User interface for a system with 7 modes, Media Center

Presentation at Fraunhofer-Institut für Arbeitswirtschaft und Organisation IAO

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Fujitsu Siemens Computers, short facts:

- Founded in 1999 from Fujitsu Computer (Europe) Limited and Siemens Computers.

- Full-line IT supplier
  - from Consumer products to high-end servers solutions

- Turn over
  - Forecast Fy06 €6,0 Billion

- Employees
  - Approx 11,000 employees (as of Jan 2007)

- Operating in all markets across Europe, Middle East and Africa
Our Consumer divisions Digital Home offering is built on a system approach.

Flexible functionality ⇒ You are Admin

All-you-need functionality ⇒ no Admin
We had a long way to a Media Center.

FSCs development of the Media Center

MultiMedia Star
PC
Media Cent
DVB PVR
DVB STB
IP STB

Analog- DVB- boards
MMIB
ACTIVY 210

ACTIVY Media Center
ACTIVY 300

SCALEO E

ACTIVY 200

1995  -6  -7  -8  -9  2000  -1  -2  -3  -4  -5  -6  -7
finally we presented our Media Center at CEBIT 2004..
We had a lot of functions and modes to analyze..

- TV with a STB function with over 1000 channels for DVB-Version
  - with dual tuners
  - with Pay-TV
  - with time-shift
  - with EPG
  - with instant, EPG based and repetitive recording modes
  - with recording editing

- With a CD/DVD player and recorder from data files, media and video
- With USB, HDD and networked Media playback (Music, Photo, Video)
- With a Camcorder DV25 recording and conversion to MPEG2
- With Internet WWW and Internet radio
a key dimensioning factor was the usage pattern..

Usage pattern with Media Center

- TV: 50% of time
- DVD/CD usage: 30% of time
- MP3 playback: 10% of time
- Picture watching: 5% of time
- Video clips: 5% of time
- Internet services: 5% of time
there would be extremes in use complexity:

- TV with STB function (the most used)
  - It uses only 5 buttons

- Internet WWW
  - we used 34 buttons to control it!

(or a lot of submenus that you would have to actuate with the pointer)
What targets did we have (1).

- We had to divide the menus in
  - Main menu
  - And context menu in each mode as the modes where sometimes very functional
What targets did we have (2)...

- We wanted to keep the hierarchy low
  - In general maximum 3 levels
    - therefore select object, then action
  - Microsoft's version goes often to 9 levels
    - They select action, then object

- We later learned that users wanted direct access to the most common tasks, we added direct jump to more modes:
  - Live TV
  - Timeshift
  - Now and next program
  - Recordings listing for playback
  - EPG overview so I can program recordings
  - What have I programmed as recordings
  - CD/DVD playback
What targets did we have (3)...

- We wanted to be consistent
  - E.g. where information would be for each menu
    - Users hate to look around to find the information

- We wanted not to overload the user
  - We reduced the information to a minimum for each menu or interaction

- We had not time or money to reinvent user interaction
  - We had to use classical TV style interaction methods like IR remote, Cross with OK, Color buttons
What we did (1)...

- We would keep the menus simple:
  - only up<>down navigation with OK executing the most likely function and additional functions on color keys:

![Start Menu](image-url)
What we did (2)...

- We decided that TV is TV, i.e. the system woke up into full screen TV with no menus.

- At this time most others had a main menu with TV as PIP
  - to get to Live TV you needed to select it
What we did (3)...

- We decided that we would use icons in the lists to show what object it was:
We would also use the icons to show different status of list objects:
What we did (5).

- We made all text input via same layout pop-up SMS screen:
What we did (6)...

- We made a remote with the double cross to enable 2 dimensional paging in Internet and EPG:
The remote..

- Of course it had to many buttons! BUT:
  - We introduced tactile features
  - Delete buttons to control TV, Surround sound etc..
  - Delete buttons that can be used on the cross
  - 10 of 12 buttons are standard
  - standard
  - very good feedback
  - standard
What we did (7)..

- We could use the same menu structure even for recording editing:
What we did a few things right but what did we do wrong?

- Many things, for once the main menu did not tell you what you could do with the system:
What we did we do wrong (2)?

- Such a hierarchical main menu would have got the system functions explained much better:
What we did we do wrong (3)?

- We invested a lot of work in a Help system:
  - We should have made the menus more self-explanatory instead
Conclusions

- We managed to keep the UI logical and clean with a minimal of information on the screen
  - We went a bit too far on reducing the information on what the user had available as commands in each menu

- We managed to keep all 7 modes in the same user metaphor
  - Internet WWW was the most difficult challenge, the mode is very useful today especially with HD flat screens

- We constructed a remote which was easy and powerful to use once you had passed the initial hurdle of “its many buttons”
  - We have got very good user feedback on the remote, especially on the tactile things we integrated

- We learned that UI is most probably the hardest part of system design!
Thank You for your attention!