The case of Golden Jubilants: using a Prototype to support Healthcare Technology Research

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Summary of Presentation

• Developing recommendations
  – Smartphone development for older adults
• Future use of prototypes
• Problem: Older adults are underserved by technological solutions

Research Question

What are the recommendations that need to be considered by practitioners to make applications usable and accessible for older adults?
ReDEAP: DEveloping smartphone Applications for an aging Population

Goal 1: Usability

Goal 2: Accessibility
ReDEAP: 11 Sub-Goals and 44 recommendations

1.6. Useful
Incorporate a feature for track of and maintain their health. It can be presented in pie charts and graphs for tech-savvy OAs.

1.7. Valuable
Incorporate user interaction with the application, e.g., a volunteer hub.

Incorporate a feature that increases awareness of elderly adults, e.g., an information hub.
Recommendations described using Patterns

<table>
<thead>
<tr>
<th>Problem</th>
<th>If there is a need to have multiple interfaces for different functionalities, then the application might appear different. Older adults consider that they have to re-learn the new features, leading to reduced usage [1-2].</th>
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<tbody>
<tr>
<td>Rationale</td>
<td>If consistent navigation and menus are used throughout the application, it will aid older adults with cognitive decline [1-2].</td>
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<tr>
<td>Solution</td>
<td>1. Use consistent and explicit step-by-step navigation and user interface elements [1, 2].</td>
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<tr>
<td>Type</td>
<td>Usability</td>
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<td>Sub-type</td>
<td>Findable</td>
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<tr>
<td>Related Patterns</td>
<td>Disable inactive user interface objects; Avoid scrolling in the application or only allow vertical scrolling in for such scenarios; Incorporate simple and quick signup process in the application.</td>
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Research Methodology
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Prototype Development
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Phase 2 - Prototype Development

- Data Collection Methods
  - Interviews
  - Surveys
  - Preliminary ReDEAP

- Data Analysis Strategy
  - Qualitative Data Analysis
  - Quantitative Data Analysis

- Data Presentation Tools
  - Design Thinking
    - No Brainers
    - Big Bets
    - Utilities
    - Not Wise Use of Time
  - Modeling
  - Prioritised ReDEAP

- Develop and Test Prototype
  - Develop Initial Prototype
    - Test
    - Evaluation
  - Develop Updated Prototype
    - Modify
  - Validated ReDEAP

Heterogeneous Older Adults

Use

Evaluate using Inter-rater Reliability

merge
Learnings: using prototypes

• Research should include public and patient involvement
• Use available tools and techniques
• Develop a needed and tangible prototype
• Involve other stakeholders
Public and patient involvement (PPI)

- Increasing use within healthcare
- PPI: “research being carried out “with” or “by” members of the public rather than “to,” “about” or “for” them”
- Include non-researcher stakeholders from research design stage
  - Design the research project
  - Questionnaires
  - Feedback on research stages
- Research outcome improves
- How can we integrate PPI in our future research?
Available tools and techniques

- Interdisciplinary research requires variety of tools and techniques
- System Usability Scale (SUS)
  - Questionnaire easy to use for OAs
- Evaluation with Cronbach’s Alpha
- Use of Design Patterns
Prototype

• ReDEAP was about developing recommendations
• Prototyping invaluable method
• Consider value of prototype to user group
• Golden Jubilants: mediator to keep OAs connected with communities through volunteering
  • Aim: reduce social isolation
  • Investigated OA interests
  • Relevant prototype ensured engagement
Premise for development of Golden Jubilants

Social Networking Services help to overcome social isolation

but

Uptake by older adults is low

• Due to privacy issues, lack of knowledge, difficulty in operation and lack of purpose
**Why a volunteering system?**

1. Socially Isolated older adults
2. Effects
3. Value of community
4. Can we provide solutions?
HELLO!
"We don't grow older, we grow riper!"

Please touch to Start
"Finding Volunteer Opportunities, Play your favorite music and more!"

I am your constant companion!
"I can help you find volunteer opportunities"

What is your name please?
my name is jason kamy

Hey jason kamy! Let me know if you need any help or get stuck looking for opportunities.
can you please tell me what do you know about me?

No worries! We are fully compliant with GDPR laws. Can you just tell us your email or mobile number?
hamy@gmail.com

Following are the details saved in our system about you:
1. Name: Sarah beecham
2. Email: hamy@gmail.com
3. Phone Number: 1-216-878-0148

Please Click and Write here to start!
Other stakeholders

• IBM: industry partner
• Input from those with technical experience
• External group input broadened our thinking
Conclusion

• Collaboration with an interested user group
• Strong and useful outcomes
• Current project: identifying recommendations for health information systems for clients with mild intellectual and developmental disability
• Prototyping provides level of objectivity
• Excellent outcomes for healthcare research
Acknowledgements

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Thank you

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