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 Grottland, 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!

2X 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

App fragmentation & low engagement

AT&T Approach

Focused approach, sustained use

Home

Informed Care

Feedback & Coaching

Diabetes Management

Reports & Analysis

Real-time Patient Data

Add Entry

65 mg/dL   10:37 AM
            Mon Nov 28

Perceived Barrier

Connected device profusion, but no data sharing with apps

AT&T Response

AT&T Development Center ForHealth

Connected ecosystems shared data

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
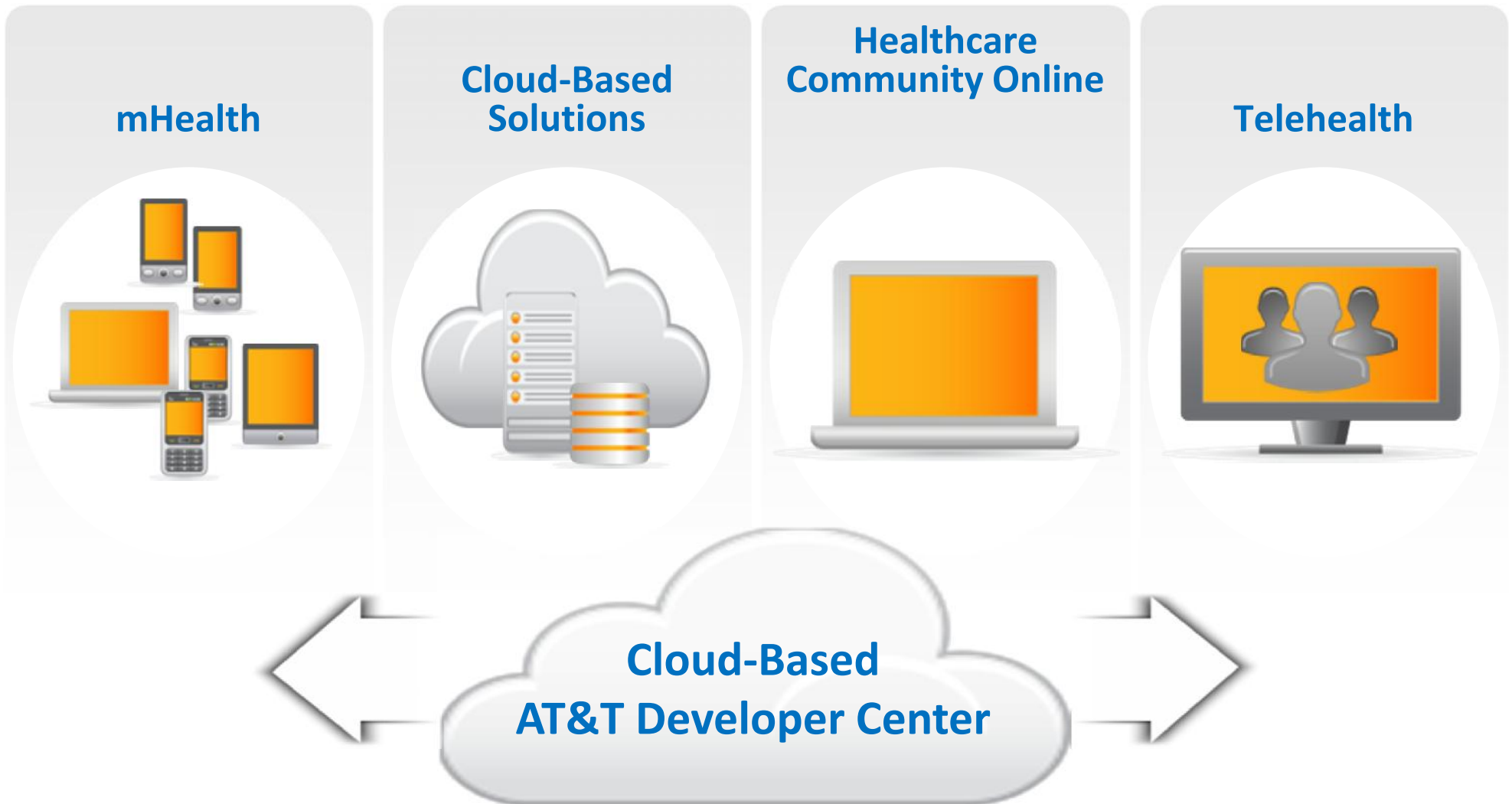
Smartphone Apps:

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 <u>global</u> 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

Inflation valve

Cuff

USB cable

Android smart phone

UNIVERSITY OF OXFORD
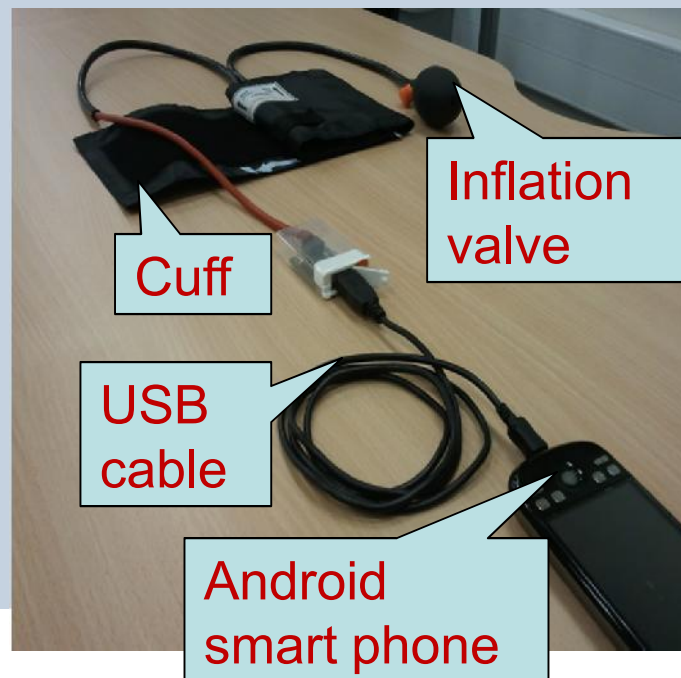
Example: Sleep & Mental Health

- **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
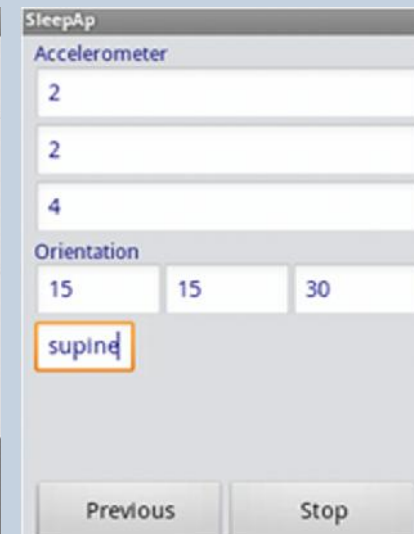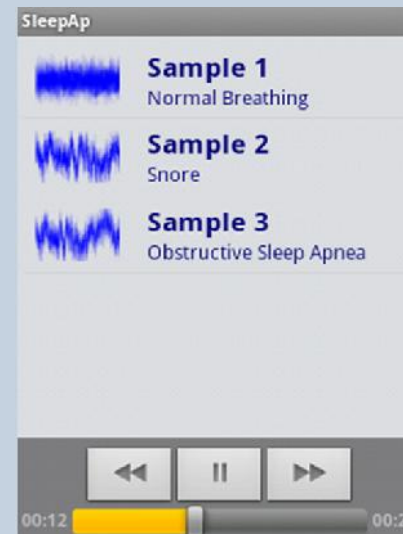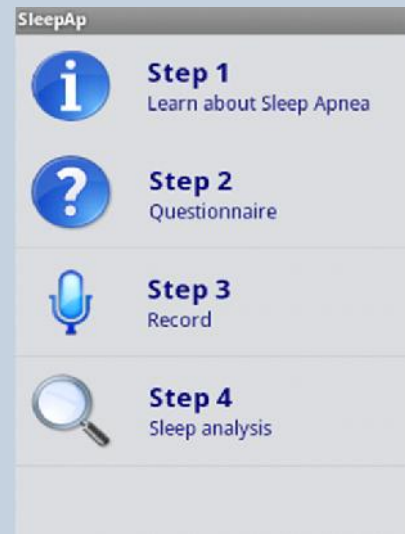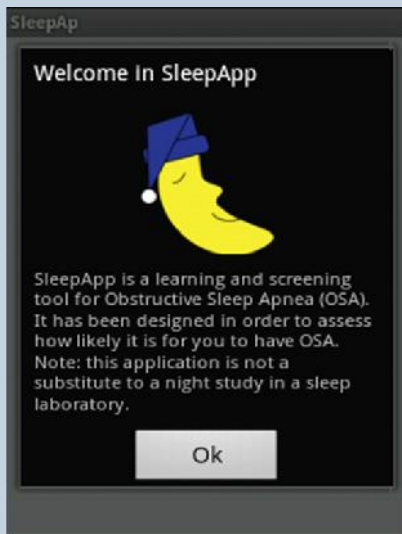
Acknowledgements

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EWH
University of Daejeon

www.robots.ox.ac.uk/~gari
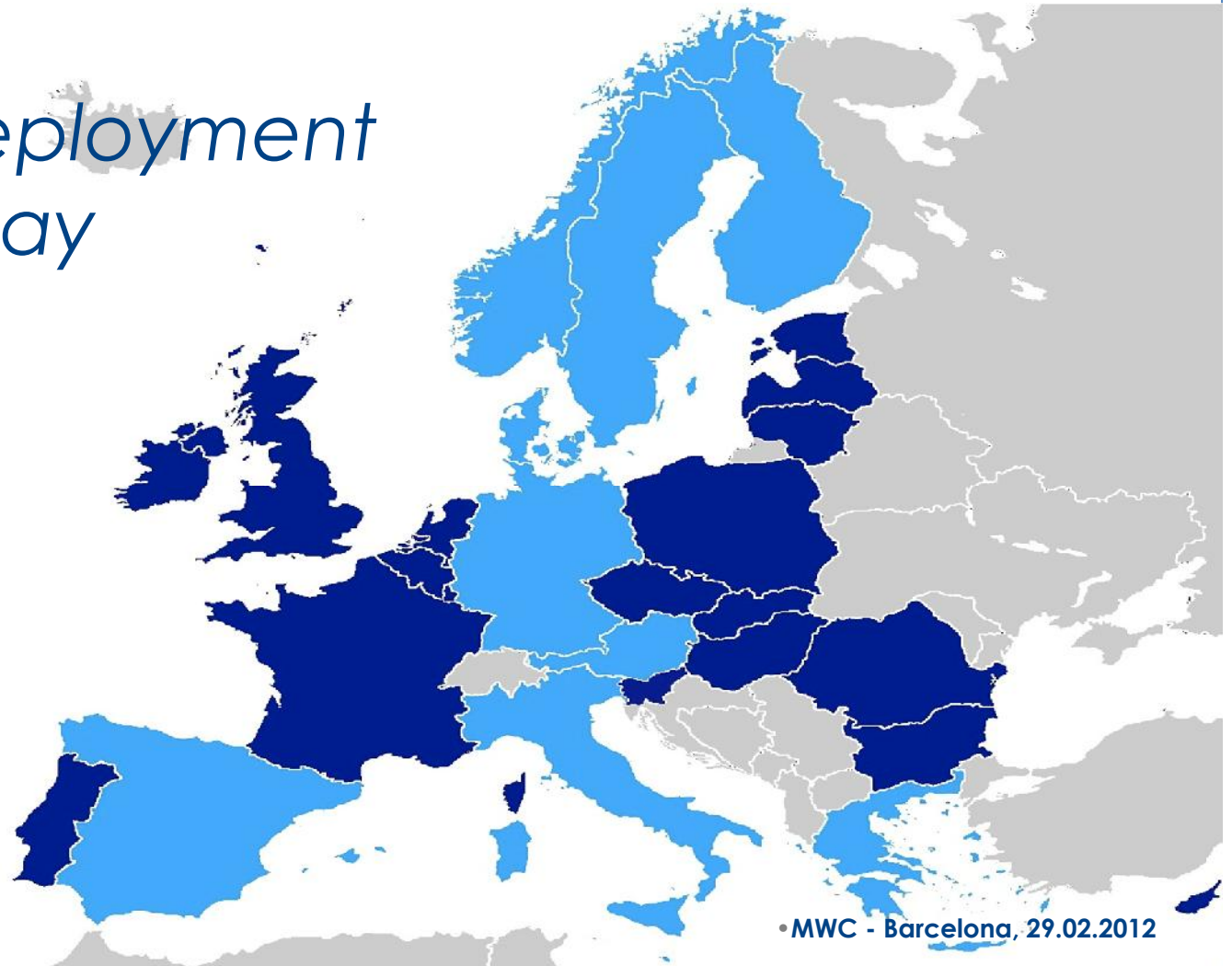www.ibme.ox.ac.uk/ipm
www.ewh-oxford.org

Mobile health deployment in Northern Norway

Astrid Grøttland – Project Manager, Norwegian pilot

Norwegian Centre of Integrated Care and Telemedicine.

MWC - Barcelona, 29.02.2012

... in a nutshell

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
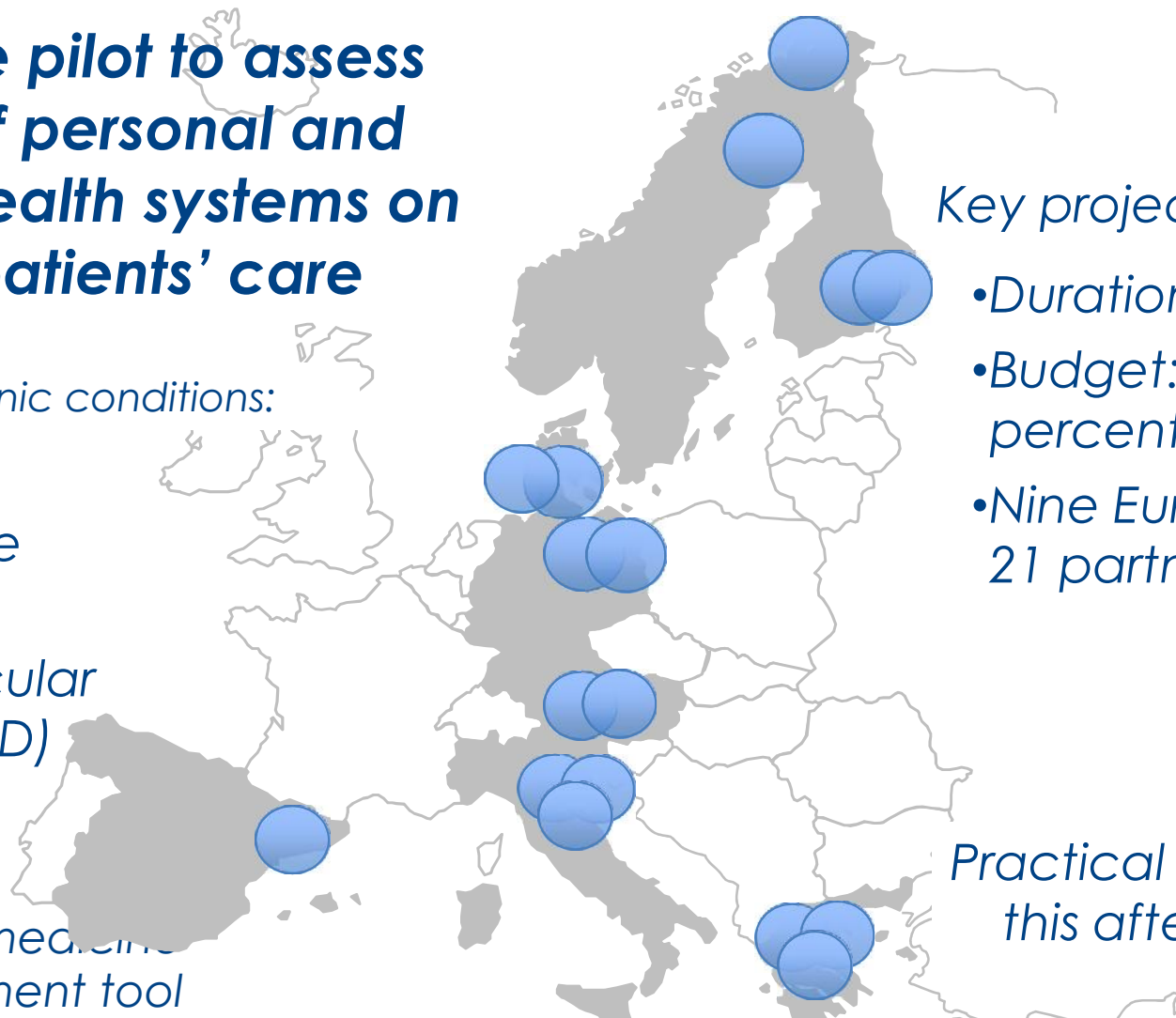
Key project parameters:

- 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

RENEWING HeALTH REgioNs of Europe WorkINg toGether for HEALTH

- *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*

RENEWING HeALTH REgioNs of Europe WorkINg ToGether for HEALTH

Self-help tool: Few Touch Application / Electronic diabetes diary
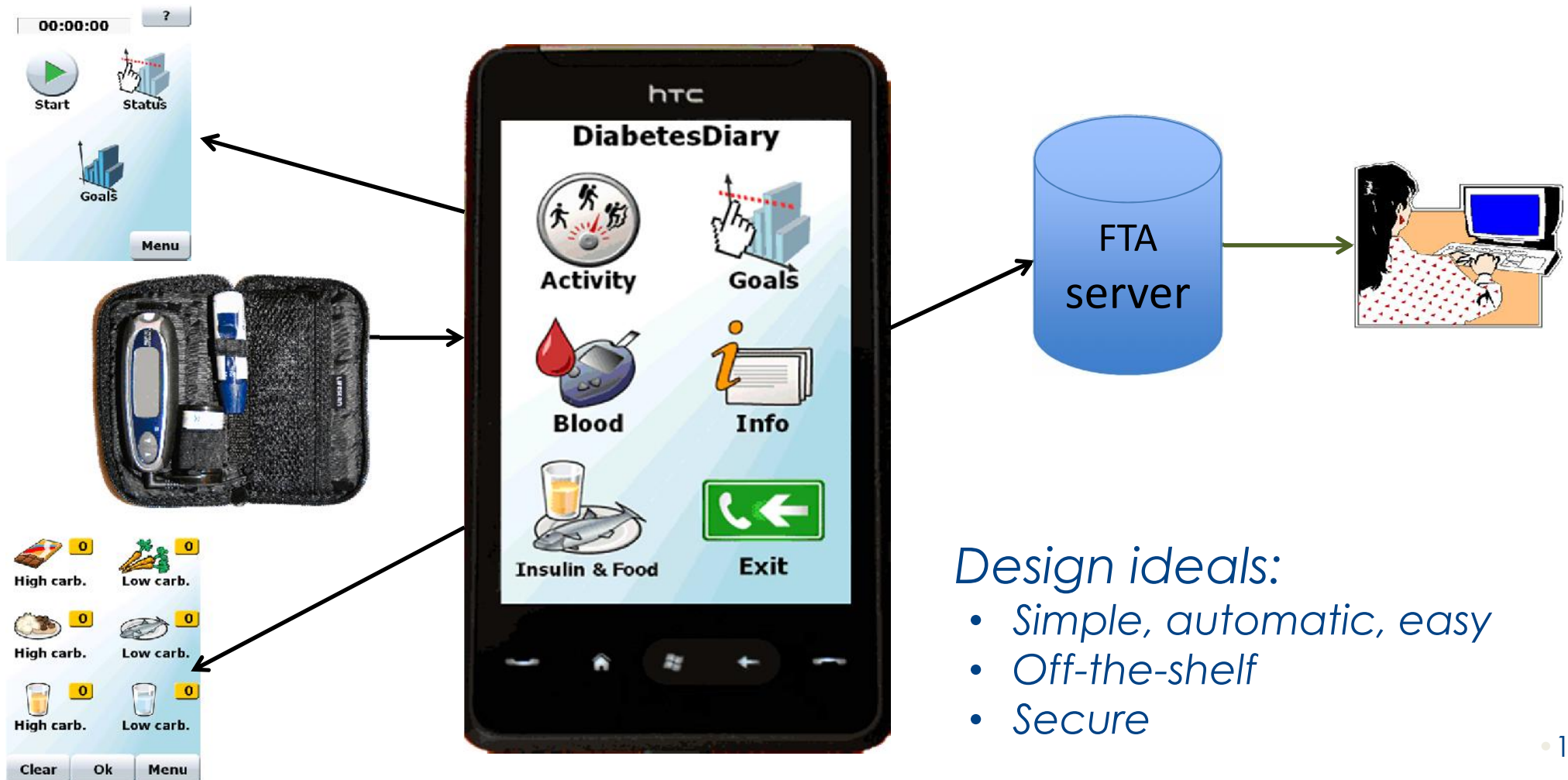
Design ideals:
- Simple, automatic, easy
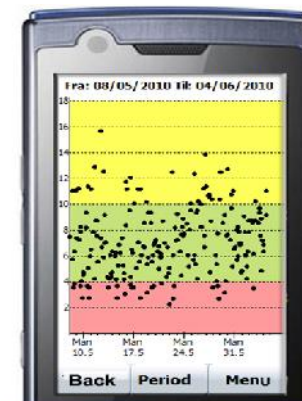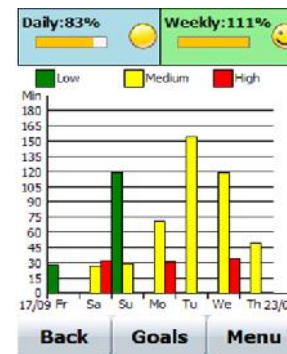- Off-the-shelf
- Secure

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

Panel Discussion

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 is working on three fields, joining up Healthcare

Services for Health Professional

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

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

Health management

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

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
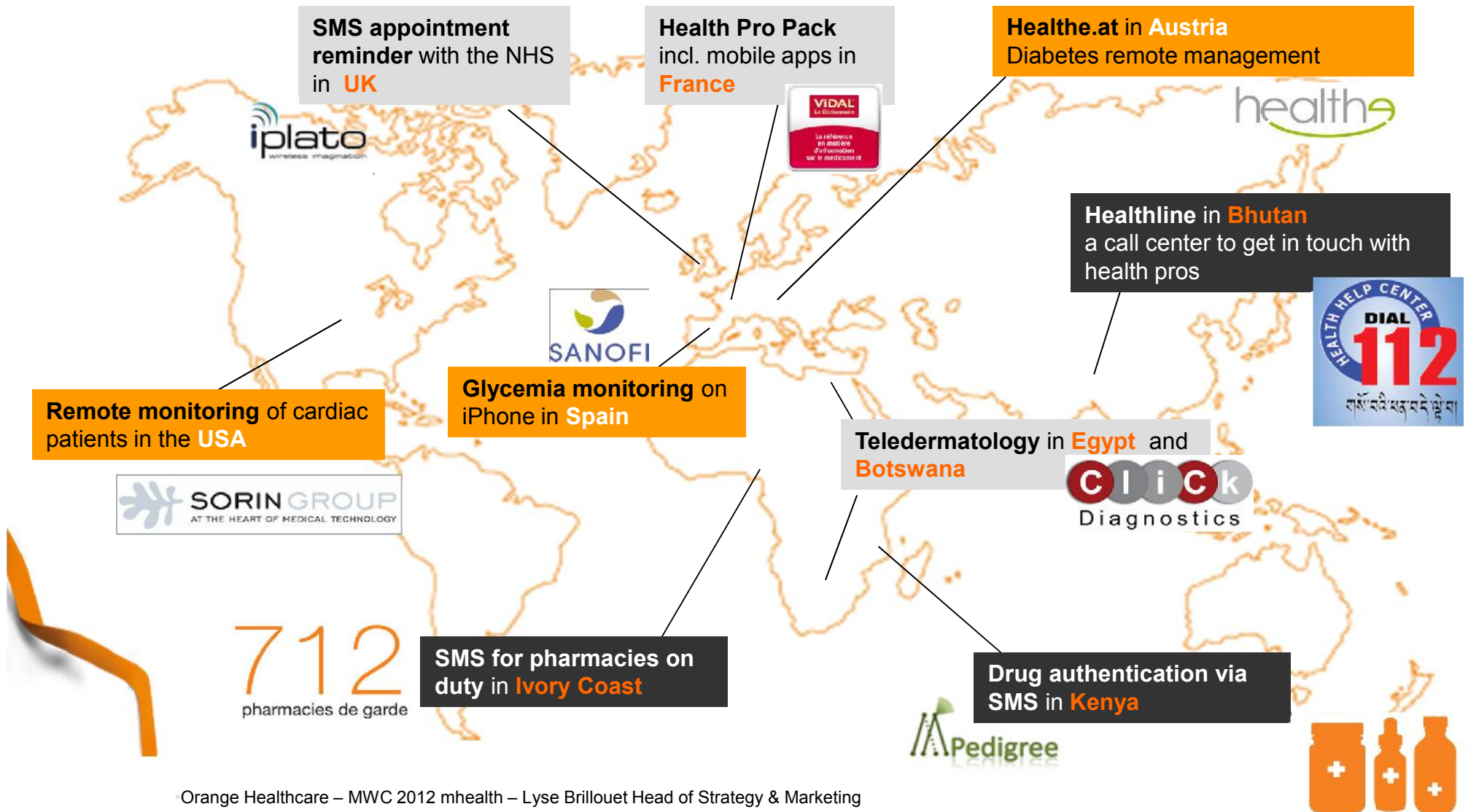
Prevention and wellness

Preventing health conditions before they arise.

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**

Healthe.at in **Austria** Diabetes remote management

Healthline in **Bhutan** a call center to get in touch with health pros

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**
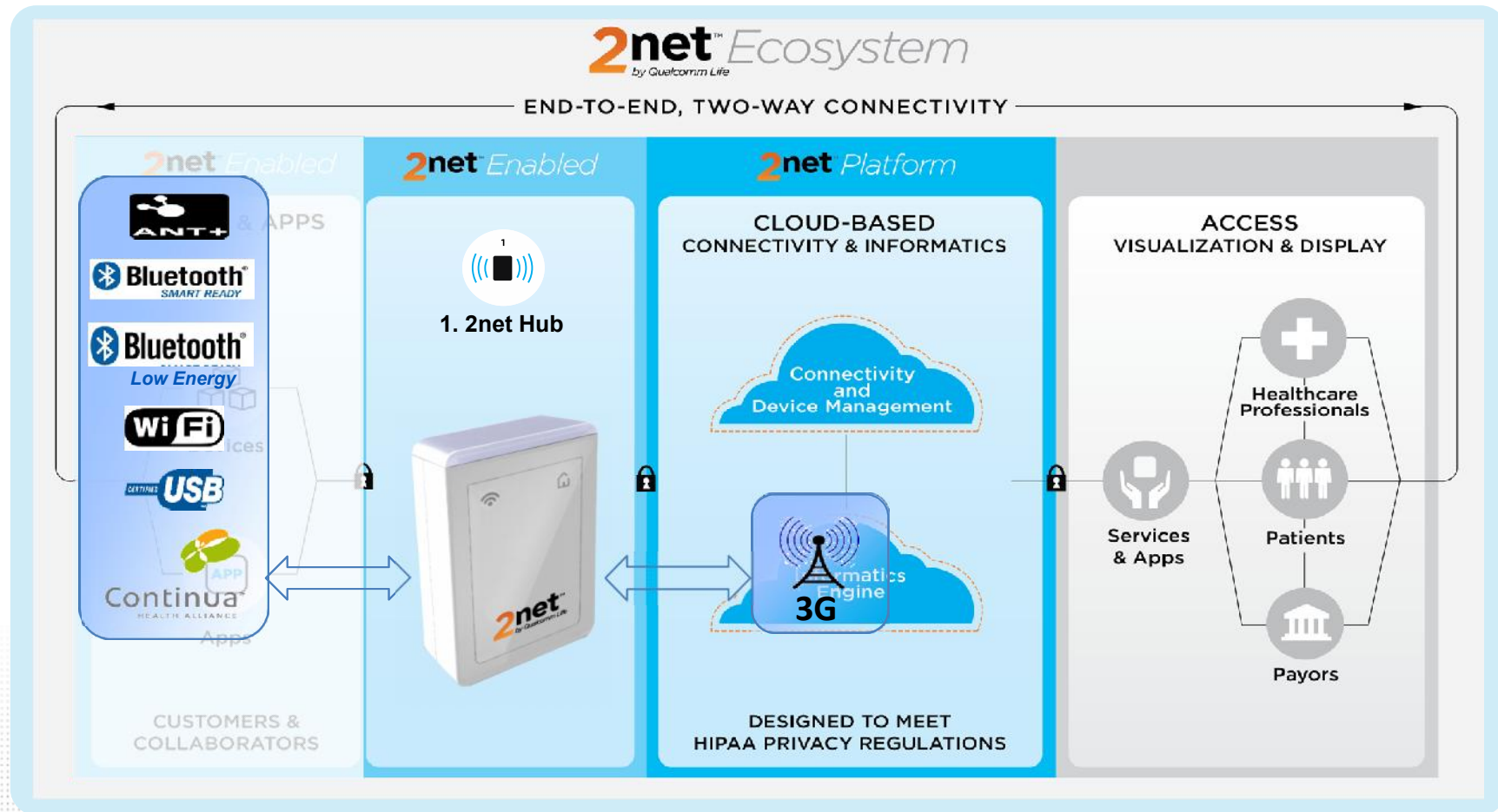
Thank you

Connecting the Wireless Health Network

February, 2012

Redefining Personal Health Management

Wireless solutions enabling consumers to take charge of their health

The In-home 2net Hub Gateway

Thank You

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www.QualcommLife.com

Mobile Health – A Sustainable Business

Mobile World Conference, Barcelona, 29. Feb. 2012

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

ACCU-CHEK ®

Roche Diabetes Care Product Portfolio

Serving all Stakeholders

Roche

Self Management | **Analysis** | **Therapy Support** | **Efficacy & Efficiency**

Blood Glucose Monitoring

Disease Management

Insulin Delivery

Data Repository

Core Business

Supporting Services / Competitive Differentiator

ACCU-CHEK ®

- Pattern Analysis
- Mobile Phone Apps
- Therapy Advice
- PwD
- Automatic Updates
- Roche Services Portal
- E-store Distribution
- HCPs
- Connected Integrated Interoperable
- EMR Integration
- Device Connectivity
- Payers
- Performance Reporting
- Localisation

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Roche

ACCU-CHEK®

Thank you

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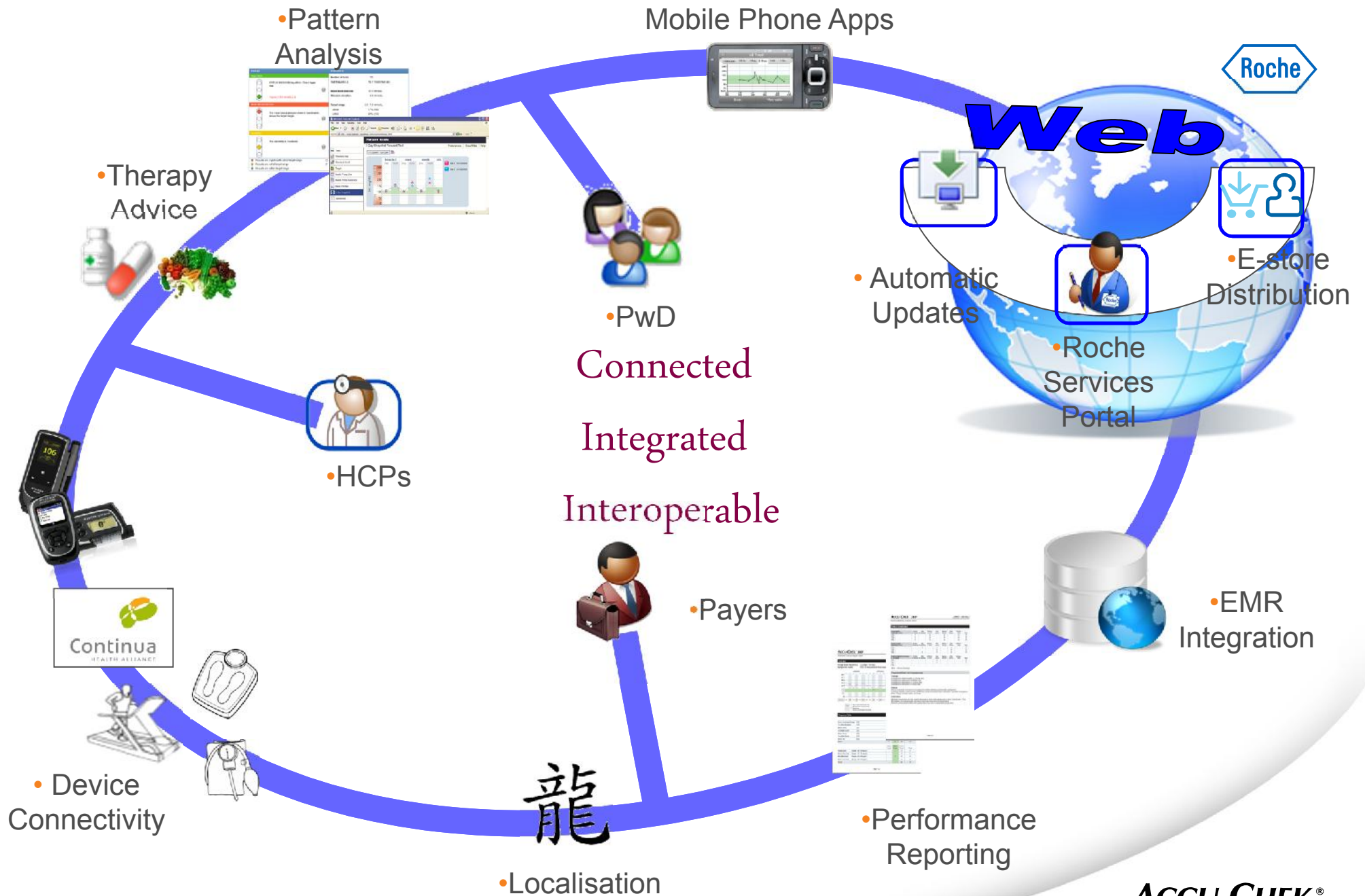
Panel Discussion

Thank you!