

Pen-Post: Using Smart-Pens to Support Active Communication for Elders

Jaison Puthenkalam
Master Programme: Media and Human-Centered Computing

TU Wien Informatics
Institute of Visual Computing and Human-Centered Technology
Research Unit of Human-Computer Interaction
Supervisor: Univ. Prof. Geraldine Fitzpatrick, PhD.
Assistance: Univ. Prof. Florian Güldenpfennig, PhD.

Motivation

Despite being a growing demographic, communication needs of elders are often ignored when designing modern ICTs. The goal of this thesis was to explore these needs as well as ways in order to address them, utilizing **Research-through-Design** and **Participatory Design** with elders.

Stage 1: Exploration

RQ1: Communication needs not properly addressed by current ICTs
Methods: Literature Review, Semi-Structured Interviews

Identified Needs

- Desire for deeper, more personal communication that requires time
- Contacting others without disturbing them or seeming 'needy'
- Staying in touch with younger generations that use different ICTs

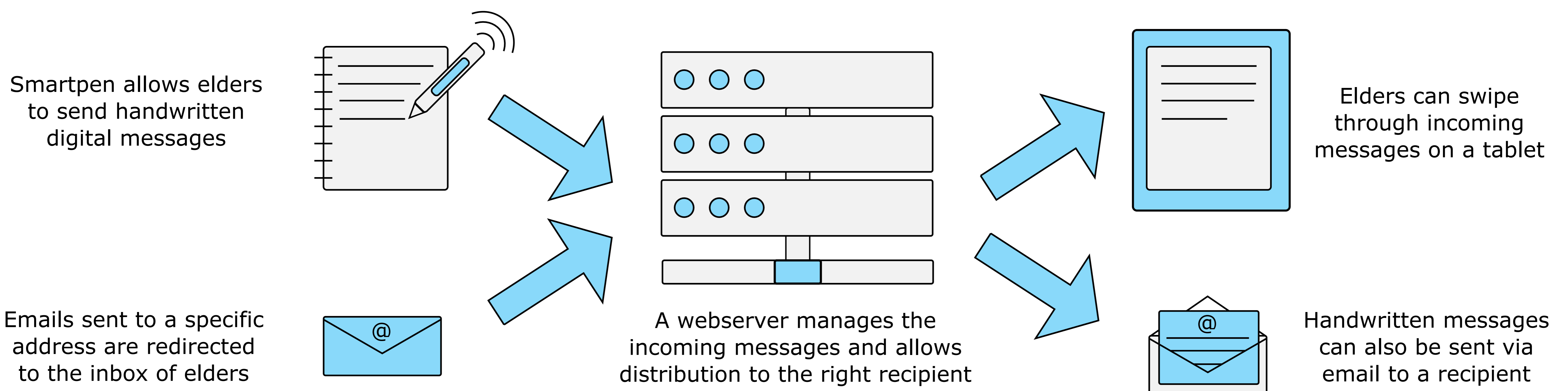
Stage 2 : Refinement

RQ2: Possible ways to address the needs identified in Stage 1
Methods: Participatory Design Workshops, Personas, Cultural Probe

Results

- Elders expressed desire to contribute to the lives of loved ones
- Design concepts about staying in touch and sharing knowledge
- Smartpen-based communication as a potential solution

Stage 3 : Design



Stage 4 : Evaluation

RQ3: UX & Effects of Pen-Post on Communication
Methods: Field studies (#1 peer-to-peer, #2 intergenerational)

Benefits

- Flexibility:** usage ranged from short messages over long, personal letters to sharing of recipes
- Subtlety:** System allowed users to probe others for contact without seeming too 'needy'
- Intimacy:** Handwritten messages provides a feeling of a personal connection and peace of mind
- Adaptability:** Greatest improvement in connectedness between grandparents and grandchildren

Challenges

- Reliability:** Connection issues can lead to long messages not being sent, resulting in a loss of trust
- Legibility:** Unrecognized pen strokes may reduce readability, feeling of 'ownership' over writing
- Usability:** Certain properties of smartpens (e.g. small screen) can cause usability issues for elders