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UNIVERSITET

L14 – USCD in Practice

– Interaction Design, Examples and a Case

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THE UK'S No.1 VIDEOMAKING MAGAZINE • MAY 2002 **USER**

GOING PRO!

How to tell High Def
from Betacam, and

SOUND ADVICE

The benefits of digital
audio direct to your PC

Why?



Does it Get Any Better?

- Philips Pronto and a recent model from Logitech.



Is This the Optimal Solution?!?



Available, now!



What's the Commotion?



Elicit real needs or create new needs?

In Line with Consumer/Users' Needs? = Usable?



Snabbinstruktion

- läs dock alltid bruksanvisningen



- Ladda batteriet 24 timmar innan du använder den första gången.
- Avaktivera pinkod om sådan finns genom att använda en mobiltelefon av standardtyp.
- Förprogrammera upp till 5 telefonnummer med hjälp av en mobiltelefon av standardtyp. När du sparar dina nummer på SIM-kortet måste du ange siffrorna 1, 2, 3, 4 eller 5 först i namnfältet för att programmeringen ska fungera. Tex. 1son, 2dotter.
- OBS! Tänk på att snabbvalen måste sparas på SIM-kortet och ej i telefonboken.
- Provring dina lagrade telefonnummer.
- När batterierna är slut hörs en varningssignal.
- Om du trycker på den gröna knappen under samtal aktiveras högtalarfunktionen.
- Om du håller in den gröna knappen en längre stund kopplas du automatiskt till SOS.
- Du kan välja mellan 8 ringsignaler genom att trycka på volymkontrollen som finns på sidan.

Obs! När indikationslampan har ett fast sken betyder detta även att du måste avaktivera pinkoden. Detta framgår tyvärr inte i bruksanvisningen.

Layers of UX – User Experience



“Bling”
– the visuals

Control
– interaction, information, functions

Utility
– the technical “enablers”

Inspired By Christian Lindholm, at Fjord, www.christianlindholm.com/christianlindholm/2009/02/mobile-experiences-the-new-paradigm.html

A Design Case – mediPal

Background to the Case

- Consultant work :: Usability Designer. Spent approximately 190 hours in the project, during six months.
- Design for people with special needs.
- Interaction design for a handheld computer:: PDA.
- An early version (Beta) of the system was already developed and tried out by a couple of users.
- Focus on the UCSD process from a consultant perspective.

Objectives for the Medical Friend – mediPal

- A PDA to support and help people with chronic diseases, such as Parkinson, to better manage their day-to-day life; “give them a better way of living”.
- A reminder – tells the patient when to take medication.
- “Tunes” the medication; number of pills, strength, etc.
- The system collects data and gives feedback. Helps the doctor to give better treatment.
- Always around, day and night.

Living with Parkinson's Disease

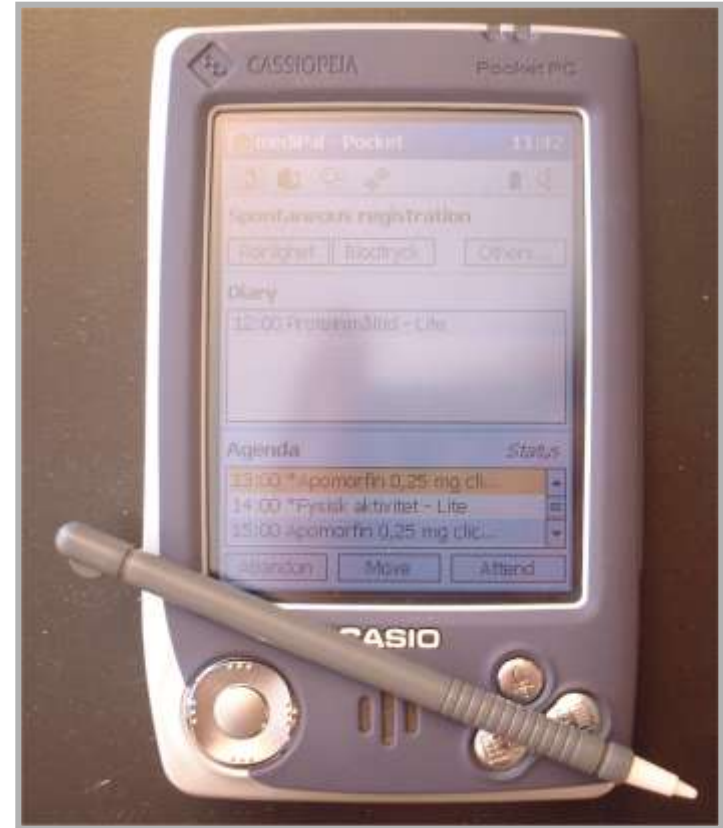
- People living with Parkinson's disease are “stuck to a tight schedule”. Their lives are “controlled” by medication.
- The conditions get worse over time, and the medication becomes more and more important. In the beginning they take pills every 6th hour, later every 2nd hour.
- Daily routines are important: exercising, eating at regular hours, etc. Also what they eat is important, e.g. avoiding protein (interacts with L-dopa).

Designing for a PDA – Implications on Design?

- The way you interact.
- Availability, accessibility and mobility.
- The limited space on the screen (240 by 320 pixels) and physical size.
- Comes with other expectations, compared to PCs:: handheld and small.
- No traditional keyboard.
- Touch sensitive screen.
- Runs on battery.
- The development environment, database, performance, etc.

What was the Problem, My Assignment?

- Make it easier to use!
- Wanted it to be perceived as a "serious" product...
- "We know that we have all the functions needed, make it look nice"!



Existing Version...

The image shows a screenshot of a mobile application interface for 'MediPal'. The interface is displayed on a screen with a blue header bar. The header bar contains the 'MediPal' logo on the left and the time '2:45p' on the right. Below the header bar, the date and time 'Tisdag 24-04-2001, 14:45' are shown, followed by a right-pointing arrow button. The main content area consists of two white rectangular boxes with black borders. The first box contains the text 'Överrörlighet' and the second box contains the text 'Stelhet'. Below these boxes, the text 'Förra larmet ignorerades 14:10' and 'Alarm kl. 15:05, om 0 h 20 min' are displayed. A third white rectangular box with a black border contains the text 'Ta 1.00 Madopark Depot 25'. At the bottom of the screen, there are four purple buttons with white text arranged in a 2x2 grid. The buttons are labeled 'Ta alarm nu', 'Alarm av', 'Dagbok', and 'Registrera nu'.

MediPal 2:45p

Tisdag 24-04-2001, 14:45 >

Överrörlighet

Stelhet

Förra larmet ignorerades 14:10
Alarm kl. 15:05, om 0 h 20 min

Ta 1.00 Madopark Depot 25

Ta alarm nu Alarm av

Dagbok Registrera nu

Problems in the Earlier Version

- Users didn't feel in control. They "got lost". Structure and interaction were not very usable.
- Some long interaction sequences and even illogical sequences, e.g. when attending to a alarm.
- The aesthetic design was defective, e.g. background images, color scheme, size of buttons. Lead to, among other things, unnecessary cognitive problems.
- Users didn't have a good enough overview of events. Could not foresee the next couple of activities.
- Etc...

Project Team

- Nurse – specialised in Parkinson
- Usability Designer
- Technical project leader
- Developers, 2-3
- CEO – responsible for the product

No experience in user-centred activities or usability...

The Process :: Lightweight and Tailored UCSD

- Review of all points of view that had come from different stakeholders, including early users.
- Analysis of all screens and dialogs.
- User interviews.

Report – analysis report

- New design phase – paper and pencil, sketches in a drawing program.
- Evaluations with users.
- Continued design – prototype on the PDA.

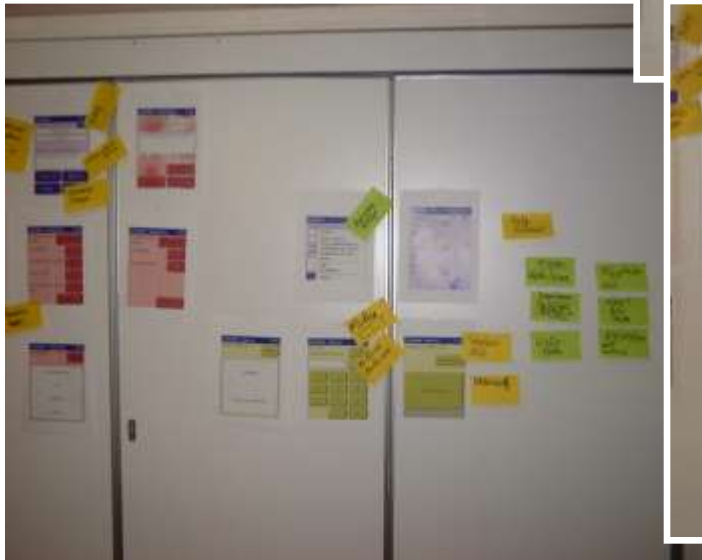
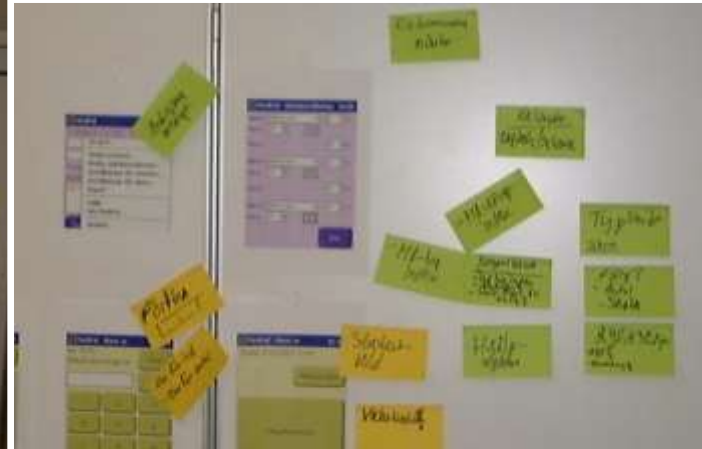
Report – design report

User Profiles – How We Used Them

- Goal: to focus the team on users and the usage of the system.
- Gathered data, mostly already known “facts” provided by the nurse.
- Fictitious characters (patients), but with real attributes.
- We did put them on a wall in our project room.



Process :: Analysis of Dialogs

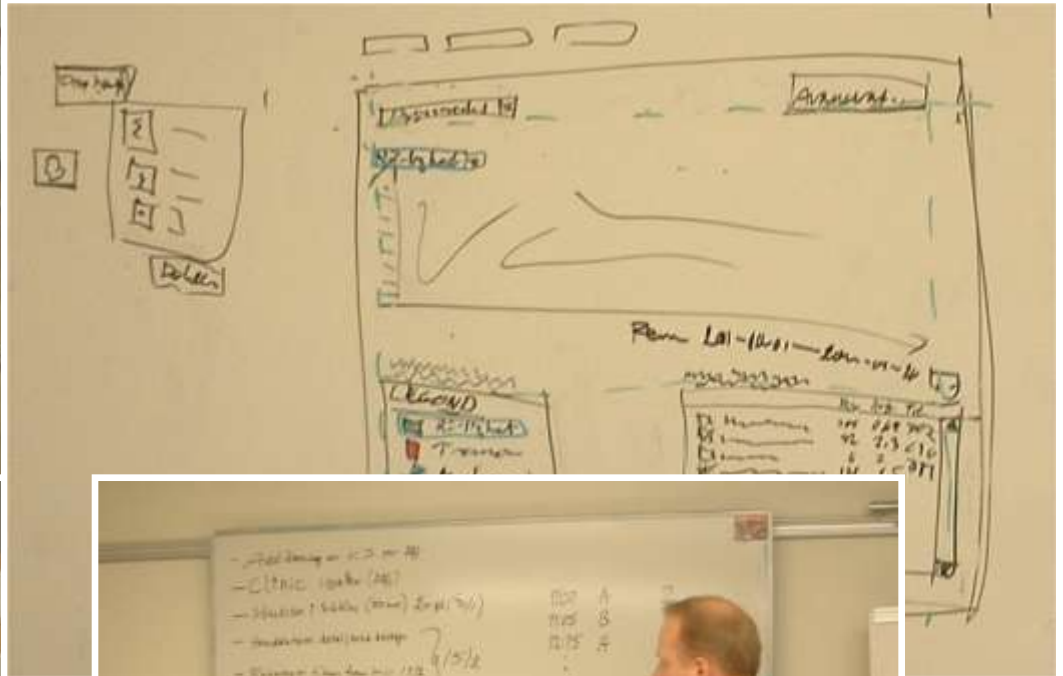


Studies of User Using an Early Version

- Interviews
- Evaluations
- Gathering data

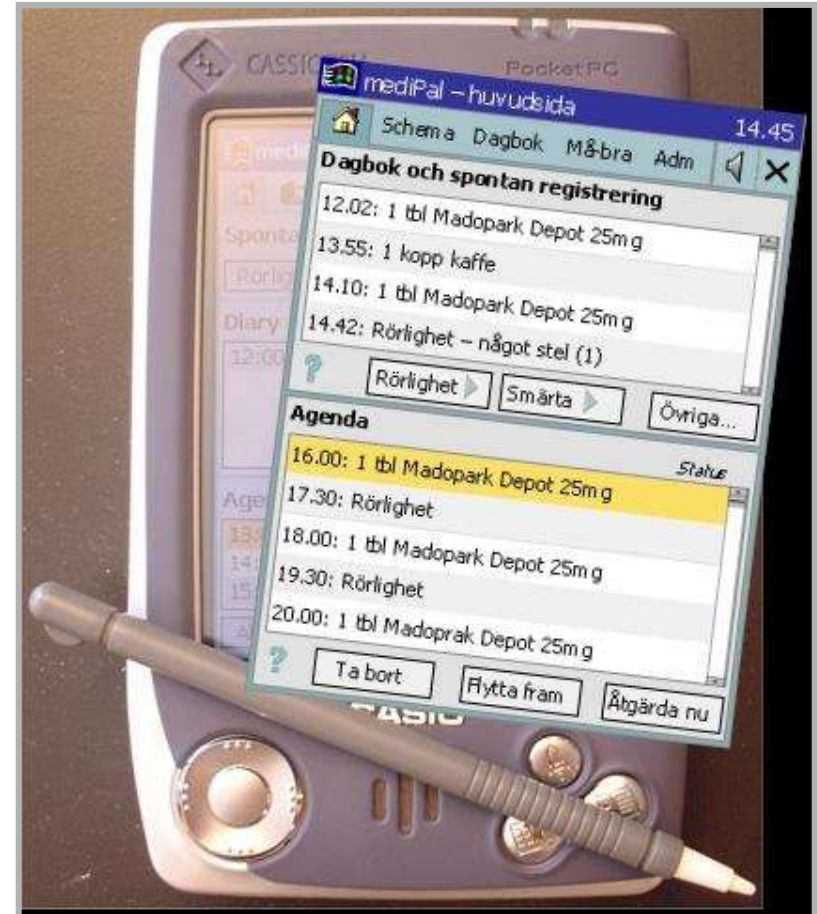


Process :: Design



Example :: Evaluating a Paper Prototype

- We used a paper prototype together with the PDA. We took the paper sketches and designed them in a drawing program. Then we printed the “windows” on cardboard paper, and cut them to fit the display of the PDA.



Challenges in Applying UCSD

- Usability versus business goals.
- “Build” an understanding of what UCSD is and that it needs special procedures and a “special attitude”.
- Tell the management that a product is not ready just because we have a prototype!
- To really work iteratively.
- Access to users.

The user groups :: their requirements and special conditions.

UCSD Had a Major Impact

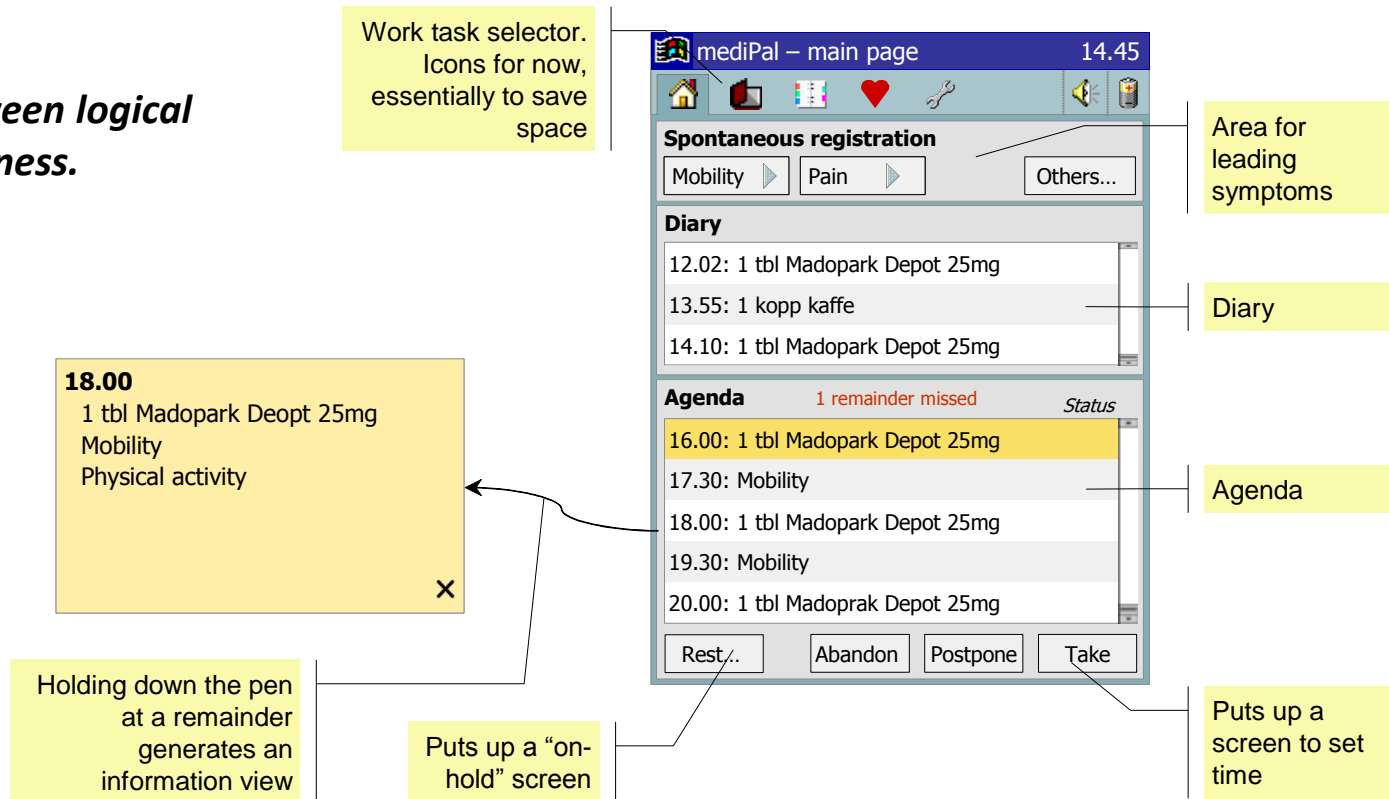
- We did not just change the look of the system. We eventually changed the whole interaction (dialog), and also altered quite a lot of the functionality. The usability focus and the UCSD approach had a much greater influence on the re-design than anyone could foresee.
- The managers at the product company were surprised that the re-design had such a great impact on the system. What they expected to be a minor “face-lift”, turned out to be a major make over.

Example :: Final Design of "Main Page"

Shallow interaction structure.

A balance between logical steps and swiftness.

Simplicity.



What Can Be Learned :: Process

- The tailoring of the UCSD process was necessary. We could not have pushed harder for a change in the company's development practices. We realised that it had to be a step-by-step process, changing the work practices for the team members as well as for the managers.
- Having the usability designer leaving the project right at the start of the construction phase was a logical decision in the managers' eyes, but resulted in a lack of user and usability focus during this phase. This was reported numerous times by team members in later communications. The usability design and championing aspects can never be overrated.

What Can Be Learned :: User participation

- It was a great advantage to work with people who know the domain and the user characteristics thoroughly. In this case the relation between the nurse and me (the usability designer) turned out to be fruitful. We complemented each other in knowledge and experience, and worked efficiently together.
- The team managed to focus on usability, e.g. via the usage of a persona, but we did not succeed in having active user participation.
- We spent too little time with users.

What Can Be Learned :: Design

- The design phase, with dedicated activities for going through conceptual design, interaction design, and lastly detailed design, was considered a good approach.
- The adaptation of the workspace metaphor (a design pattern) to the small format of the PDA was a challenge, but turned out quite well.
- The evaluation of the prototype with paper windows used on top of the PDA was seen as an elegant and effective way of carrying out the usability evaluation.



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Thank You For Cooperating!

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