Designing for Older Adults

Overcoming Barriers toward a Supportive, Safe, and Healthy Retirement

Cosmin Munteanu
Institute of Communication, Culture, Information, and Technology
University of Toronto Mississauga
Technologies for Ageing Gracefully lab, University of Toronto

With contributions from:
Benett Axtell, Hiba Rafih, Amna Liaqat, Yomna Aly

Cosmin Munteanu

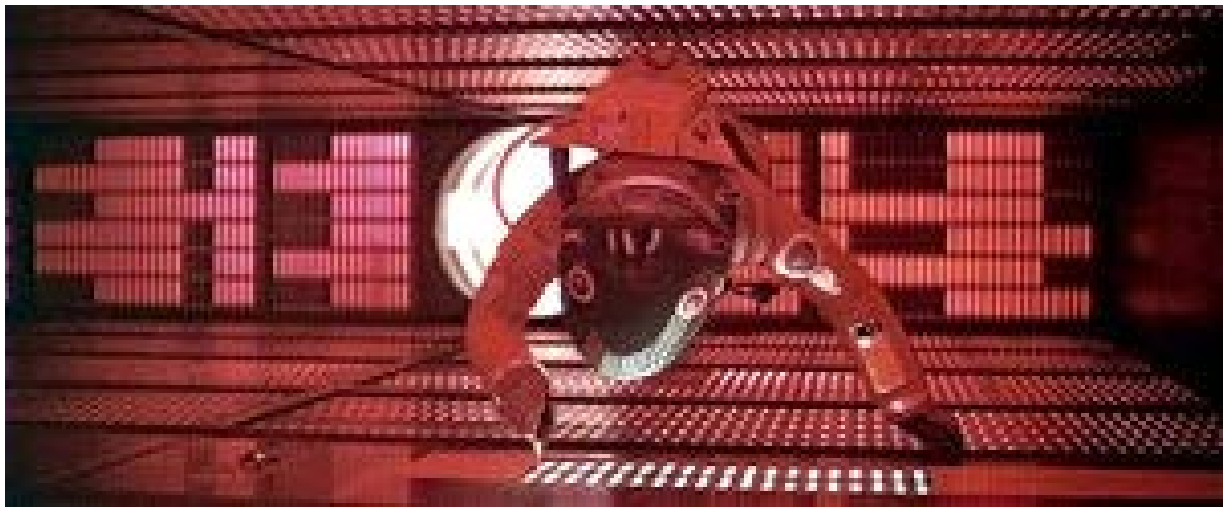
- Assistant Professor at the Institute for Communication, Culture, Information, and Technology (University of Toronto at Mississauga)
- Co-Director of the Technologies for Ageing Gracefully lab, Computer Science Department, University of Toronto
- Until 2014: Research Officer at the National Research Council of Canada
- Research: Human-Computer Interaction, Natural Language Processing, Mobile Computing, Gerontechnology, Assistive Technologies, Usable Safety & Privacy, Digital Marginalization, Ethics.

Our (design) obsession

- Look, Ma! No hands!
  - Aka “The holy grail of HCI”
  - Interacting without explicit interfaces

Natural interactions

Touching, gesturing, speaking, being spoken back

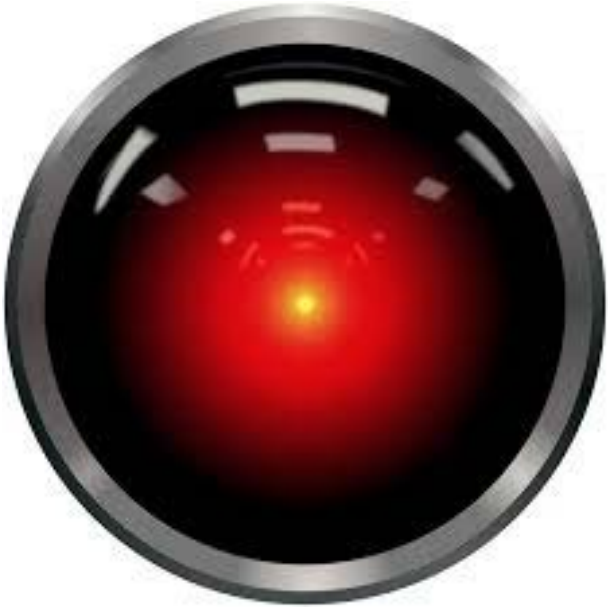


Making its way into the consumer space

- Although not without opposition ...

Making its way into the consumer space

- Especially when it is “intelligent”



Marginalizing some users

What's at stake?

The tipping point

- As of July 2015, and for the first time in Canada, seniors aged 65 and older outnumbered children aged 14 and younger by 0.1%

- By 2024, those aged 65 and older will outnumber children 14 and younger by 3.8%.

- And they are increasinlgy “connected”
  - 68% of seniors use the Internet regularly (few times / month)
  - Almost 50% use it daily

(Stats nada 2017)

• These should be good news!

- More years for enjoyment with family and friends, conveying wisdom to workplace, reaping rewards

- Except ...

Social Isolation & Digital Marginalization

Emerging issue for older adults (1)

- **More than 1/3** of community dwelling older adults are socially isolated (2)

Significant effects:

- Social disconnection from families and communities, lower levels of civic and social engagement (1)
- Health and socio-economic burden for older adults, families, and social institutions.

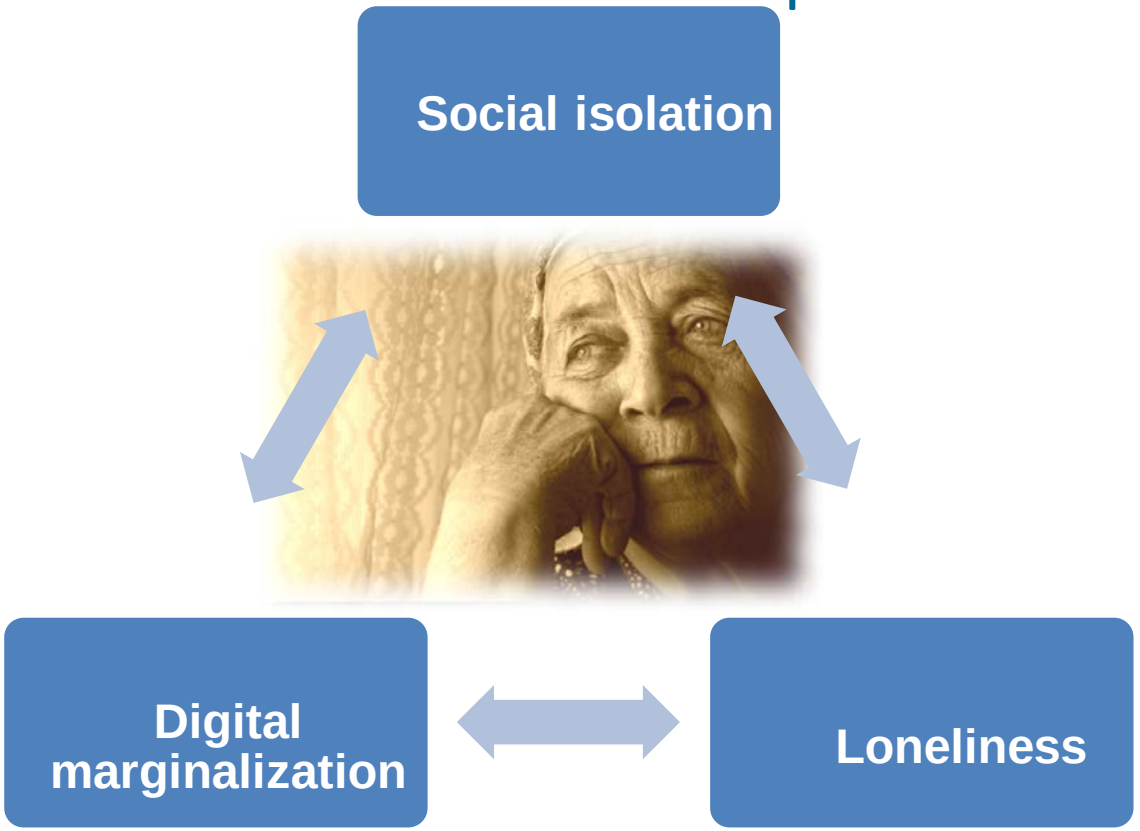
(1) CMH, 20

(2) (Nicholson, 2012)

• What's at stake?

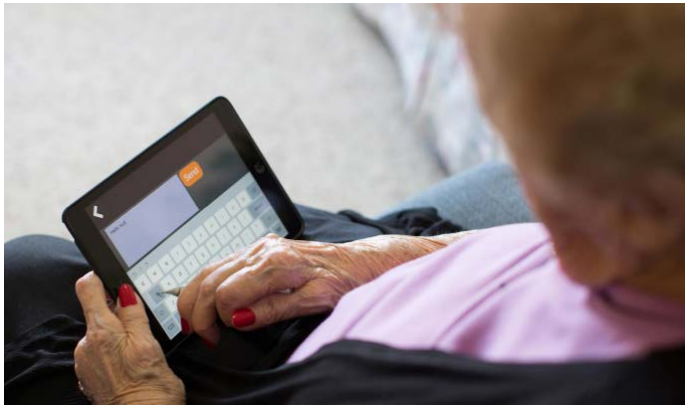
Perfect storm

- Facing a catch-22 situation of interdependent factors



What's at stake?

- Far-reaching consequences
  - Including for Fintech
- Increased vulnerability when engaging in online activities
  - Financial fraud



(c) University of Toronto and TAGlab

- Non-adoption of many online services
  - Missing out on many opportunities (e.g. e-commerce)
  - Distrust of online service providers (banks, financial, etc.)

The problem ...

- Main barriers to adoption: **Mental Models**
  - Similar to models in behavioural economics
    - Mostly as applied to what users know about a system's workings
  - Fundamental to several tech adoption factors:
    - Usability, perceived usefulness, and lack of (or reduced) digital literacy

(c) HCKYGRLPHOTO
http://hckygrl.500px.com/
Used with permission

The problem ...

- We exposed the issue of mental models in three areas of relevance to fintech
  - Online financial safety
  - Access to essential information online
  - Staying connected socially through sharing of digital artefacts

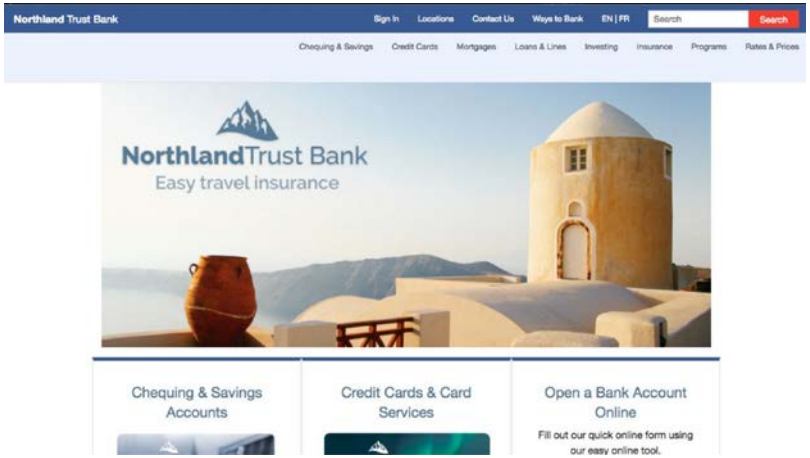


Image (c): TAGlab

The problem ...

- Mental model barriers to engaging with online critical services:
  - Resistance to the use of online banking and similar applications due to low trust
  - Preference for interacting with “real” people
  - Online being perceived as less secure (mostly financial, but also in terms of information, e.g. cloud storage)
  - Lack of motivation for switching away from “in-person” transactions
  - Expectation for full privacy and information-seeking autonomy
  - Reliance on prior-established trust (both for financial and health transactions)

• The solution ...

- Contextual inquiry to expose mental models
  - Ethnographic-like observational method
  - Often follows a master-apprentice approach (researcher is the apprentice)

  - Can be used in fintech
    - Missing features in financial software (Kazemian, 2018)
    - Trust in and perceived benefits of online financial platforms (Rafih, in progr.)
    - Information seeking behaviour for essential services and trustworthiness of online sources, e.g. health (Aly, in progr.)
    - Perceived reliability of online services, e.g. customer service, online storage (Axtell, 2017, Rafih, in progr.)

• The solution ...

- Participatory design to further refine the models and build designs

• The solution ...

- A UX design approach to fintech adoption by older adults
  - Contextual Inquiry
    - Grounded in the Technology Acceptance Model
    - Focused on exposing Mental Models of tech (non) use
  - Participatory Design
    - Empower and engage older adults in designing tech
    - Leads to increase ownership of the design process and to better adoption

• The UX solution …

- Simple can be useful if it works

- “If the user can’t use, it doesn’t work!” (Susan Dray)

(c) University of Toronto and TAGlab

TAG lab

ICCIT COMMUNICATIONS & DIGITAL MEDIA
DESIGN.
RESEARCH.
MANAGEMENT.

Thank you!

http://taglab.ca