User-Computer Interface Design of a Family Support Web-based Portal: The Use of Scenarios and Low Fidelity Prototypes

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Purpose

- Describe the design process of the user interface (UI) of a web-based portal [1]
- Principal Portal users:
  - family caregivers of a family member who have dementia
  - middle-aged, novice internet users
  - speak English as a second language

Type of Portal Users

Principal users	• Daughters or sons of a person who has dementia • 40 to 50 y.o. • Working full time and very busy caregiving.
Collaborators	• Active caregivers • Collaborate with the Principal User to give care and to use the portal
Observers	• Family members who review the information posted on the portal • But do not actively participate in the communication
Practitioners	• Regulated professionals • Use the portal to communicate with and offer interventions to the family caregivers

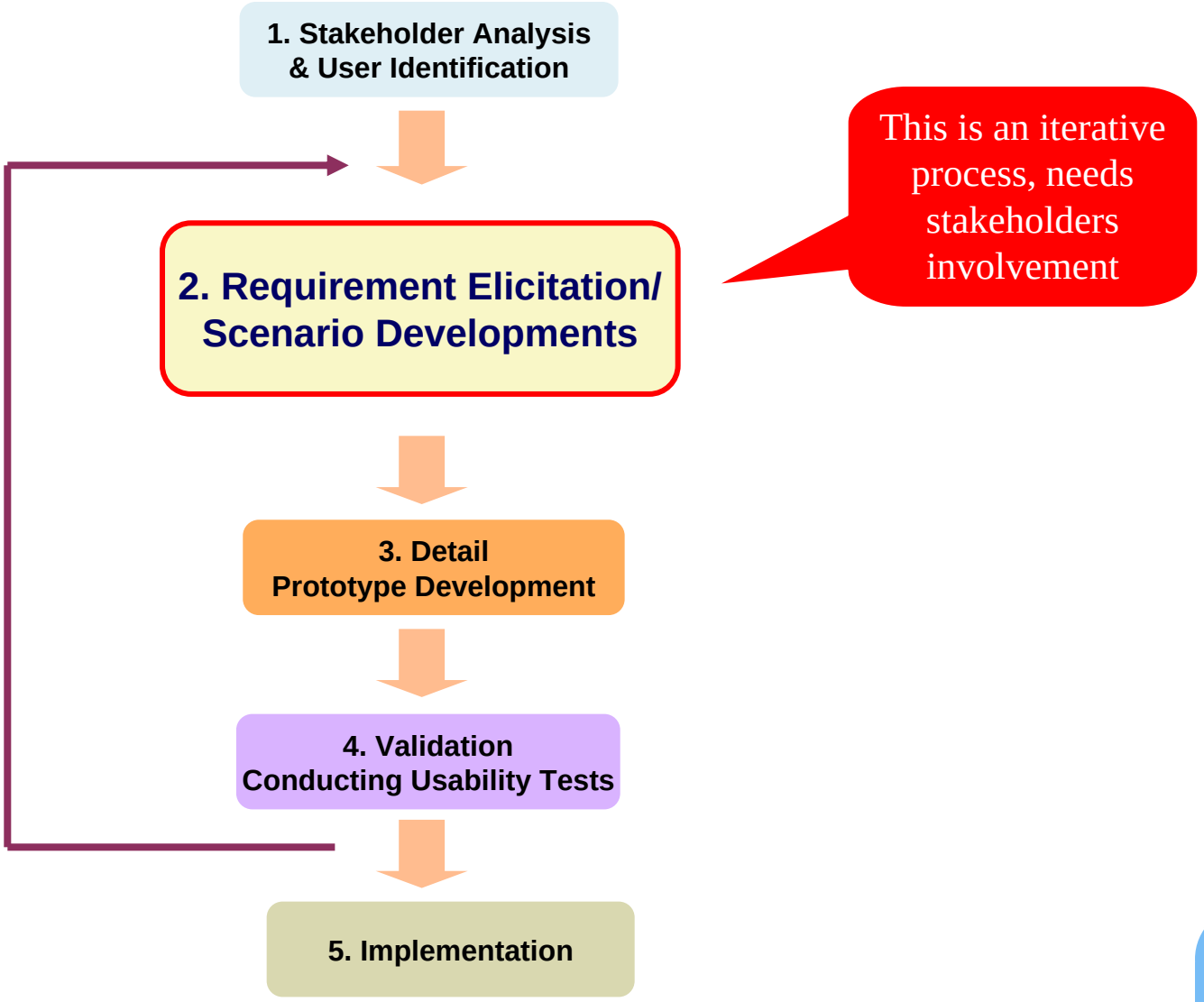
Portal Functions

- To support users to
  - Communicate with and support from health professionals online
  - Involve multiple family members in the communication process
  - Receive alerts to trigger usage of service
  - Receive information needed to support their caregiver role

Portal Features

1. Personalized Email Support	Allows the Principal Users to communicate with their Online Practitioner on a one-to-one basis
2. Family Message Board	Provides an online forum for principal users and family members to discuss caregiving issues
3. Short Stories	Provides narratives for family members to learn more about family caregiving
4. Telling More	Supports Principle Users to compose an email related to a specific topic

From stakeholders and functions to implementation – an Overview



The Extended Requirement Elicitation Process

- 2.1 Developed 46 scenarios
  - Elaborated scenarios of the 4 portal features
- 2.2 Created low fidelity prototype (LFP)
  - The scenarios were built using narratives and Low Fidelity Prototype in MS Word documents with a template
- 2.3 Incorporated expert review

Intensive, Iterative Requirement Elicitation

2. Requirement Elicitation/ Scenario Developments

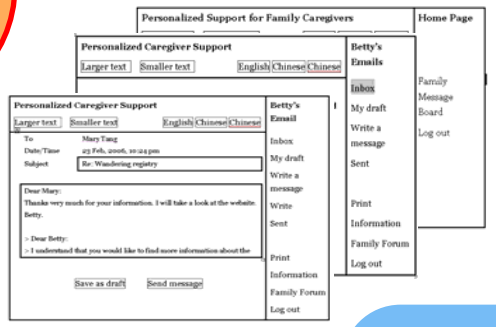
46 scenarios of

1. Personalized Email
2. Family Forum
3. Short Stories
4. Telling More

2.1 Scenario Development

2.2 Low-fidelity prototyping

2.3 Expert Review



Heuristic Evaluation & Iterative Refinements

- Heuristic Evaluation
  - The LFP scenarios were used to conduct expert reviews
- Iterative refinements:
  - Ensured that each function supported different stakeholders' needs
  - Checked quality attributes: usability, accessibility, performance, and security

5 Advantages of Scenario-based Design

1. The LFP allowed team members who were clinicians and unfamiliar with advanced prototyping applications to actively take part in the process
2. The scenarios facilitated the communication of the interdisciplinary multilingual team members
3. The LFP allowed us to express each interaction explicitly at low cost and to quickly and easily apply the changes for expert review
4. The iterative scenario development in Step 2 sped up the detail fidelity prototyping in Step 3
5. The detailed prototyping ensured the design would not use assumptions that may work in general practice but not the stakeholders

Conclusion

- This paper documented how to use scenarios and LFP to conduct an inclusive, cost-effective UI design
- Scenario-based design is a well-established method in software design [2]
- We have experienced several advantages after applying this technique to design the UI of a family caregiver portal
- The technique can contribute to a sustainable ehealth practice in the long run

Acknowledgements
References
& Contact

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References

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[2] Preece J, Rogers Y, Sharp H. Interaction Design: Beyond Human-Computer Interaction. 2002. NY: John Wiley & Son.

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