hospitals)
  – The digital divide (e.g. web-based systems in primary schools)

Anecdote 1: Amusement park
Anecdote 2: Fast food restaurant

Interaction design state-of-the-art

• Quality criteria:
  – Useful, usable, desirable and ethical.
• A set of methods and techniques for reaching these goals:
  – Field studies, exploratory prototyping, scenario building, personas, usability testing, cultural probes, drama workshops, information architecture maps, card sorting, visual communication, interface metaphors,
Understanding the context of use

Case: Electronic Medical Records (EMR)

- National EMR research center established in Trondheim in 2004. Funded by the Norwegian Research Council.
- Focus on system integration, user involvement, field studies of EMR use, and mobile EMR.
- Includes a usability lab for testing both desktop and mobile EMR systems.
Usability lab with mobile walls

The lab in use

Cameras.

Health workers in a simulated ward

Recording and analysing (Noldus++)
Drama workshops

- Physicians and nurses act out situations from the hospital and build paper prototypes of new solutions.
Prototyping and usability testing

• Example:
  – Distributed user interfaces on nurse PDA and patient bedside terminals.
  – Running prototype tested in lab.

All well?

• We have the methods, the theory, and the skills to do high quality interaction design.
• BUT:
  – The methods are not widely used
  – Often fragmentary use
  – Not integrated into current systems development practice.
  – Often as “plug-ins” or “add-ons” late in projects.
Façade builders

Bring in the interaction designers.

Designers & Programmers

Fine, just hand it over to the programmers.
Understanding the context of design

A complex web of relations and communication channels
Example 1: Power button

- Apple PowerMac 6100

![Image of PowerMac 6100](image.png)

Mac: Power button
PC: Floppy eject

Apple computer internal

- HW vs. SW people.
- Desktop vs. Server vs. Laptop etc.
- Management / Programmers
- ++++

- \(\rightarrow\) VERY COMPLEX!
Example 2: Healthcare IT

Regional healthcare org.

Regional acquisition organization

Software companies

Hospitals

Software developers

End-users (Doctors, Nurses,)

Challenge: How get the developers talk to the users?

Tender projects

• Problem:
  – No process requirements in the contracts.
  – All end-user contact done prior to contract.
Two years later

- New mobile phones with major usability problems. Months before new update appeared.
- IT systems that are unstable and unreliable.
- Bad fit with current work practice.
- Much negative publicity in local news.

Example 3: Web portal

- Rational Unified Process (RUP)
RUP processes

- RUP defines processes, e.g. requirements handling.

Interaction design & RUP

- The activity *Interface design* was placed very late, and with no user contact.
- Quote from a designer in the project:
  - “I do not have enough data to make the user interface. I do not know the users and their work situation”.
- The customer did not provide contact with the real users, only with a self appointed “user advocate”.
Suggestions for process changes

- A new UCD process.
- Does it solve the problem?
- Add-ons, plug-ins.
- Need for change in attitude.

Impact

Having an impact on systems development requires:

1. **A deep understanding of how software is made today:**
   - How are the users involved?
   - Who are the stakeholders, and what are their relations?
   - What methods and techniques do they use?
   - What are their constraints?
   - What are their mindsets?
Impact

Having an impact on systems development requires:

2. **Methodology development in close cooperation with developers, users and organizations:**
   - Applying user-centered design methods to the projects, with a focus on their constraints concerning time, competence and resources.
   - Working at all levels of the organization simultaneously: developers, project leaders, and top management.
   - Looking at all aspects of the project: bid process, contracts, requirements, analysis, design, implementation, training, deployment, etc.

To sum up

- The context-of-design is just as complex and *heterogeneous* as the context-of-use.
- We can use our training from studies of context-of-use to understand the context-of-design.
- Without a focus on the context-of-design we run the danger of being marginalized as professionals.