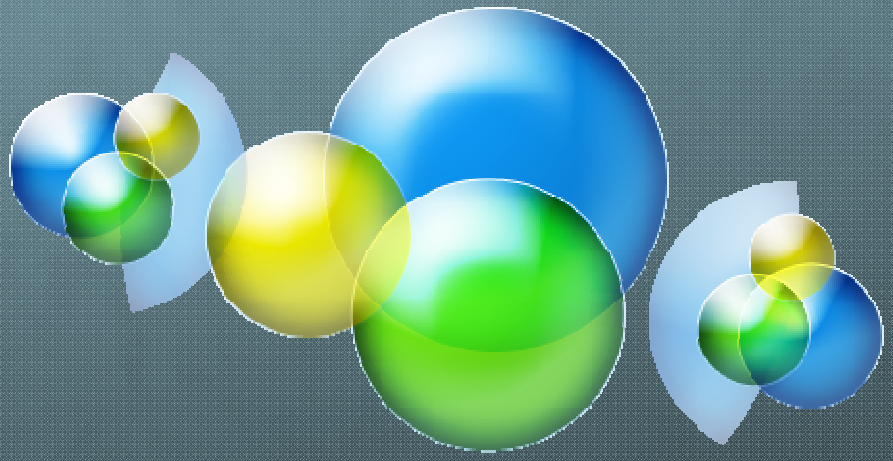
The project PRECIOUS has received funding from the European Union s Seventh Framework Programme under Grant Agreement n° 611366"



Adapting MI to *mHealth* in the management of chronic health conditions: The PRECIOUS service

PILAR LUSILLA

MINT Forum Berlin

15 October 2016

Vall d'Hebron Hospital

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- Key issues about *mHealth*
- *Some Research evidence*
- The Precious Project
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Key issues about mHealth

- mHealth solutions can empower citizens with information and motivation to improve lifestyles and reduce chronic diseases
- Patients can stay healthier, resources can be better utilised, lowering the costs of care.

Source: PWC, socioeconomic impact of mHealth 2013

Socioeconomic impact

June 2013

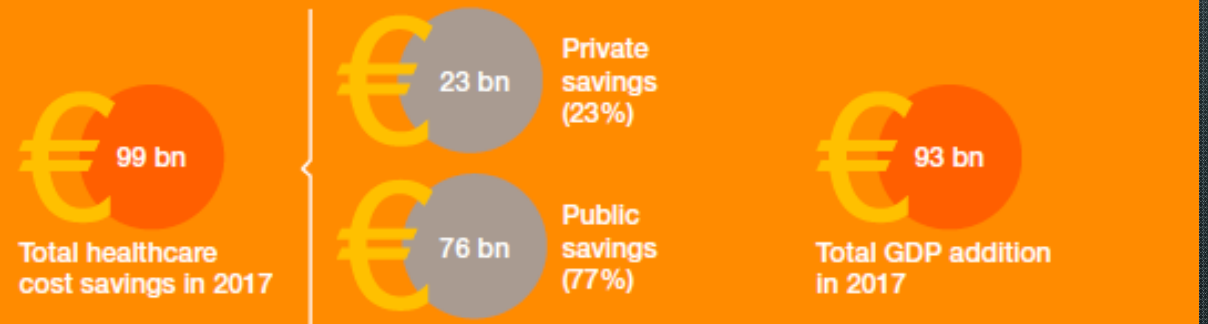
Socio-economic impact of mHealth

An assessment report for the European Union

pwc

www.pwc.in

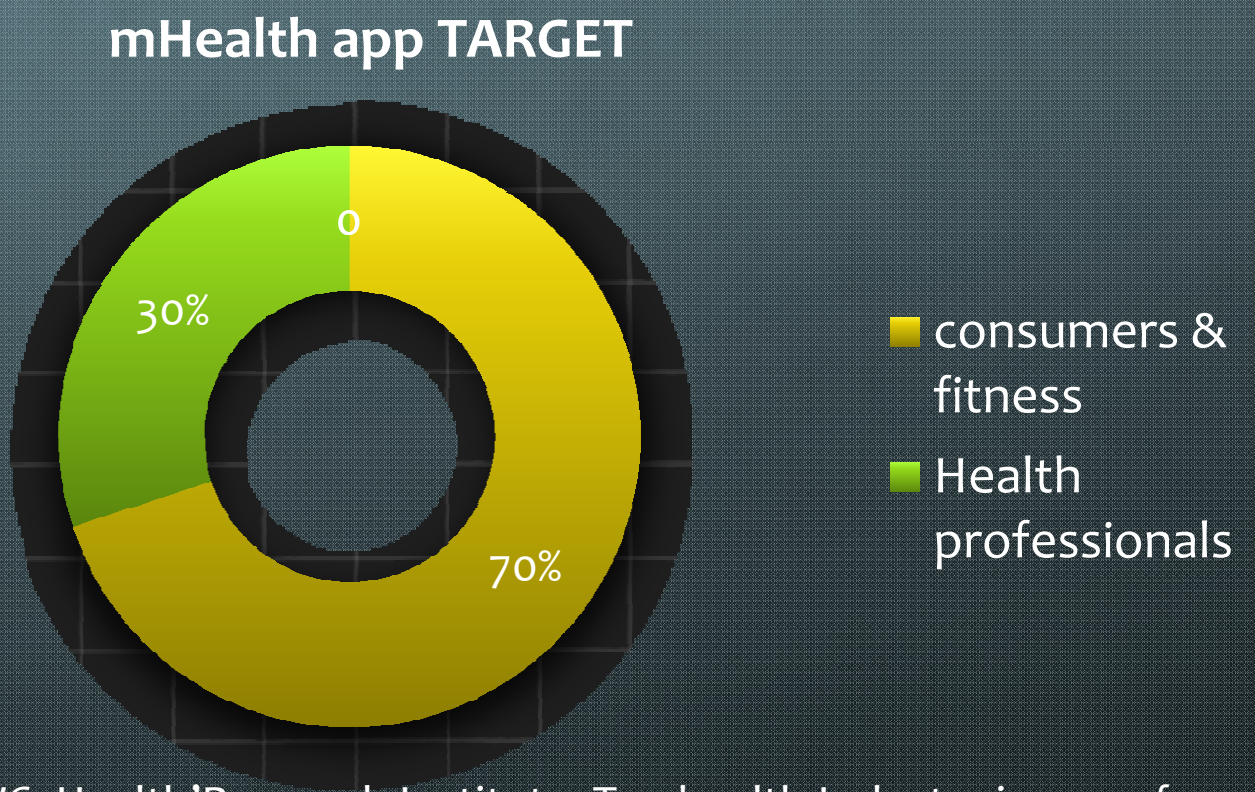
mHealth could save 99 billion EUR in healthcare costs in the European Union (EU) and add 93 billion EUR to the EU GDP in 2017 if its adoption is encouraged.



Source: PwC analysis

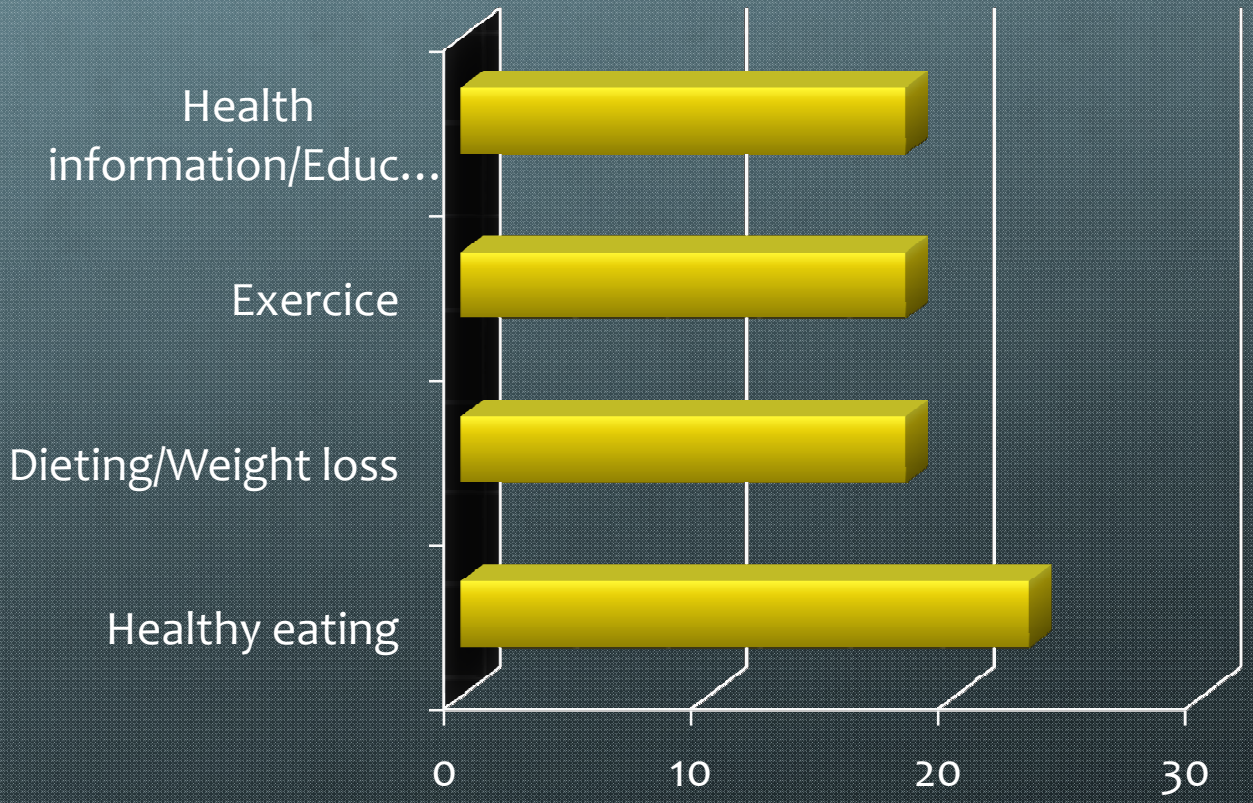
Facts & Figures

- 97.000 Health apps are currently available



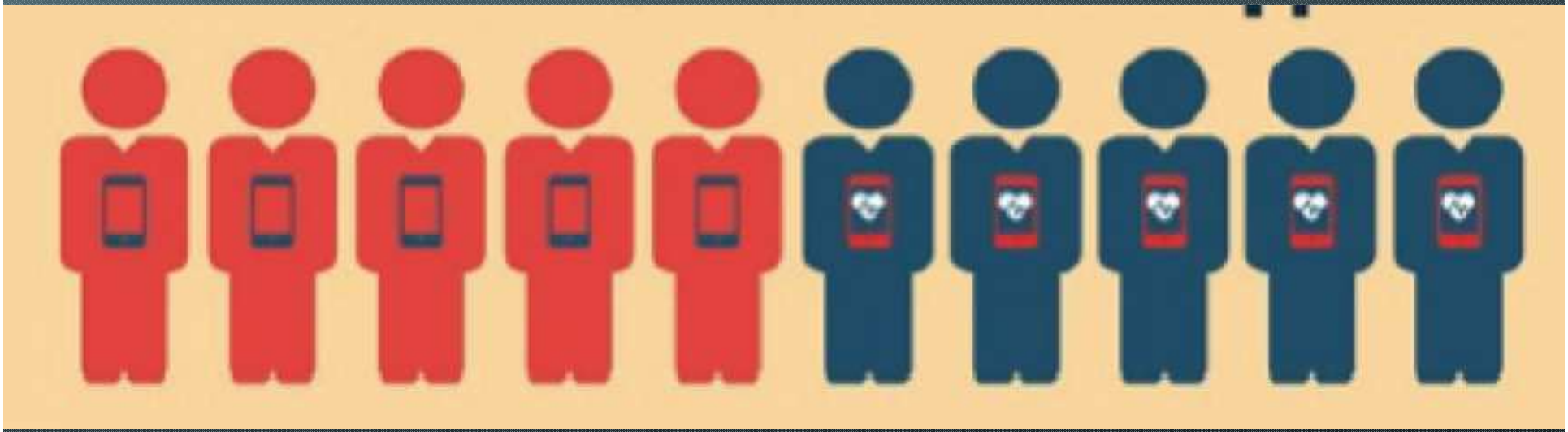
Source: PWC. Health'Research Institute. Top health Industry issues of 2015

Top 4 mobile medical app categories



Future perspectives

- By 2017, 3,4 billion people worldwide will own a smartphone and 50% will use health apps

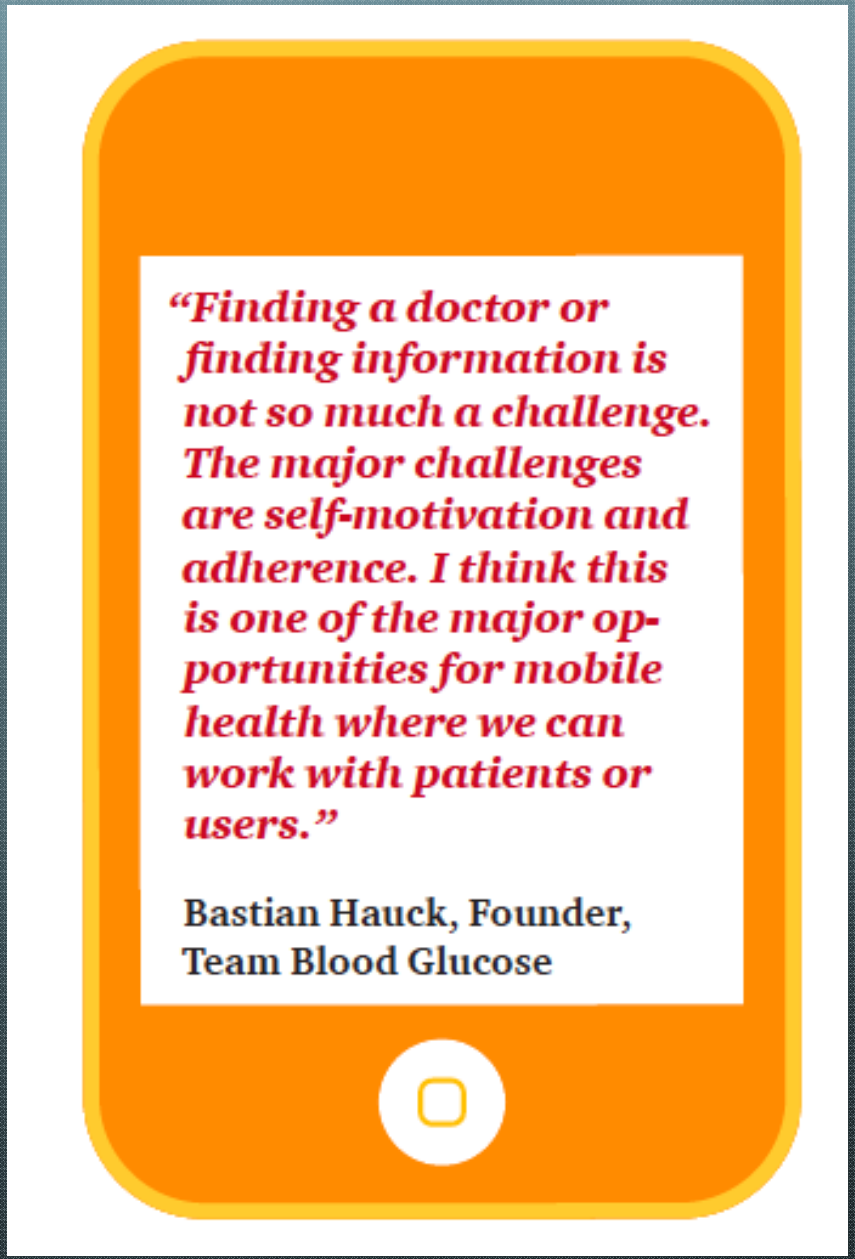


Source: PWC. Health'Research Institute. Top health Industry issues of 2015

Mobile health app

- mHealth app are becoming a regular part of care

86% of clinicians believe that mobile apps will become important to physicians for patient care management over the next 5 years



So…
An opportunity to MI?

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OJPHI

Mobile medical and health apps: state of the art, concerns, regulatory control and certification

Maged N. Kamel Boulos[1], Ann C. Brewer[2], Chante Karimkhani[3], David B. Buller[4], Robert P. Dellavalle[5]

Online Journal of Public Health Informatics * ISSN 1947-2579 * http://ojphi.org * 5(3):e229, 2014

OPEN ACCESS Freely available online

PLOS | MEDICINE

The Effectiveness of Mobile-Health Technology-Based Health Behaviour Change or Disease Management Interventions for Health Care Consumers: A Systematic Review

Caroline Free[1]*, Gemma Phillips[2], Leandro Galli[3], Louise Watson[4], Lambert Felix[5], Phil Edwards[1], Vikram Patel[4], Andy Haines[4]

JMIR RESEARCH PROTOCOLS Moreau et al

Original Paper

Development of a Fully Automated, Web-Based, Tailored Intervention Promoting Regular Physical Activity Among Insuffic I-Chan Intervie

Michel More

JMIR RESEAR

(JMIR Res Pro

Friederichs et al. BMC Public Health 2014, 14:212
http://www.biomedcentral.com/1471-2458/14/212

BMC Public Health

STUDY PROTOCOL Open Access

I Move: systematic development of a web-based computer tailored physical activity intervention, base self-

Stijn AH F
and Lilian

Hebden et al. Trials 2013, 14:75
http://www.trialsjournal.com/content/14/1/75

TRIALS

STUDY PROTOCOL Open Access

'TXT2BFiT' a mobile phone-based healthy lifestyle program for preventing unhealthy weight gain in young adults: study protocol for a randomized controlled trial

Lana Hebden[1*], Kate Balestracci[1], Kevin McGeechan[2], Elizabeth Denney-Wilson[3], Mark Harris[4], Adrian Bauman[2] and Margaret Allman-Farinelli[1]

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- PRECIOUS approach is that preventive health care needs to be fun and motivational as suggested by the gamification paradigm.
- The aim is to help the user to achieve a healthy lifestyle and to maintain it.
- The philosophy: **be healthy could be fun**

SEVENTH FRAMEWORK PROGRAMME

Grant agreement no: 611366

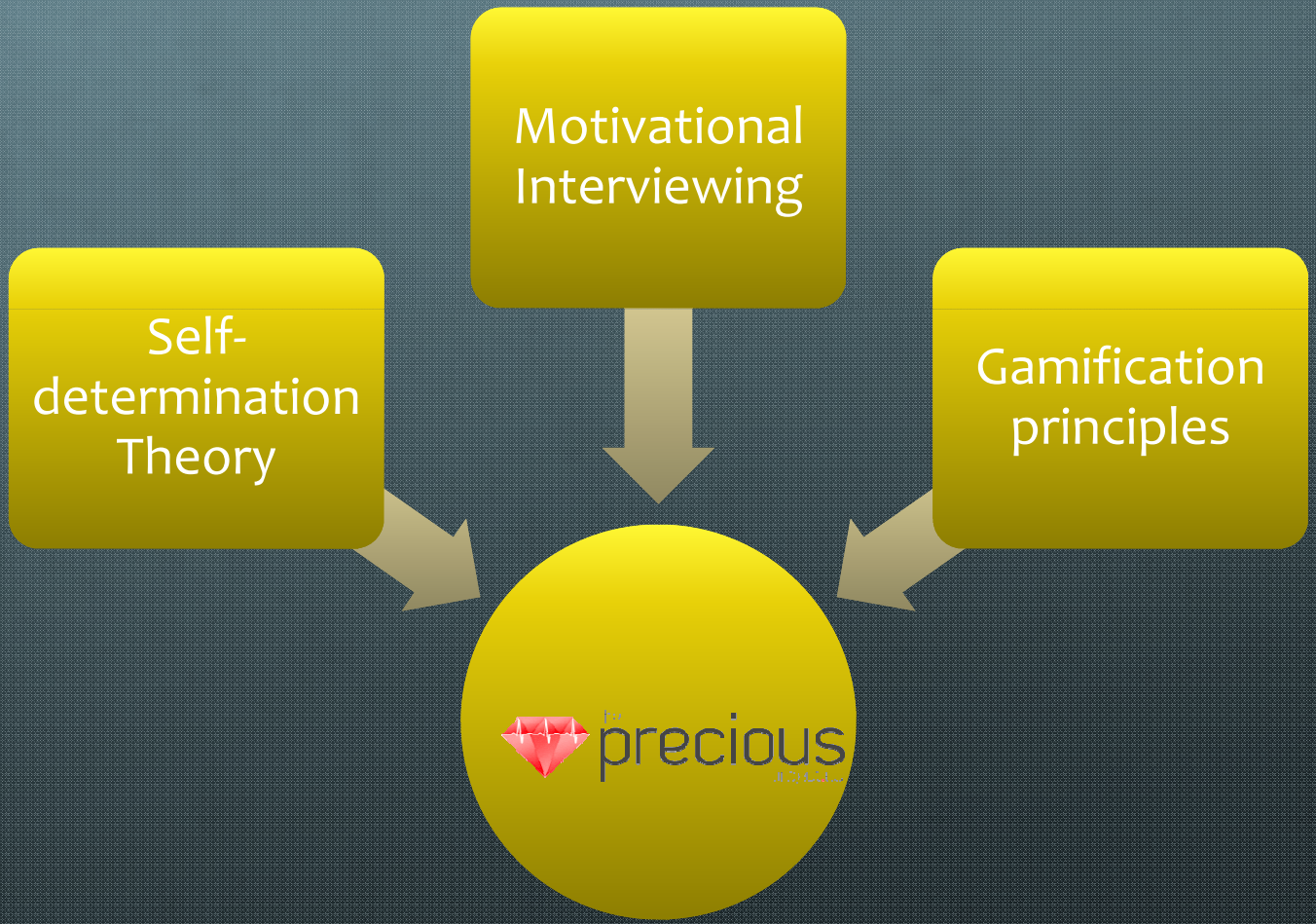
PRECIOUS Consortium

SEVENTH FRAMEWORK PROGRAMME

Health is precious

- PREventive Care Infrastructure based On Ubiquitous Sensing (PRECIOUS) project aims to develop a preventive care system that combine transparent sensors and wearable devices for monitoring user context and health indicators.

The precious approach components



Target behaviours

- *Physical activity*
- *Food Intake*
- *Sleep*

User's benefit

- The user should enjoy being healthy!!!
- The system should help in preventing diabetes disease and metabolic syndrome by improving food intake habits, exercise and reducing stress level (better sleep)
- User should maintain persistent usage through games, motivational feedback, etc.

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Challenges

- How do we engage people in a preventive health app?
- How do we structure a framework incorporating SDT, gamification and MI principles to achieve and maintain a healthy lifestyle?
- How do we achieve long-term engagement of the user with the system?

MI Strategies for SDT components

- **AUTHONOMY**
  - Let the client make decisions about what and how to change
  - Offer a menu of options
  - Delivery information with permission
- **COMPETENCE**
  - **Provide possitive feedback**
  - affirms the strengths of participants
  - Support self-efficacy
- **RELATEDNESS**
  - Express empathy with the messages
  - Explore user's concern
  - Option to share goals with others if liked

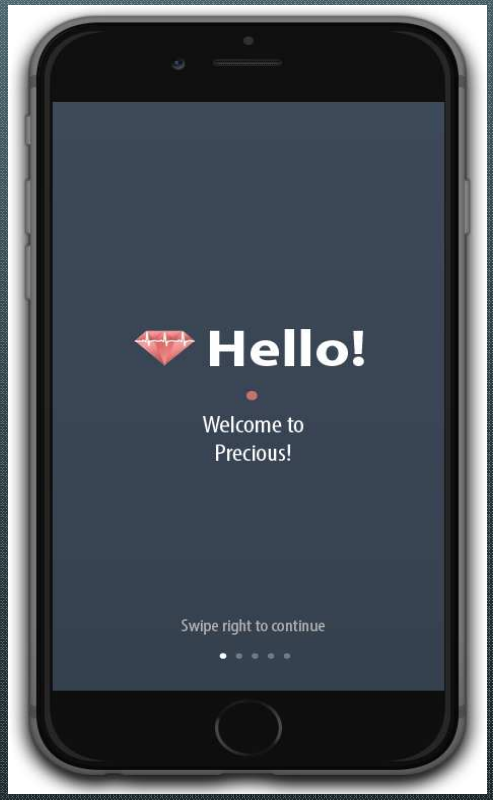
Playing for change

General Overview

- The Precious System will let the users depending on their outcome goals and preferred activities to choose between different app in order to achieve those goals.
- User will self-monitored activity with wearable (wristband)
- User will receive positive feedback and affirmation with any small success and suggest other activities if the user is not confident in achieving the goal.

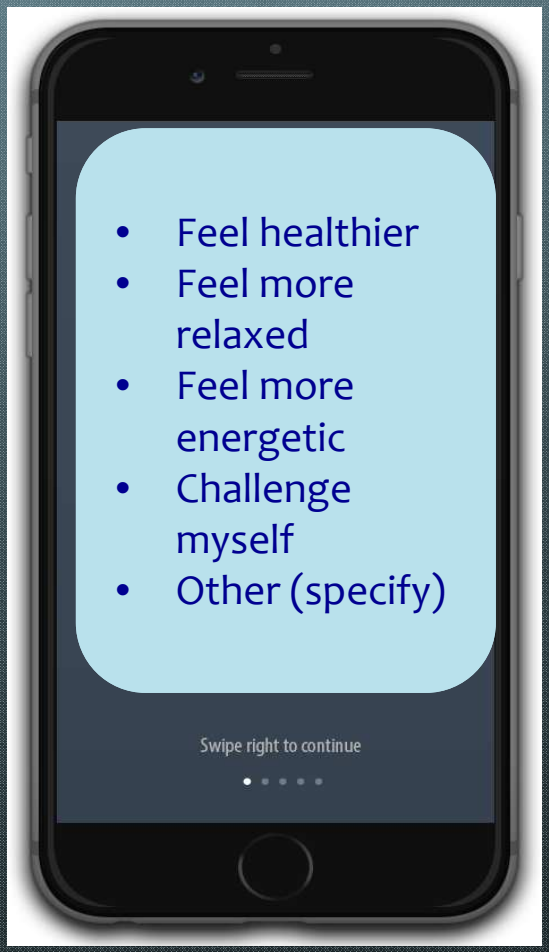
Step 1: Engaging

- **Welcome & On boarding**
  - Registration, nickname, user profile, personalization, minigame .



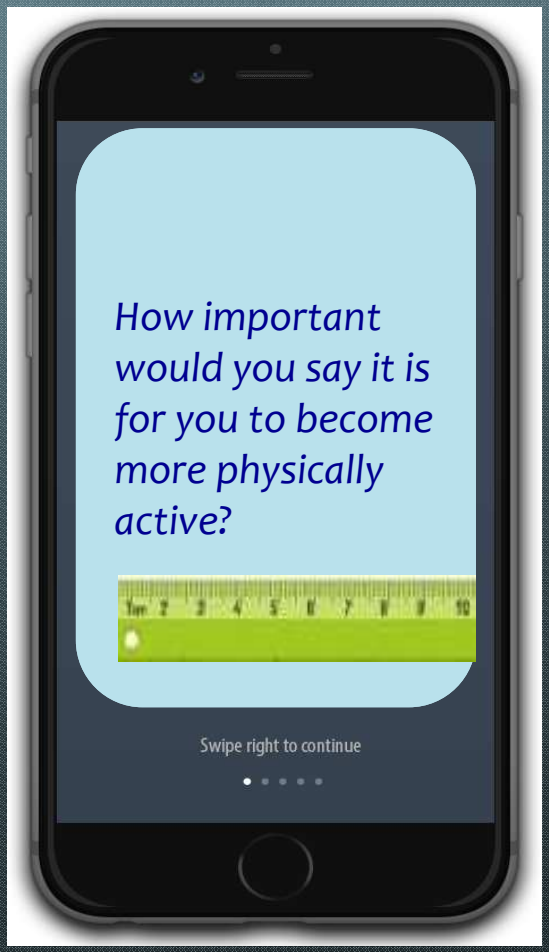
Step 2: Focusing

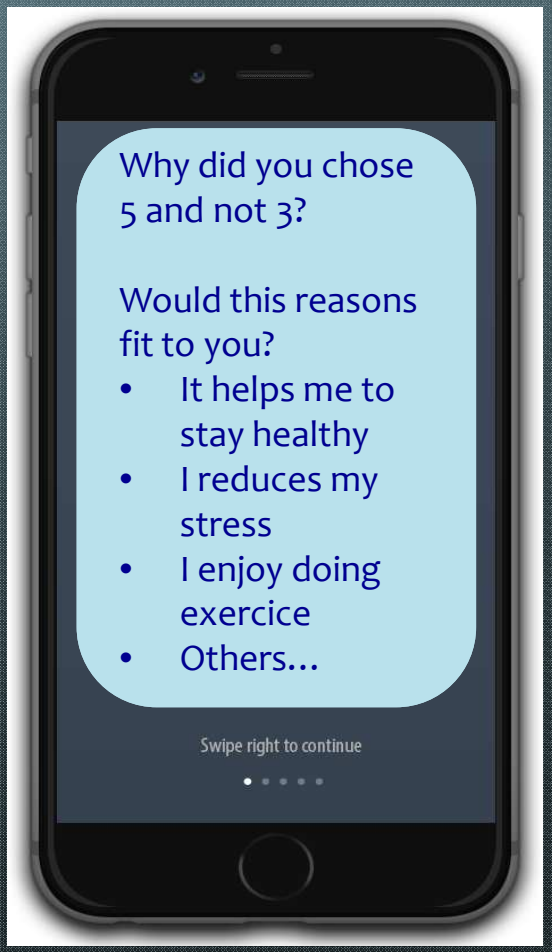
- Establishing outcome goals and rating them in order of importance
- Choosing behaviours to achieve outcome goals
- Selecting activity



Step 3: Evoking (1)

- Importance ruler
- Confidence ruler
- Explore options to increase importance/confidence





Step 3: Evoking (2)

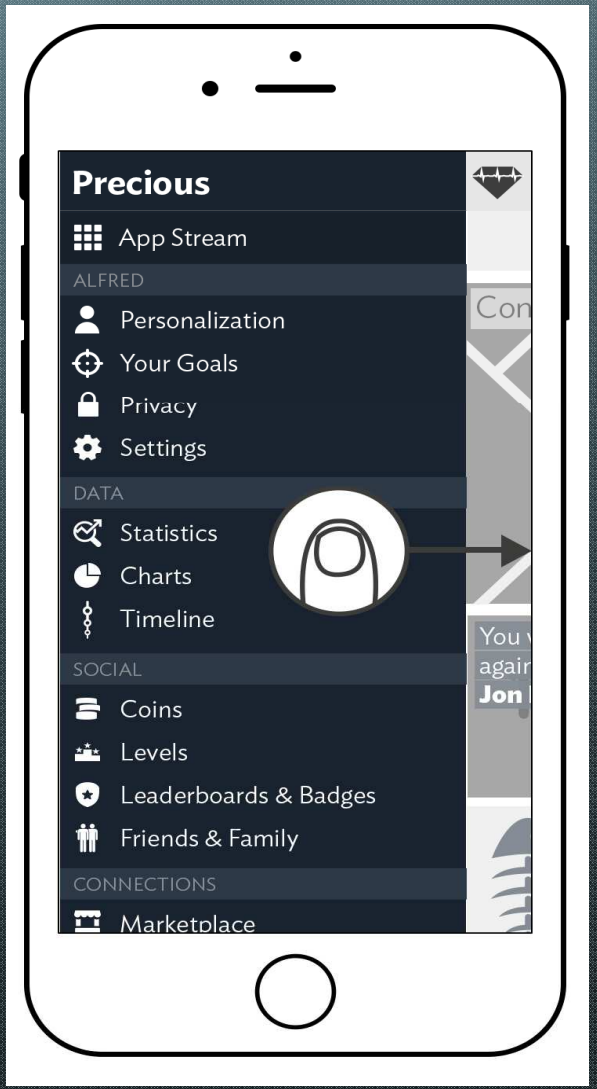
- Solving problems tool: Time machine
- Big summary
- Suggesting app with information

Step 4: Planning

- Users make action plans by selecting pre-made activity/duration combinations that equate to the level of their goal
  - Or decide to go without planning
- These suggested plans are populated based on users favorite activities
- After selecting, users are asked whether they wish to plan a time to undertake this activity
  - Either setting phone alarm
  - Or entering calendar entry

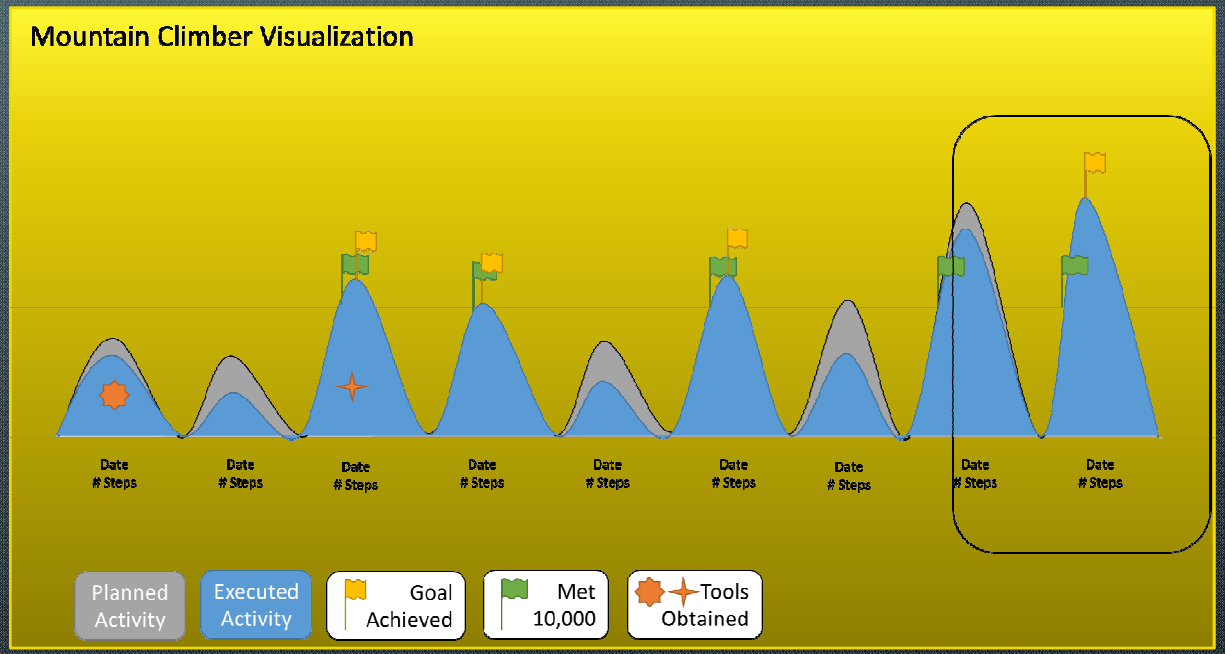
App Data report

- Users can personalize at any given time the level of detail they wish regarding their behavior.
- They can also choose the preferred type of data visualization (e.g. statistics, analytical approach, in a gamified way such as feeding a pet



Sustained motivation, continuous game play

- Continuous gamified elements that guide the user through the service and that offer repeated challenges.
- **Mountain climber self-monitoring tool (**The longer the users use the tool, the more impressive panorama generate)



'I've got a patient who needs to chat to someone...Have you got anyone who's completed the 'verbal communication with patients in a personal, supportive but not disempowering' course?'

Conclusions

- mhealth apps can play a relevant role to improve the health in the population as mobile devices are worldwide available.
- An attractive format and a patient centered approach seems to be appropriate when a health app is designed
- Although with limitation, as shown in PRECIOUS, MI principles and some MI strategies can be adapted to an app format.
- More research is needed in order to find evidence-based feasibility and efficacy.

Change is not always easy… and new technologies are not the exception!

THANK YOU!!