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

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Keynote

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My background (short)

- 1982: M.Sc. Computer Science, Trondheim.
- 1984: Social anthropology, Oslo.
- 1985: Design tools for teachers.
- 1986: Univ. of Trondheim.
- 1993: Apple Research, Calif.
- 1998: Stanford CS, Interval Research.
- 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”

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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

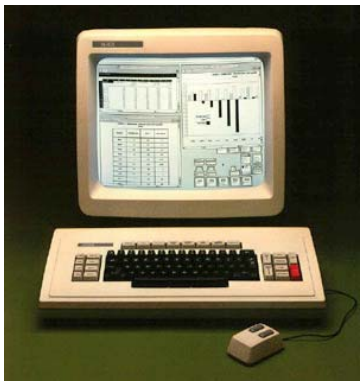
- “Utility, strength and delight” for whom?
  – blind to the ethical/political dimension.

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.**

Storyboards/Scenarios

Mockups/Paper prototypes

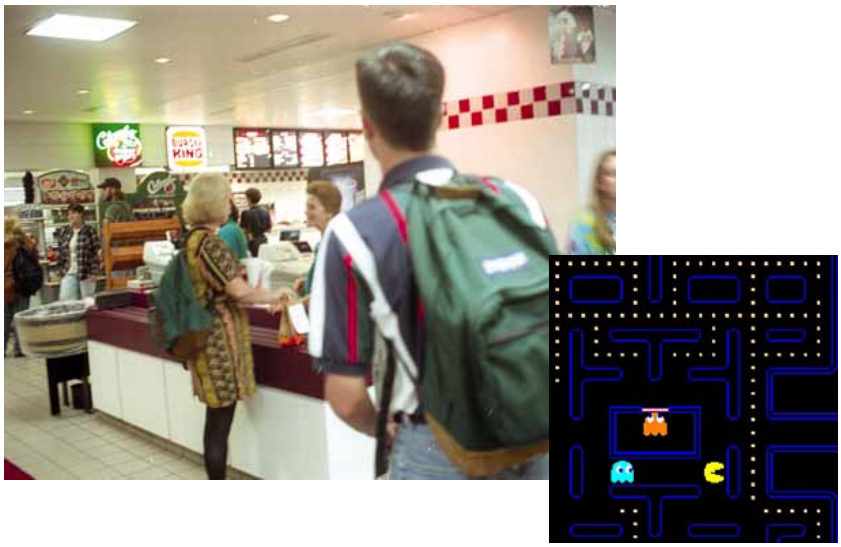
Running prototypes

The politics of technology

- Examples in the news:
  - Windows vs. Linux (Microsoft vs. GNU)
  - Yahoo & Google in China: Access to search logs.
  - 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

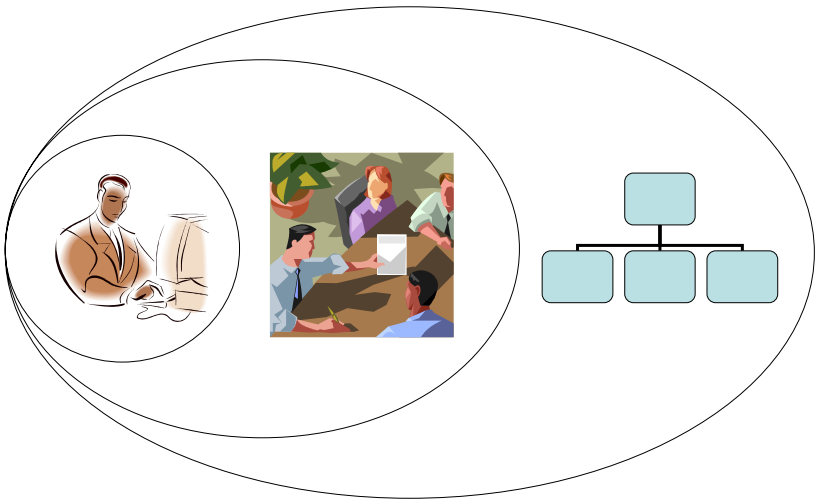
Anecdote 2: Fast food restaurant



Interaction design state-of-the-art

- Quality crieteria:
  - 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,,,

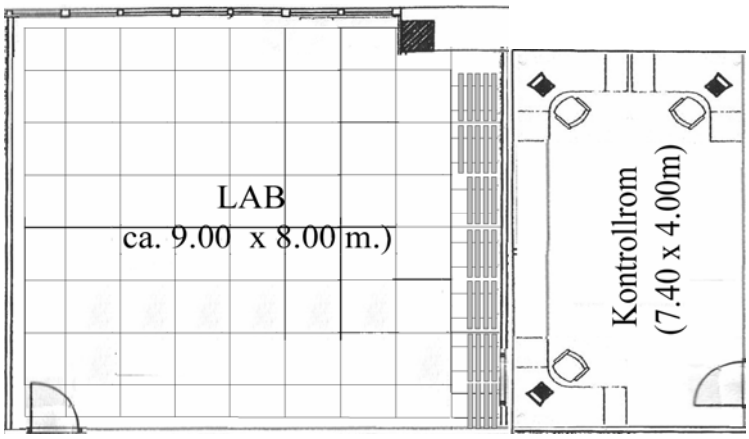
Understanding the context of use



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

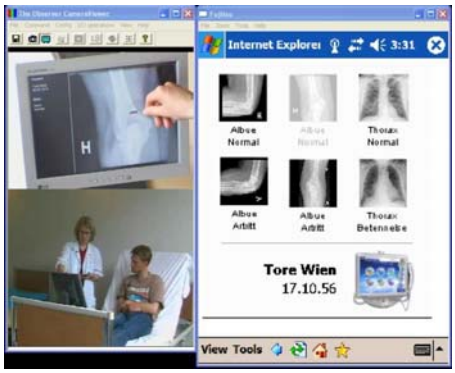
Recording and analysing (Noldus++)

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.



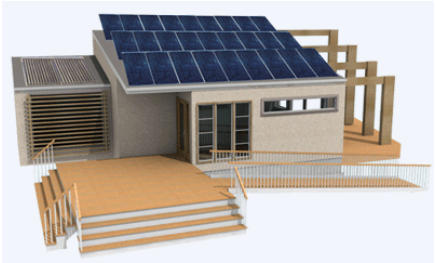
All well?

- 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

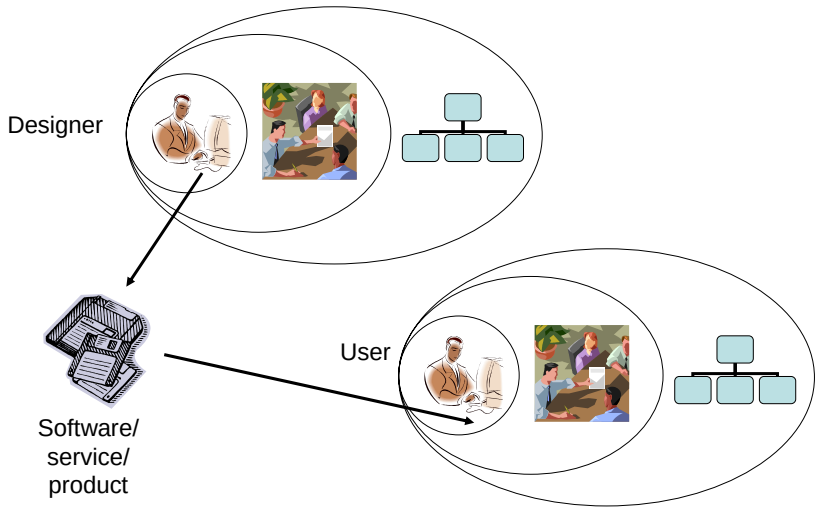
Bring in the interaction designers.

Designers & Programmers

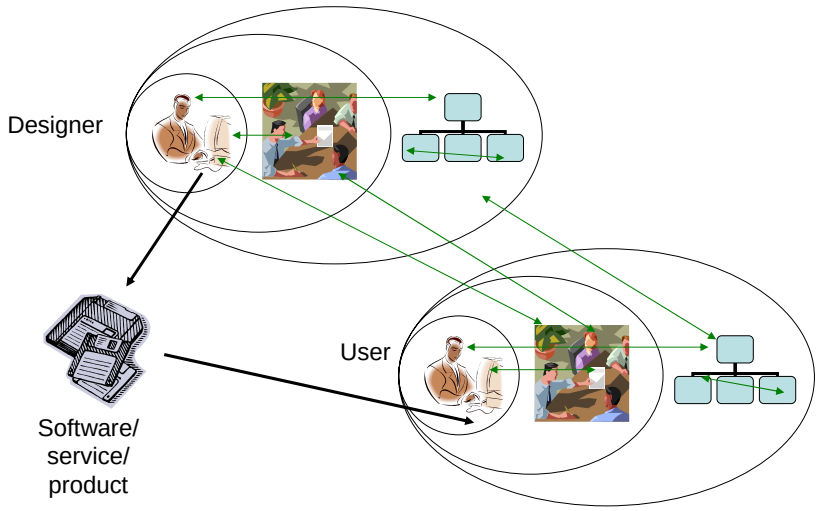


Fine, just hand it over to the programmers.

Understanding the context of design



A complex web of relations and communication channels



Example 1: Power button

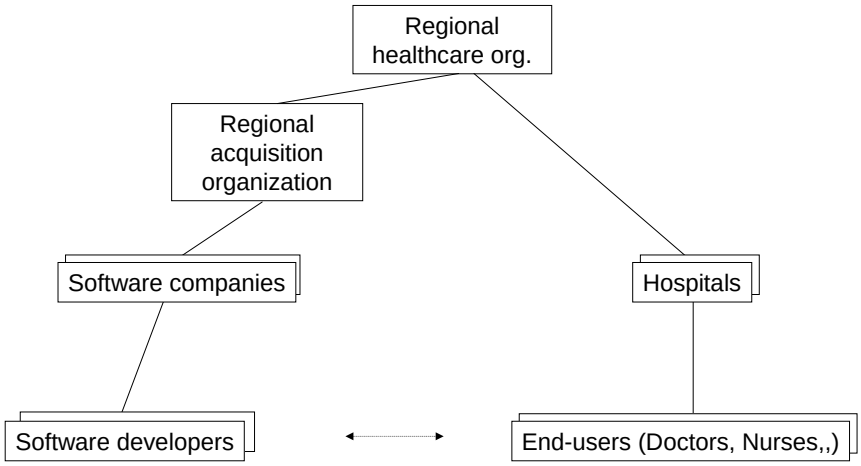
- Apple PowerMac 6100

Apple computer internal

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

- → VERY COMPLEX!

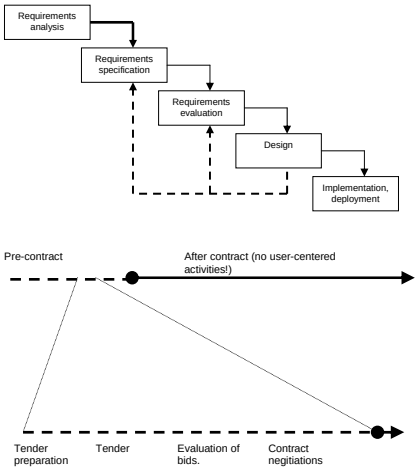
Example 2: Healthcare IT



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.

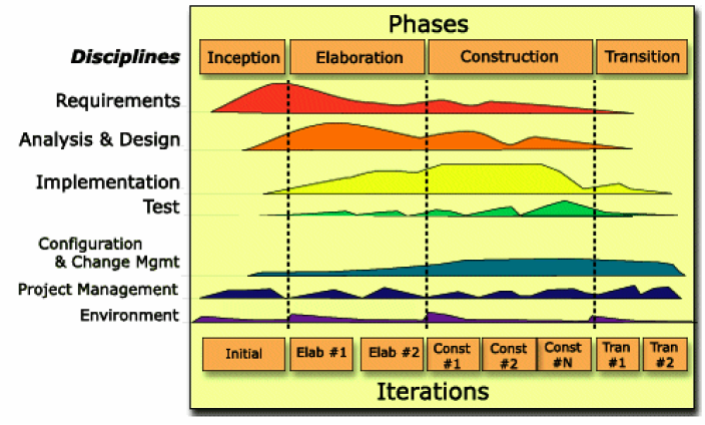


Two years later

- 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.

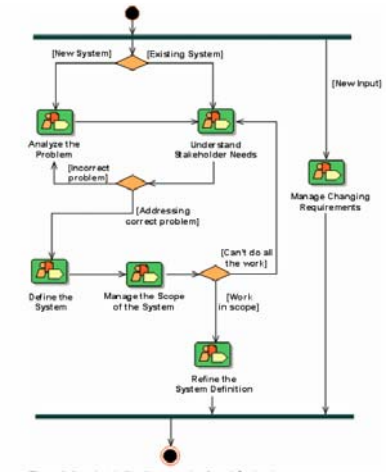
Example 3: Web portal

- Rational Unified Process (RUP)



RUP processes

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

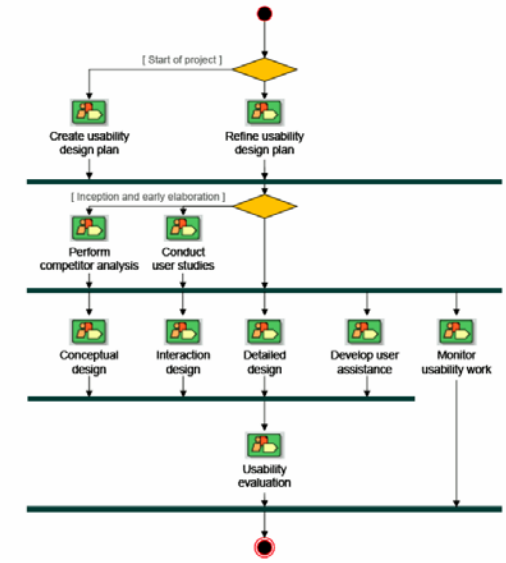


Interaction design & RUP

- 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,,,.

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.