mHealth – From deployment to a sustainable business

Jeanine Vos, Executive Director mHealth, Connected Living Programme
Speakers – Session One

- Abhi Ingle, VP of Sales in Advanced Mobility Solutions, AT&T
- Gari Clifford, Associate Director, Centre for Doctoral Training in Healthcare Innovation, Oxford University and Sana
- Astrid Grotland, Norwegian Centre for Integrated Care and Telemedicine – Renewing Health
AT&T mHealth Solutions

Abhi Ingle
Vice President
Industry & Mobility Application Solutions
AT&T

February 2012
Breaking Down Perceived mHealth Barriers

1. **mHealth is only for the young**

2. **App fragmentation and low engagement**

3. **Connected device profusion but no data sharing**
Perceived Barrier

mHealth is only for the young

AT&T Perspective

All ages are very savvy!

more age 50+ using Smartphones vs. ages 13-17

ComScore: mobile year in review 2010

AT&T is committed to providing ubiquitous solutions beyond SMS & Smartphone apps
Perceived Barrier
mHealth apps - 80% churn

Over 17,000 mobile & health wellness apps today

PwC 2010, MobiHealthnews 2010, research2guidance 2011

AT&T Approach
Focused approach, sustained use

Informed Care
Feedback & Coaching
Reports & Analysis
Real-time Patient Data

App fragmentation & low engagement
Perceived Barrier
Connected device profusion, but no data sharing with apps

AT&T Response
AT&T Development Center ForHealth

Connected ecosystems
shared data

© 2012 AT&T Intellectual Property. All rights reserved. AT&T and the AT&T logo are trademarks of AT&T Intellectual Property.
AT&T ForHealth Solution Areas

Harnessing the power of technology and smart networks to create a healthier world

mHealth
Cloud-Based Solutions
Healthcare Community Online
Telehealth

Cloud-Based AT&T Developer Center
Smartphone Apps:
Unbiased signals – open & affordable healthcare technology in low-resource environments

Dr. Gari D. Clifford

Director: Intelligent Patient Monitoring Group
University Lecturer & Associate Director
Centre for Doctoral Training in Healthcare Innovation
Institute of Biomedical Engineering
Department of Engineering Science
Co-founder: Sana Mobile, MIT
The global problems with mHealth

- Too few trained medical professionals (50k:1)
- Humans are biased & fallible (medical errors)
- Poor & *ad hoc* supply chains
- Poor information portability
- Lack of scientific foundation to most apps
- High patient:doctor ratio around the world
- Medicine- inherent High FP rate: wrong paradigm
  - We can't cope with the possibility of overwhelming the healthcare system
- Compliance
  - Lack of evaluation of long term usage
  - Humans prefer *recreation*, not healthy behaviour
Solutions

- **Open Source infrastructure (Sanamobile.org)**
  - BSD license to allow proprietary plug-ins / business models
  - Universal (multilingual) ontologies
  - Portable personal medical record plugs into hospital EMR

- **Multiple expert adjudications**
  - Reduces bias and errors

- **AI algorithms trained on human annotations**
  - Doctors only have to look at a tiny % of cases
  - Reduces costs, offloads work to phone or cloud

- **Hardware has to use existing supply chains: peer-to-peer**
  - Low cost/disposable sensors that plug into USB port
Example: CVD

- New BP monitor plugs into phone to reduce #hops for data
- No wireless transmission components
- USB supplies power – no battery
- <$5 of components
- Can be tuned to specific population
  - Western calibrations are inappropriate
Example: Sleep & Mental Health

- **Sleep** - Use only sensors on phone
  - Microphone, accelerometer & camera
  - Signals analysed using AI to classify patient
  - 90% accurate – highly specific!

- **Mental Health**
  - Phone actigraphy & sleep patterns

*Schizophrenia*
Acknowledgements

People/Teams
Leo Celi & the Sana team @MIT
EWH-Oxford
IPM Group
PIH and OpenMRS
Profs. Tarassenko, Mark, Szolovits, Goldberger …

Funders
EPSRC / RCUK
Wellcome Trust
Vodafone
Royal Society
John Fell Fund
Mindray
University of Oxford
MIT PSC
NIH & CIMIT
EWH
University of Daejeon

www.robots.ox.ac.uk/~gari
www.ibme.ox.ac.uk/ipm
www.ewh-oxford.org
Mobile health deployment in Northern Norway

Astrid Grøtland – Project Manager, Norwegian pilot
Norwegian Centre of Integrated Care and Telemedicine.
Large scale pilot to assess impact of personal and mobile health systems on chronic patients’ care

Three major chronic conditions:
• T2 diabetes
• Lung disease (COPD)
• Cardio-vascular disease (CVD)

Common telemedicine impact assessment tool

Key project parameters:
• Duration: 48 months
• Budget: €14.000.000 (50 percent from EC)
• Nine European regions, 21 partners

Practical demonstrations this afternoon

More information: www.renewinghealth.org
The diabetes challenge

• Escalating numbers of T2 Diabetes – epidemic

• Diabetes caused at least USD 465 billion in healthcare expenditures in 2011 worldwide; 11% of total healthcare expenditures in adults (... acc to the International Diabetes Federation)

• Fewer than 10% achieve in following all advised goals

Our mission: In an easy way, provide users a better overview of disease-related factors, on a unit that is “always” with them
**Self-help tool: Few Touch Application / Electronic diabetes diary**

**Design ideals:**
- Simple, automatic, easy
- Off-the-shelf
- Secure
Expected findings

• For the patient:
  – Better health, QoL, self management and control
  – Empowerment and motivation

• For the health service:
  – Better patient and more personalised patient care
  – Less short and long term complications

• For society:
  – Cost Savings
  – Healthier population

Financing model? – Ownership and support?
Feedback – so far...

• **Feedback from users:**
  – Application: Only positive feedback
  – On the telephone:
    • Too small interface, limited sound quality
    • Challenges with touch screen and functionality
  – Half of the drop-outs blame it on the telephone functionality

• **Feedback from GP’s / health care:**
  – Interesting – like it – sorry, but have no time for it.
  – Support and payment?

• **Technological challenges:**
  – Issues with device interoperability and standards (lack of...) between platforms.
Thank you

- Astrid Grøttland,
  Senior project manager,
  Renewing Health Norway.

Norwegian Centre for Integrated Care and Telemedicine
astrid.grottland@telemed.no

www.renewinghealth.eu
Speakers – Session Two

- Lyse Brilloet, Head of Strategy and Marketing, France Telecom Orange
- Clin McClellan, Senior Director, Strategic Marketing, Qualcomm
- Horst Merkle, Director, Information Management Systems Diabetes Care, Roche Diagonostics Corporation
- Màrio Romão, Senior Policy Manager, Intel
Lyse Brillouet, Head of Strategy and Marketing, Orange Healthcare
SORIN - Remote monitoring of cardiac patients in the USA

Orange Healthcare – MWC 2012 mhealth – Lyse Brillouet Head of Strategy & Marketing
Orange is working on three fields, joining up Healthcare

**Services for Health Professional**

For hospitals, surgeries and pharmacies, and the professionals and patients within them.

**Health management**

Managing health conditions outside of traditional care environments in places such as the home.

**Prevention and wellness**

Preventing health conditions before they arise.

**Joining up** all of the people and infrastructure within the healthcare ecosystem, enabling superior coordination, collaboration and information flow between all parties.

**Joining up** traditional and non traditional healthcare environments, enabling high quality care and condition management within the broader community, giving patients more choice over their care provision.

**Joining up** people to the tools and information they need to manage their own health and well-being in the course of their everyday lives – whenever they need to, wherever they are.
mHealth provides world wide opportunities, covering a very large range of services

- **SMS appointment reminder** with the NHS in **UK**
- **Health Pro Pack** incl. mobile apps in **France**
- **Healthline** in **Bhutan** a call center to get in touch with health pros
- **Healthe.at** in **Austria** Diabetes remote management
- **Remote monitoring** of cardiac patients in the **USA**
- **Glycemia monitoring** on iPhone in **Spain**
- **Teledermatology** in **Egypt** and **Botswana**
- **SMS for pharmacies on duty** in **Ivory Coast**
- **Drug authentication via SMS** in **Kenya**
- **Health Pro Pack incl. mobile apps in France**

Orange Healthcare – MWC 2012 mhealth – Lyse Brillouet Head of Strategy & Marketing
Thank you
Redefining Personal Health Management

Wireless solutions enabling consumers to take charge of their health
The In-home 2net Hub Gateway

1. 2net Hub

END-TO-END, TWO-WAY CONNECTIVITY

2net™ Ecosystem

CUSTOMERS & COLLABORATORS

2net Enabled

1. 2net Hub

CLOUD-BASED CONNECTIVITY & INFORMATICS

3G

DESIGNED TO MEET HIPAA PRIVACY REGULATIONS

ACCESS VISUALIZATION & DISPLAY

Healthcare Professionals

Services & Apps

Patients

Payors
Thank You

Follow Us on Twitter @QualcommLife or online at www.QualcommLife.com
Mobile Health – A Sustainable Business


Horst Merkle, Roche Diabetes Care, Indianapolis USA
Roche Portrait

- Roche ranks among the world’s leading healthcare companies with strong businesses in pharmaceuticals, in-vitro diagnostics and diabetes care

- More than 80’000 employees worldwide

- World leader in Diabetes Care
  - **ACCU-CHEK®** brand provides innovative portfolio for improved diabetes care
    - Blood glucose monitors, Insulin delivery systems, Information management solutions
  - Strong commitment to interoperability to support health care professionals and promoting patient empowerment through enabling technologies.
  - Active promoter of the Continua Health Alliance
Roche Diabetes Care Product Portfolio

Serving all Stakeholders

- Self Management
- Analysis
- Therapy Support
- Efficacy & Efficiency

Blood Glucose Monitoring
Insulin Delivery
Disease Management
Data Repository

Core Business
Supporting Services / Competitive Differentiator

Copyright Horst Merkle, Roche Diagnostics Corporation, Indianapolis, USA | 36
Thank you
Panel Discussion
Thank you!