



**MONASH**  
University

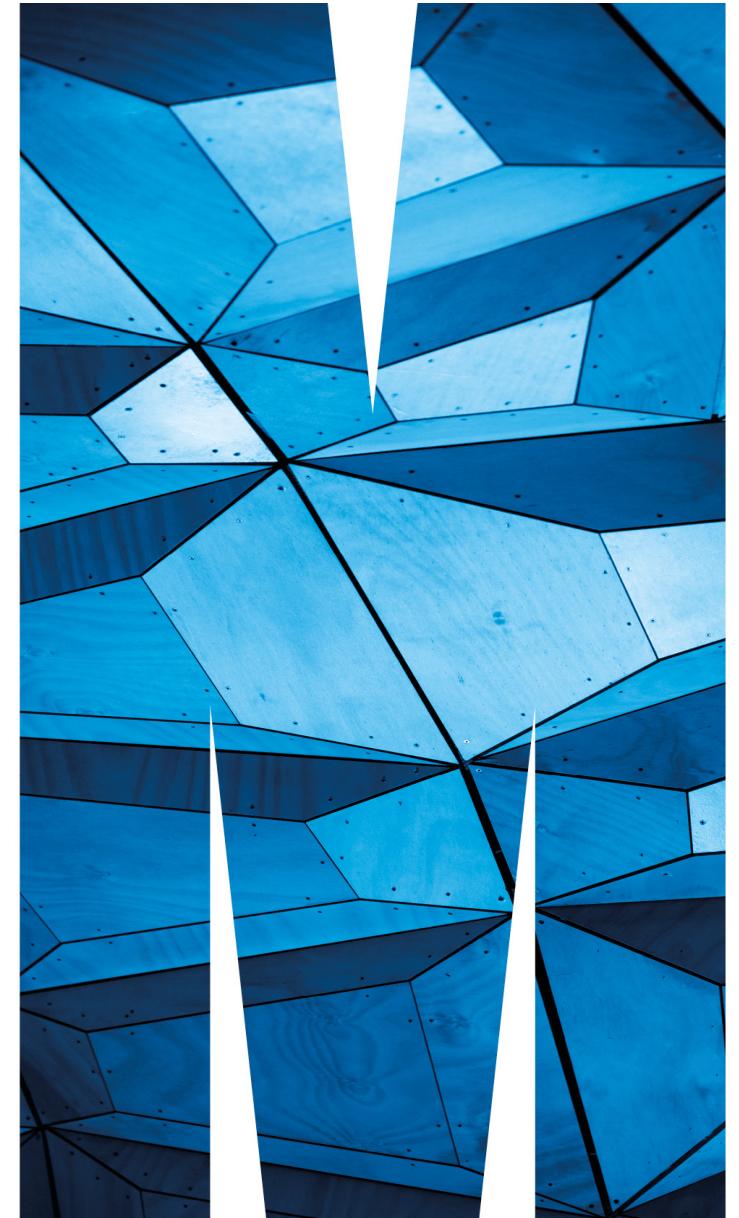
MONASH  
INFORMATION  
TECHNOLOGY

**Vision:**  
**Improved development of mobile eHealth  
applications**

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## Outline

- The problem
- The key issues
- The vision
- Work to date
- Next steps...

# Examples

Diet, pharmacology, activity adherence

The screenshot shows a mobile application interface. At the top, it displays 'Telstra' signal strength, the time '2:41 pm', battery level '56%', and a calendar for January. Below this, a summary table shows 'Goal' (1,700), 'Food' (478), 'Exercise' (108), and 'Remaining' (1,114). The main area is divided into sections for 'Breakfast' (95) and 'Lunch' (383). Under Breakfast, there's a entry for 'Soy Flat White' (95). Under Lunch, entries include 'Soy Flat White' (95), 'Museli' (85), and 'Greek Yoghurt' (203). At the bottom, there are icons for 'Home Food Diary' (with a plus sign), 'Progress' (with a red circle containing '1'), and 'More'.

The screenshot shows a mobile application interface. At the top, it displays 'Telstra' signal strength, the time '2:40 pm', battery level '58%', and a calendar for January. Below this, a summary table shows 'Walking + Running Distance' (0.48 km), 'Steps' (758 steps), and 'Flights Climbed' (3 floors). The main area is titled 'Heart Rate Details' and shows a graph of heart rate over time (4 am to 8 pm) with a peak around 12:30 pm. It also displays resting heart rate (54 bpm) and high heart rate (160 bpm). At the bottom, there are tabs for 'Today', 'Health Data', 'Sources', and 'Medical ID'.



Wearables, Heart rate Monitoring etc

Augmented, virtual reality For training etc



Clinical apps

The screenshot shows a mobile application interface for exercise tracking. At the top, it displays 'Telstra' signal strength, the time '2:39 pm', battery level '60%', and a map. Below this, a summary table shows 'DURATION' (0:00) and 'DISTANCE (KM)' (0.00). At the bottom, there is a large green button labeled 'START WORKOUT'. The map shows a route labeled 'LOAD ROUTE' through 'Town Park West' and 'Eltham Cemetery'.

Exercise tracking

It's not a new approach / problem...

- An aside... we've been trying to build these for some time
- E.g. Our OOIS 2001 patient management WAP/WML example:

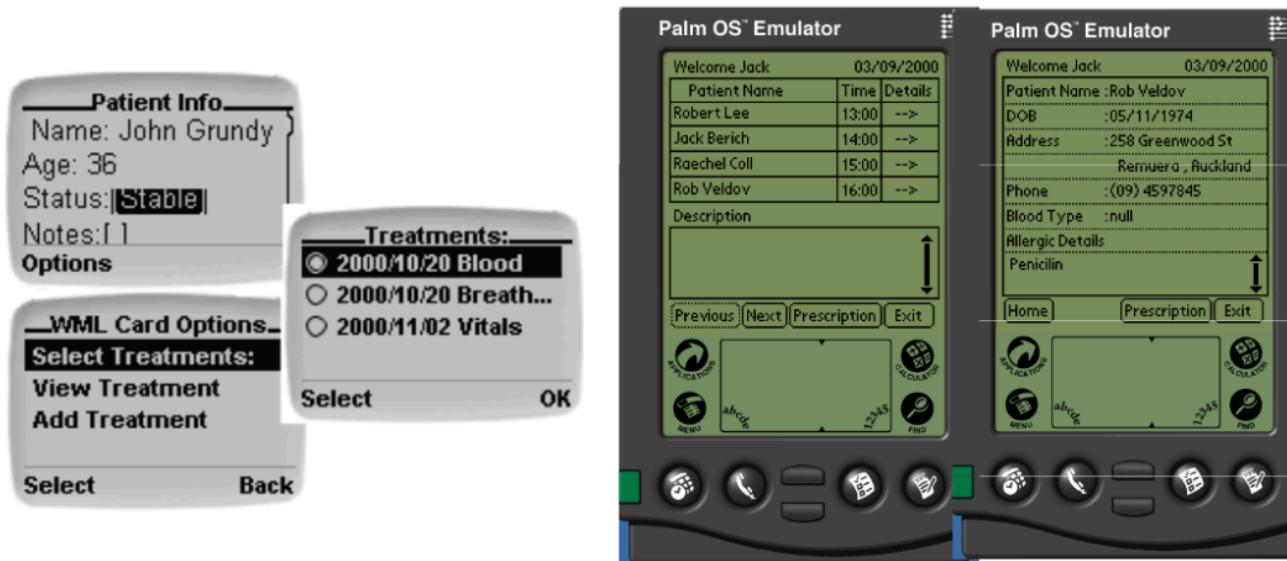


Figure 7. Examples of (a) staff WML and (b) staff PDA applet user interfaces.

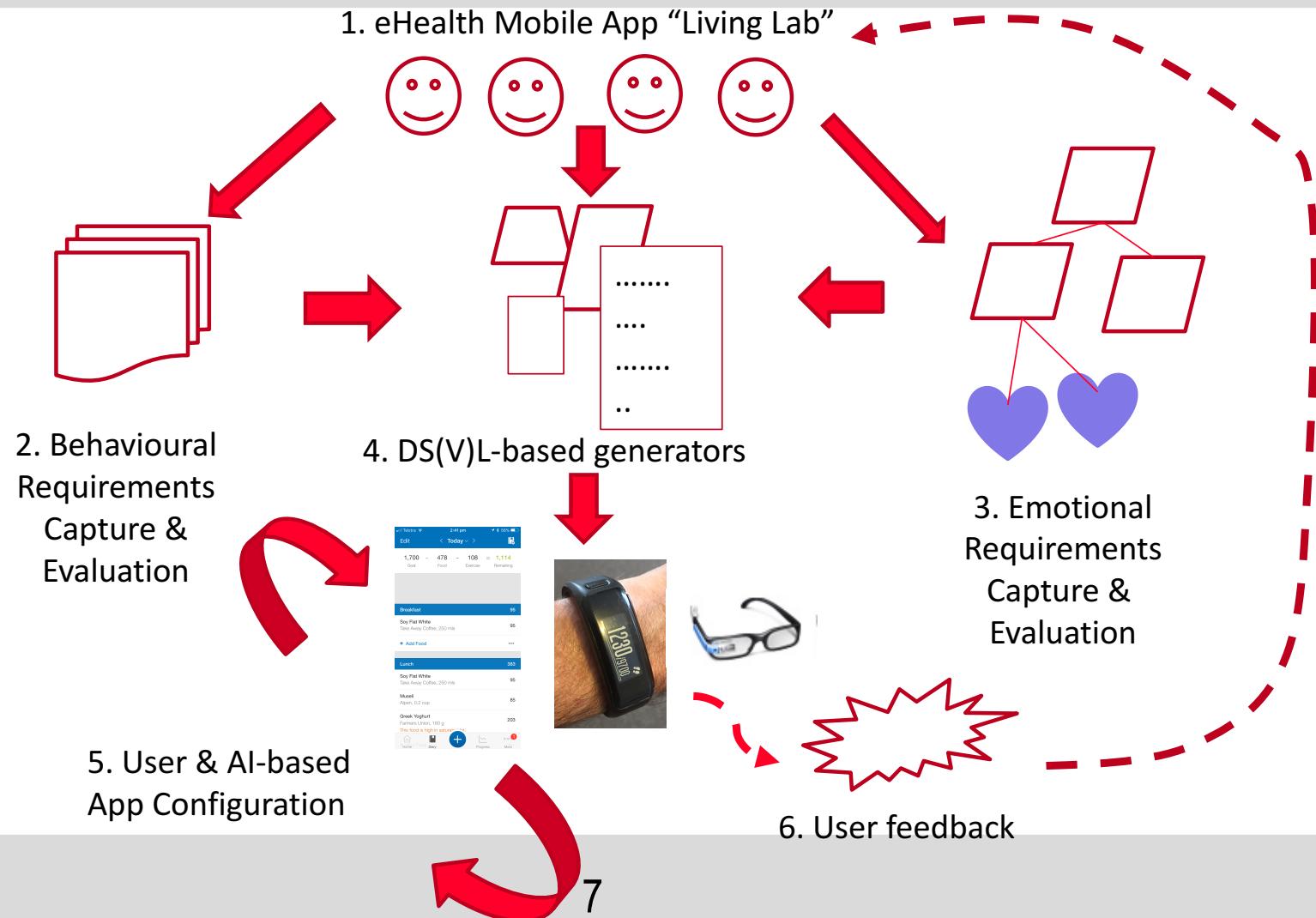
## Developing eHealth applications is HARD!!!

- Range of users
- Range of technologies
- Changing technologies
- Supporting app evolution
- Continuous development, deployment in eHealth domain
- Avoid solution looking for a problem scenarios...

## Some key Issues

- What Development process to use?
- What are appropriate requirements Engineering approaches to use?
- How do we design and build these Mobile Apps?
- How support (re)configuration – different users, health challenges, deployments etc
- How get timely, effective end user feedback?
- How achieve sustainability of health behaviour change (via use of the app)?

# The Vision



## Progress to date

- Living lab – setting up inside aged care provider partner
- Behavioural requirements, change impact – extending modelling approaches to incorporate
- Emotional requirements engineering, evaluation – method and tools
- Mobile app generators – extending earlier work
- Configuration – extending earlier work, exploring AI-based adaptation
- Continuous feedback – integrating into app including sustainability of solution, interface and task usage, feedback on app/solution, integration into living lab process...

## What next...

- Living lab set-up, evaluation for mobile apps
- Behaviour change + Emotion-based development
- App generation with focus on usability of solution as well as functionality
- Defect reporting – continuous feedback
- Continuous development including AI-based adaptation, living lab context

Questions???