IT in health care and administrative work
Domain specific aspects

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1. IT in health care – domain specific aspects
Development, design, usability

Many different kind of applications
Important for safety, efficiency
Life saving systems
Administration

Image processing

Home care – mobile work
Mobile acute care
Example

Reading of a lab report

What does this report contain?
How can it be perceived and analysed by a professional user?

And this?
Design heuristics e.g.

- Design for skilled professional users
- Let humans “be in full control”, do not control the work process
- “Obvious” interaction, let the user be concentrated on e.g. the patient
- Do the design “complete”, i.e. support direct start of work processes
- Disposition of the screen area
  - Show overview and details simultaneously
  - Fixed and logic spatial visualisation
- Avoid scrolling of text, i.e. support efficient reading
- Support efficient localization and access to information (sometimes mobile)

User interface design

- Design metaphor: Room and workspaces is efficient!
- Use e.g. design heuristics to design usable interfaces

An example of interface design

- One task – one work space
- The interface should be ready for immediate use
- See details and overview simultaneously
- Emphasize important information
- Simple and obvious navigation
- Support identification of important relations
- Support pattern recognition
- Support speed for skilled users
- Etc.
Example
Select “record room” and patient ID
Case – E-records

Many hospitals install large systems for e.g. patient records, digital images etc. Often costs are very high. Often large and long lasting problems with introduction, usability, technical stability, benefit etc. People are very “unhappy”. The whole process is often not optimal… Analyse some examples...

Case....

IT systems for mobile work

It is often important that information is available at exactly the right place and time. Mobile systems can support work that is mobile. Mobile systems can make work more mobile. Usability in mobile systems is problematic...
Mobile work

Mobile technology

Mobile technology
Mobile usability

- Different technology – different possibilities and problems!
- Examples of this?

IT in home care

- Home care
  - Home health care, can be advanced
  - Care for the elderly
  - Communication
  - E-health

IT in home care

- Many projects and systems exist.
- Search for “IT in home care” etc, MANY hits!!
- Few (none?) systems have been successful.
  - Why?
Example - VIHO

- Specify a vision of future home care work, improving the work, service to the elderly, quality and innovative use of IT.

VIHO

- A vision seminar process – the future work in home care.
- Analysis of today’s work – problems...
- How can innovative use of IT support a positive development?
  - Higher skills
  - Improved quality
  - Communication
  - Evaluation, quality assurance

VIHO...

Change of work organisation and processes, prototypes of new IT

- Economy
- Competence, education and training
- Use of working time
- Scheduling
- Work planning
- Work evaluation
- Communication
- Information support
- Leadership
Conclusions

- In health care the efficiency and usability aspects are very important
  - Sensitive patient relations
  - The will refuse to use bad systems
- The experiences are not so good: high costs, problematic long projects, irritation, no control of benefits etc.
- The potential to use IT in an innovative way is enormous!

Administrative work

Work is changing, from
Administrative work is found everywhere

- 25 % of Swedish work-force
- Almost 100 % computer supported
- In offices, administrative departments.....
- Bank, insurance, governmental ....
- The base is “case handling” – a process where a “case” is handled by somebody from “input” to “output”.

Some important trends

- Computer support was often in-house developed
  - Expensive, slow process, can be customer tailored
- A strong trend towards web-systems
  - Usability problems (why??)
  - Communication problems
Trends...
- E-solutions (E-bank, E-government 24-hour offices, etc.)
- All cases are digital
- The customer initiates the case via web-systems
- Automatic case handling
- Communication customer – handler
- Usability problems "in both ends"
- Require new organisations – old patterns must be changed
- A new type of jobs are created.....
  (Controlled? Work environment?)

The case factory....

Have we seen that before...?
new jobs....
- General processes and work-flow systems
- New-Taylorism and fragmented work – or???
- Design of the new IT-systems, interfaces? How?

Trends...
- General systems for administration
- Administration is strongly decentralised (everybody does his/her own administration)
- Very many different tasks and systems (economy, travel, time reports, document handling, case handling, holiday applic., competence register, web publication.....)
- What does the “whole” look like?

more....
- Usability problems
- Many separate systems
- Systems do not communicate
- Different look-and-feel
- Different log-in, many passwords
- It takes time to change system
- The work is fragmented, the “actual work” disturbed, stress...
- How can this be avoided?
Assignment 4

- Assignment 4: Developing for usability in some special domains
  - Process control
  - Health care
  - Administrative work
- Optional assignments – choose one domain.

Assignment 4:2 and 3

- Option 2: IT in health care
  - What makes the health care domain so specific with regard to design and development of efficient and usable IT?
  - Analyse cases where they have had problems. Describe and analyse problems, causes, possible solutions...
- Option 3: IT in the administrative domain
  - Select one "trend", describe and analyse it with regard to the systems development process and the usability of the end product. See work and IT as a whole.
  - Problems and possible solutions?