Universal Design and Mobile Devices

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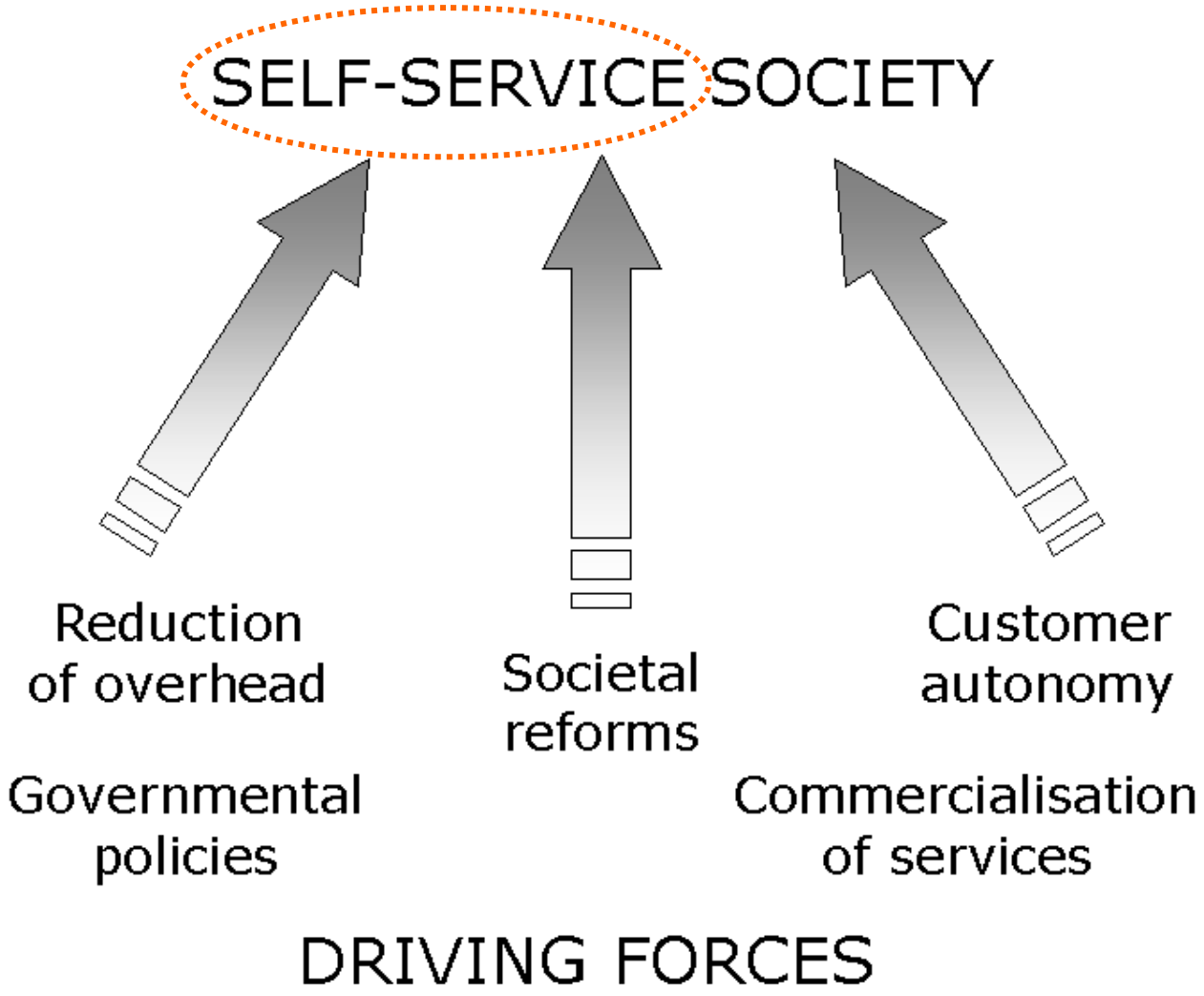
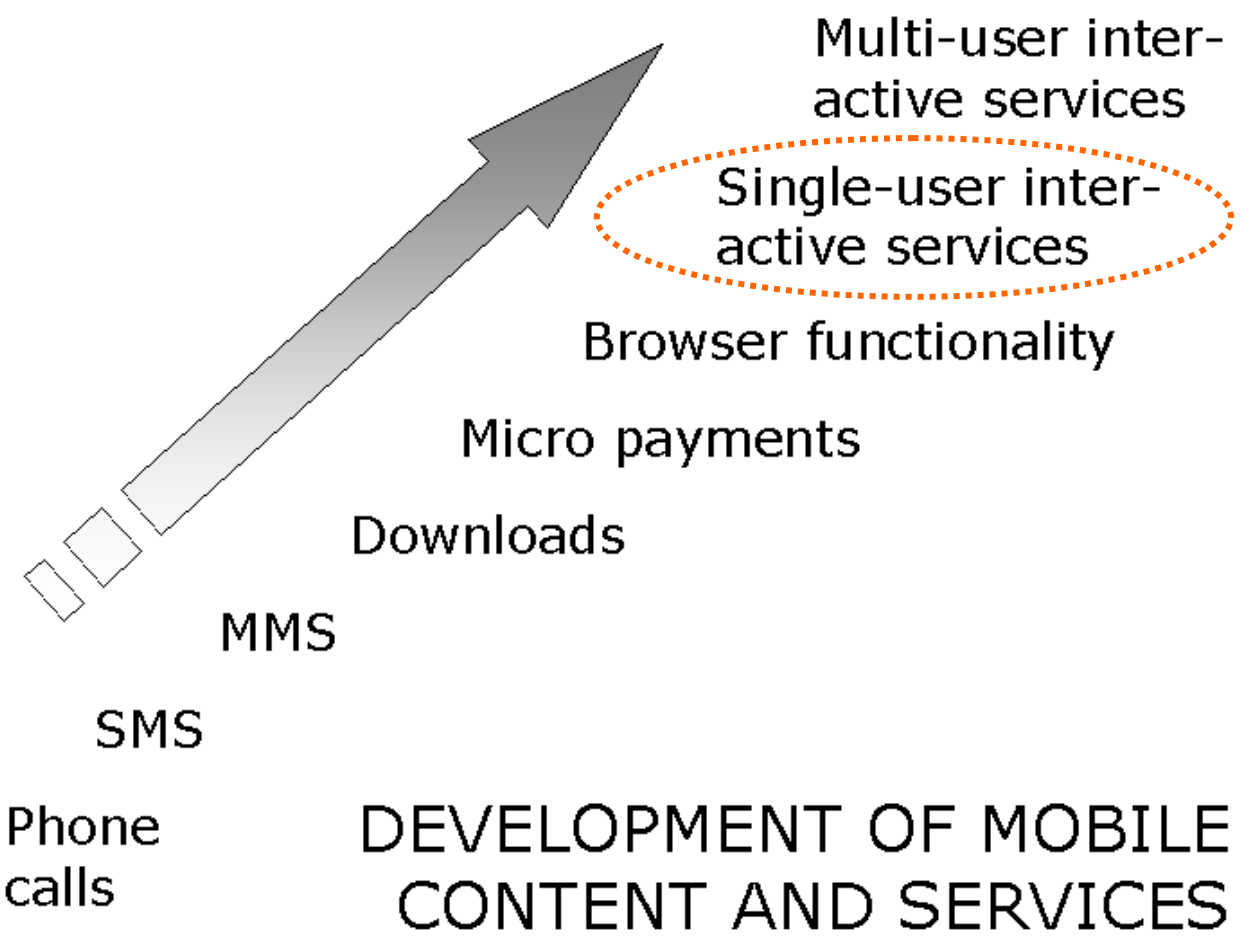
Trend 1


SELF-SERVICE SOCIETY
Reduction of overhead
Societal reforms
Customer autonomy
Governmental policies
Commercialisation of services
DRIVING FORCES

Trend 2

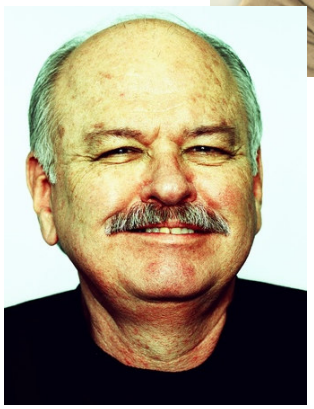

Multi-user inter-
active services
Single-user inter-
active services
Browser functionality
Micro payments
Downloads
MMS
SMS
Phone
calls
DEVELOPMENT OF MOBILE
CONTENT AND SERVICES

Trend 3

CHANGES IN DEMOGRAPGY

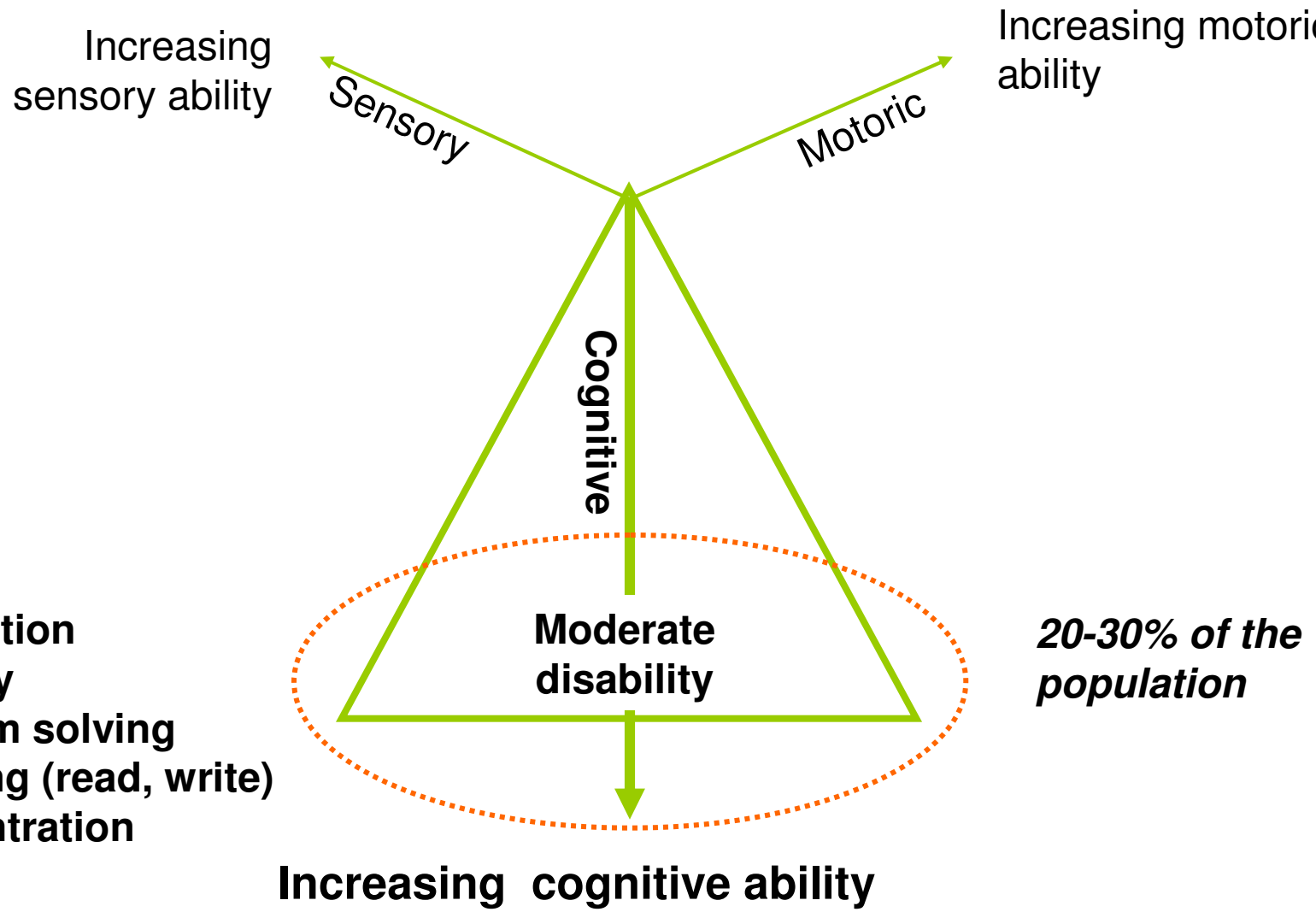
- In developed countries 20% of today's population is 60 years or older
- By 2050 the proportion is projected to be 32% (OECD)

- Age exerts a strong influence on computer use



- Negative association between age and cognitive skills/abilities

Target group (!)



Focus

- Usability and accessibility of services (content) on mobile phones
- Cognitive accessibility problems of particular concern to elderly and people with disabilities
- Point of departure
  - Principles for Universal Design *

    The design of products, environments, and communication to be usable by all people, to the greatest extent possible, without adaptation or specialized design.

    * Center for Universal Design, College of Design, North Carolina State University
  - Several other accessibility guidelines ("all similar")

Design guidelines for mobile phones

Synthesis of existing guidelines, resulting in guidelines relevant to mobile phones and legal case management for cognitively disabled users:

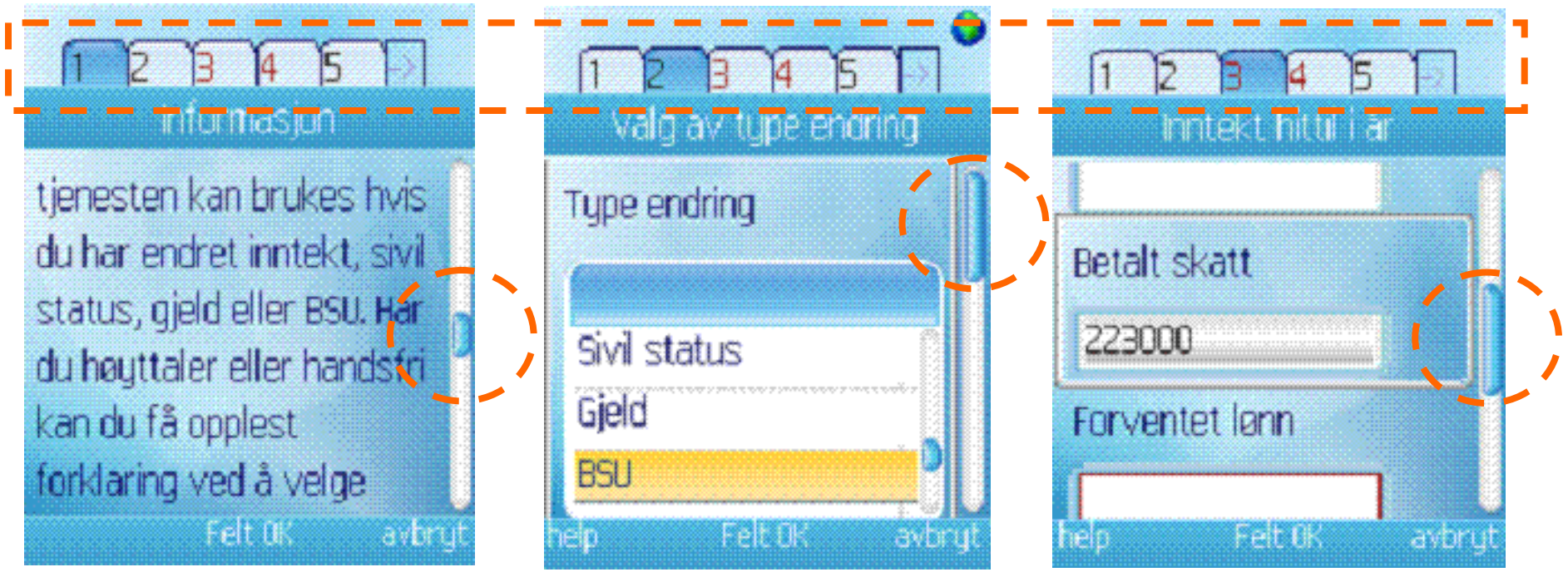
- Navigation and work flow
- Errors
- Search and queries
- Input/output-techniques
- Time
- Text and language
- Voice and sound
- Graphics
- Figures and numbers
- Help and information

www.tellu.no

Case: The Mobile Tax Demonstrator

- Functionality for
  - updating information required for tax calculations
  - ordering a new tax deduction card
- Service meant to be used by **all** citizens, including the elderly and disabled
- Provided by the Norwegian Tax Authorities
- Currently available on the Internet
- Developed by www.tellu.no

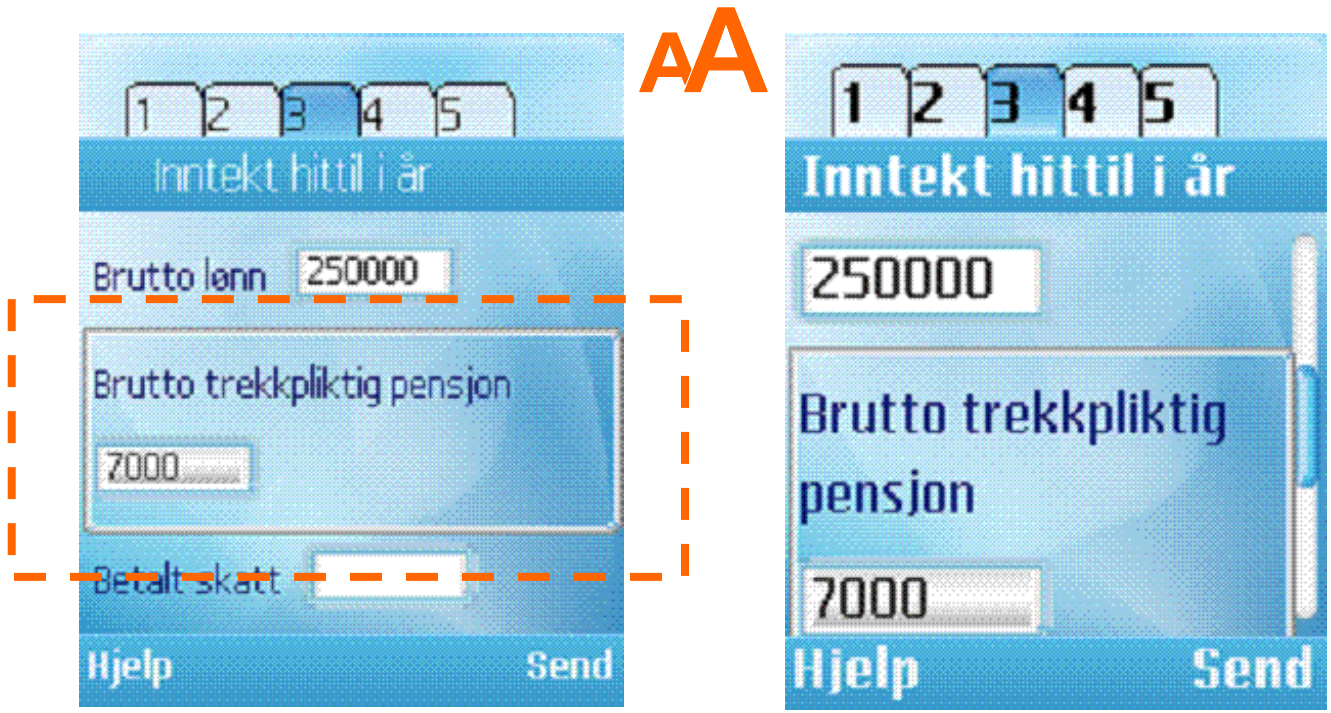
Examples 1



Task cards and marking of the active card, i.e. the active task, in the task flow.

Scroll bar showing the relative position.

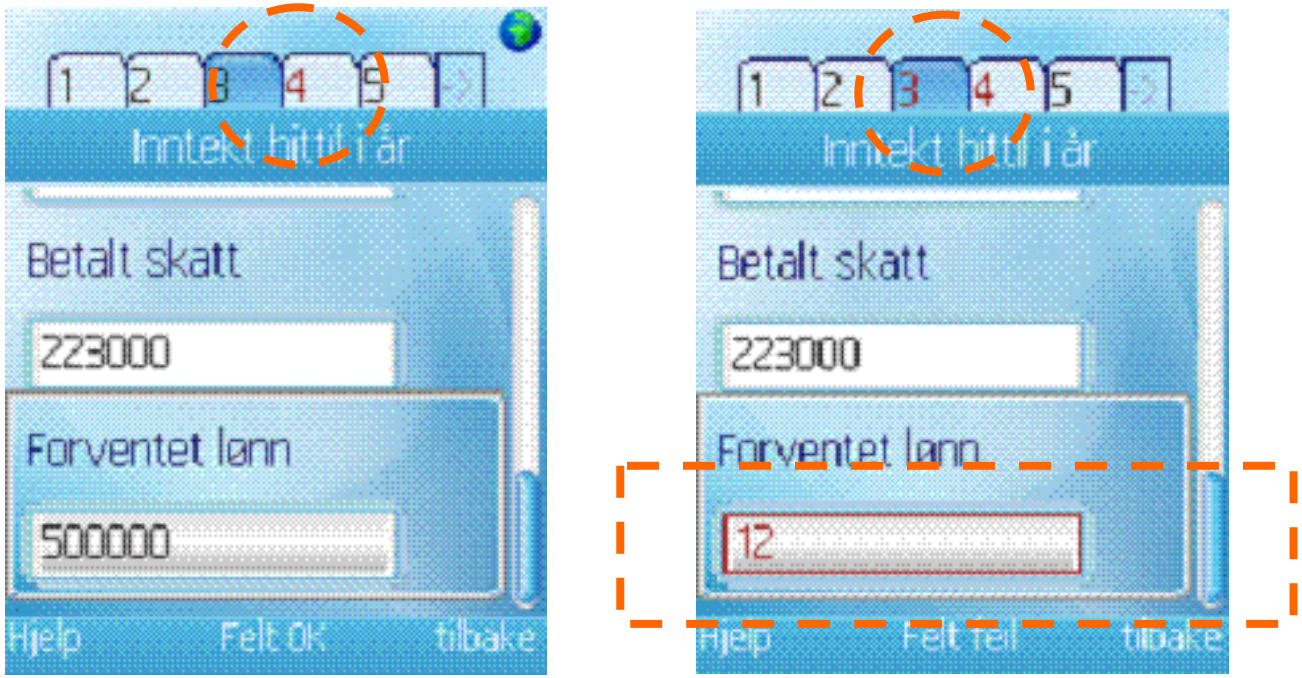
Examples 2



Changes in the size of the font all over the user interface, or only in selected fields.

Working area is accentuated by a frame.

Examples 3



Changes in the colour scheme indicate invalid input (fields containing '12' and, cards number '3' and '4').

Examples 4

Help texts can be read aloud (multimodality).
Menu and help functionality can be connected both to a physical key on the device, and to an easily operable screen button.

Conclusions

- Services connected to **legal case management**
- User interface for **elderly and cognitively disabled users**
- Avoiding complexity and visual clutter
- Governmental electronic services as “proof of the pudding”

- Next steps (2007-8):
  - Small scale field experiment
  - Large scale field experiment (with real users, i.e. citizens)
  - Production use?