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Senior Citizen Use of Computer Mediated Communication and Information in Web Ecologies

Tablet Apps for the Seniors

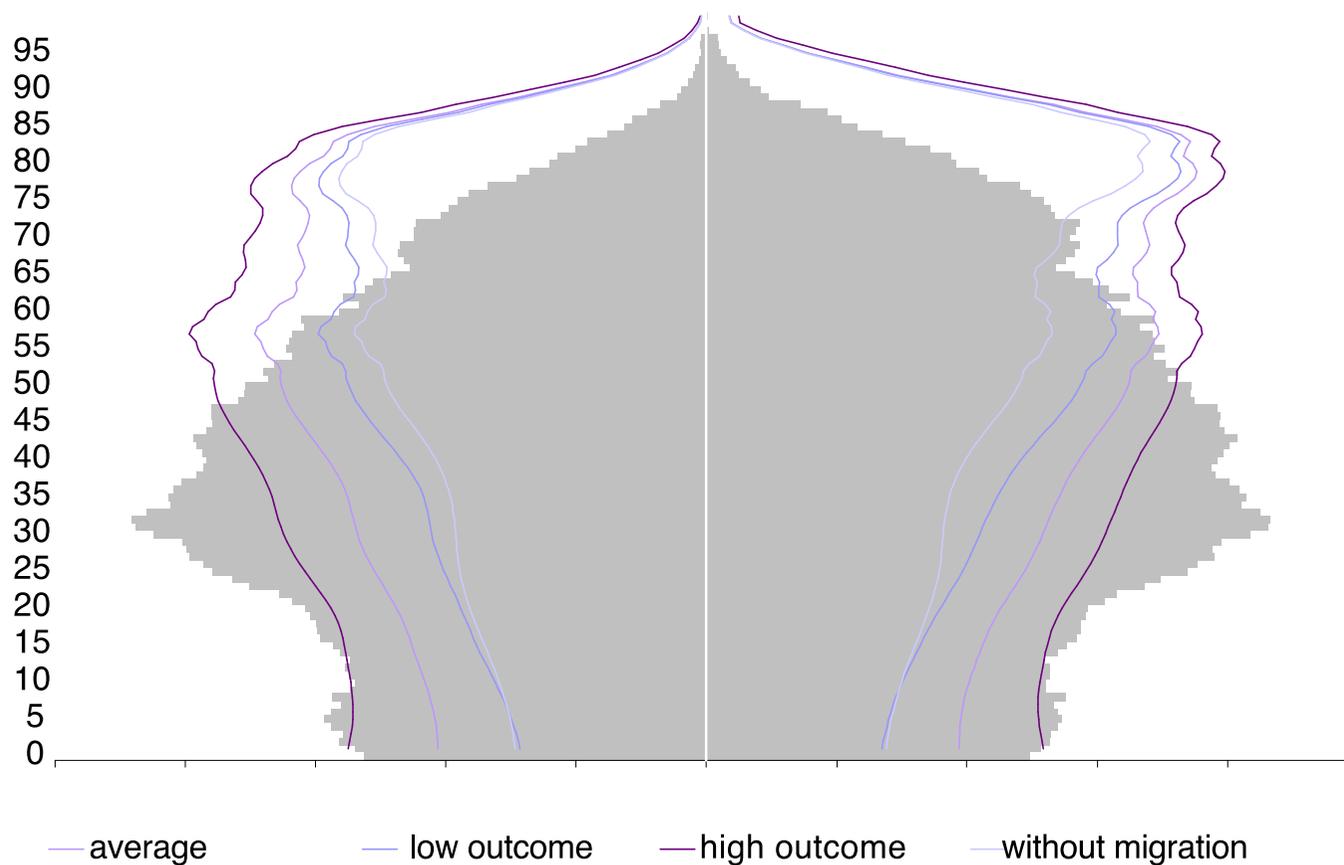
Ivo Fonseca, Ana Veloso, Nuno Dias
Aveiro University, 12th July 2012



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Population pyramid between 2008 and 2050 (INE 2009)





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Research goal

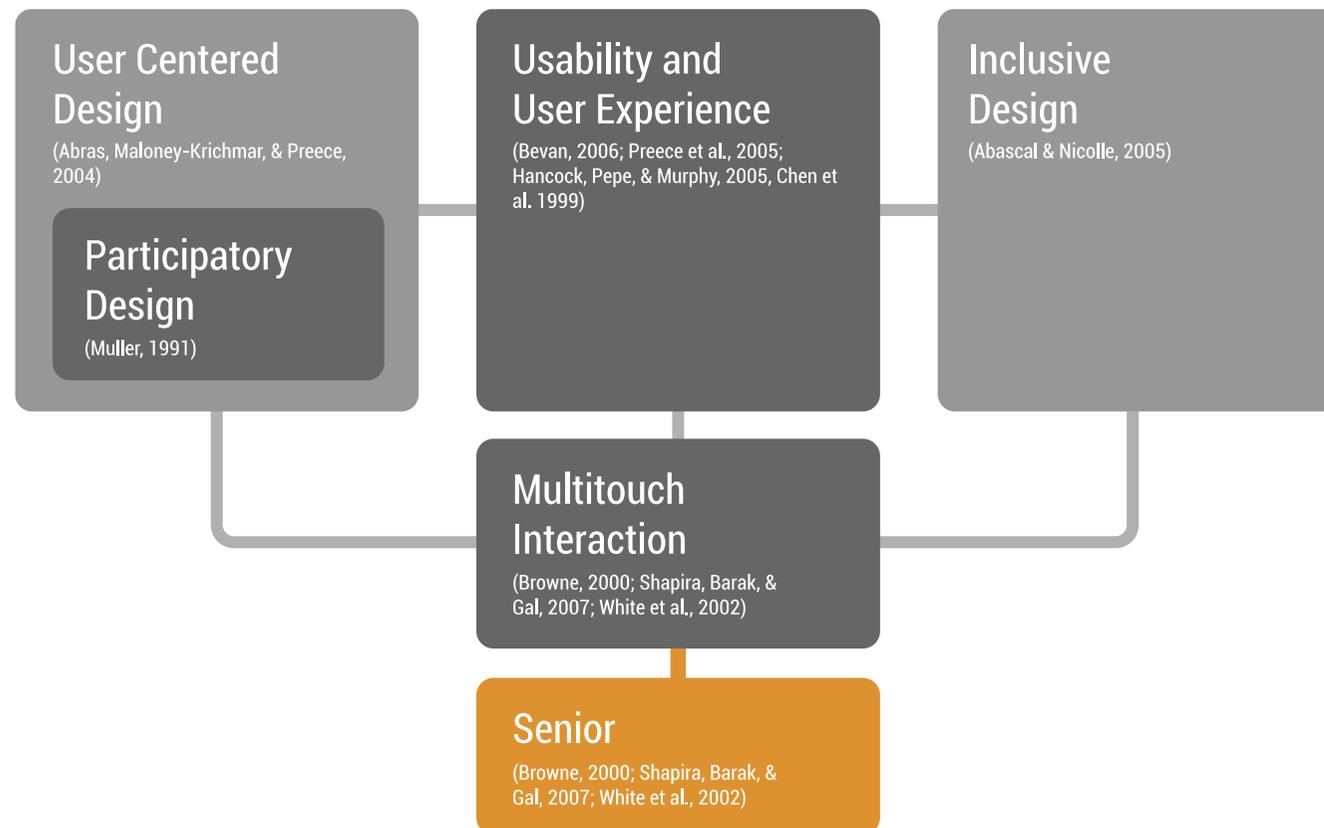
To study the problem of senior citizen's digital exclusion through the design and evaluation of an asynchronous communication service – e-mail – designed with the involvement of senior citizens during the design process.



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Research background





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Methodology

- **Participants:** Private Social Support institutions collaborating in the SEDUCE project.
- **User Centered Design:** audiovisual record; use of low-fidelity mockups, simulation of interaction, iterative design.
- **Participatory design:** all participants have equal opportunity to contribute their ideas.



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Research stages

1. Preparation

- . Contact with project's stakeholders.

2. Observation

- . First contact and exploration of the device.
- . Navigation on the World Wide Web.
- . E-mail use.
- . Games.
- . Synchronous communication (text chat and audio/video conversation).

3. Participatory design

- . PICTIVE.
- . Low-fidelity prototypes.

4. Evaluation

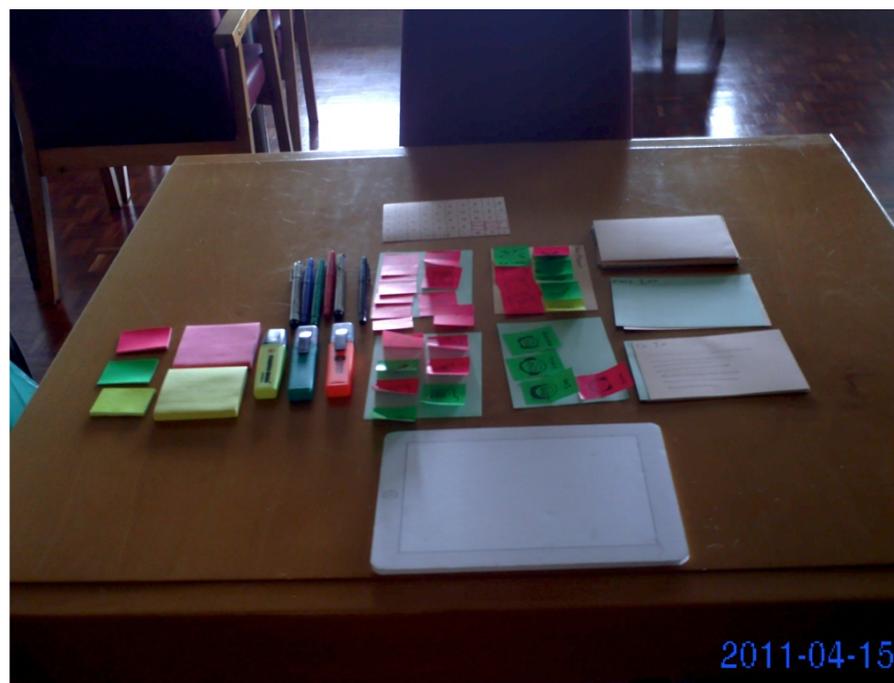
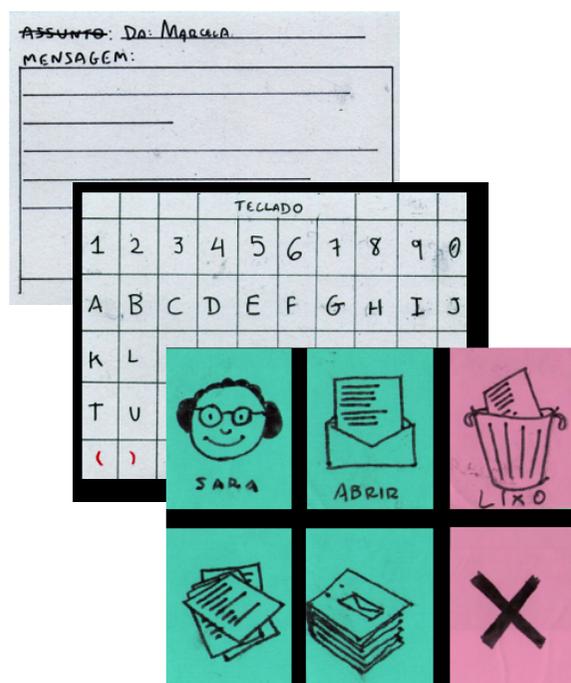
- . Evaluation in all participant institutions.



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PICTIVE (Muller, 1991)





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Designing the interface





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Observation analysis

- Great agility observed on the click and drag gesture; and in a lesser way, with the pinch-in and pinch-out gesture.
- Difficulty in text input.
- Cognitive tasks more demanding than physical ones.
- Tasks that require a complex mental model were more difficult to complete – like surfing the web.



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Analysis of the final prototype





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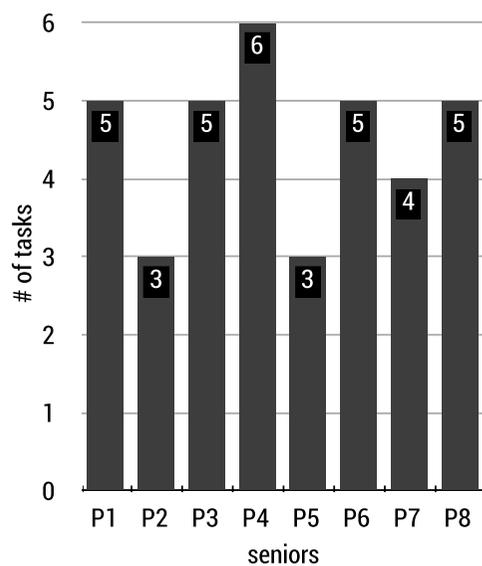
Prototype demonstration

Clique no botão
quando quiser começar

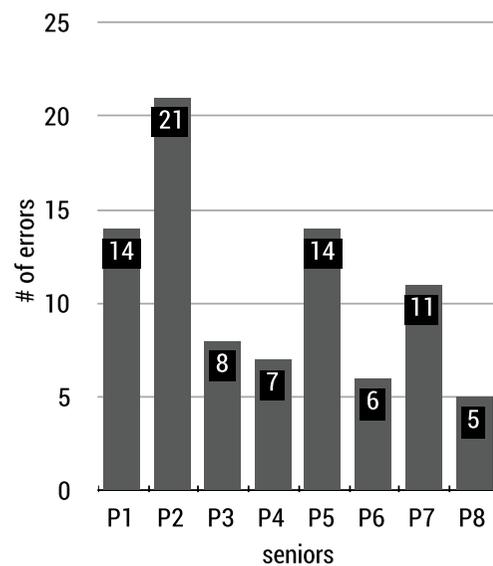




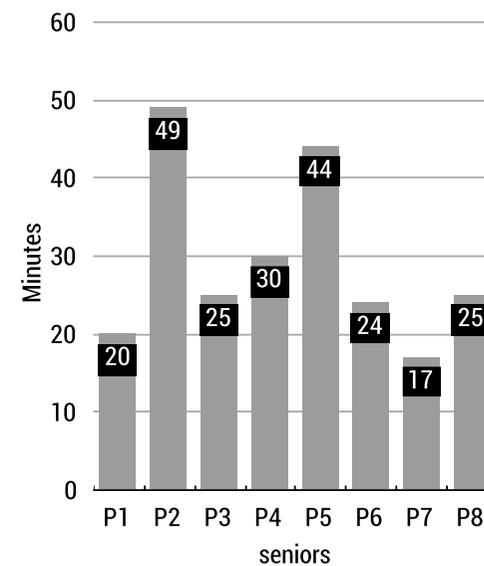
Evaluation analysis – qualitative performance



Successful tasks



Errors



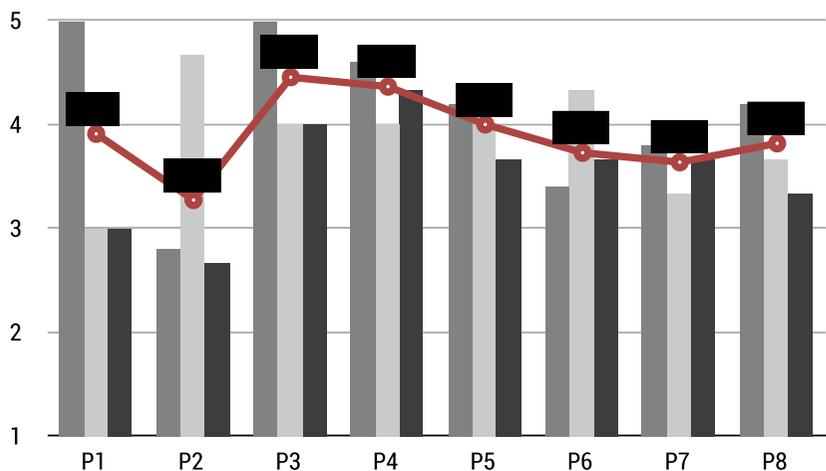
Total time



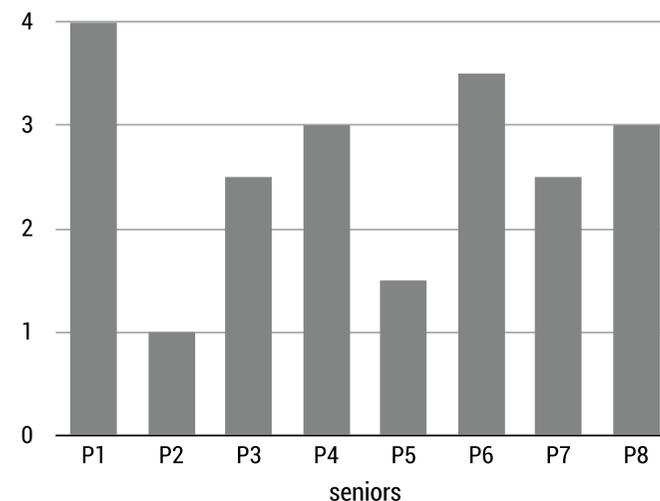
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Evaluation analysis – satisfaction and experience



General reactions to the software
 Screen
 Learning
 Average



Experience



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Conclusions

- The iPad, being a multitouch device, improves the access of senior citizens to the ICTs by reducing physical barriers associated with computer interfaces.
- However, there wasn't a significant advantage in overcoming cognitive barriers.



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Conclusions

- Participatory design seems to be a promising technique to work with senior citizens; Seniors understood well the “make-believe” nature of the exercise.
- The results from the flow survey were coherent with the qualitative results from the prototype’s evaluation, and with the qualitative observation made during the research.



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Conclusions

- The findings indicate that the design of gestural interfaces tailored to senior citizens can provide a good user experience, easing the use of ITCs for this age group.



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Future work

- New methodological approaches in the HCI field, for the integration of seniors in ICT.
- Work with a larger sample of seniors.
- Exchange of the existing prototype into a functional solution of electronic mail.



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Future work

- Semiotic study of the iconography and other visual interface's elements for creating a more appropriate visual library.
- The design of other multitouch service for senior citizen's use will be conceived with data obtained from the implementation of electronic mail.



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Thank you