



**Ministerial**  
Programme 2012



# Connected Living

## The next wave of mobile devices

Ton Brand, Programme Director  
Connected Living Programme  
Monday 27 February 2012



# Our agenda

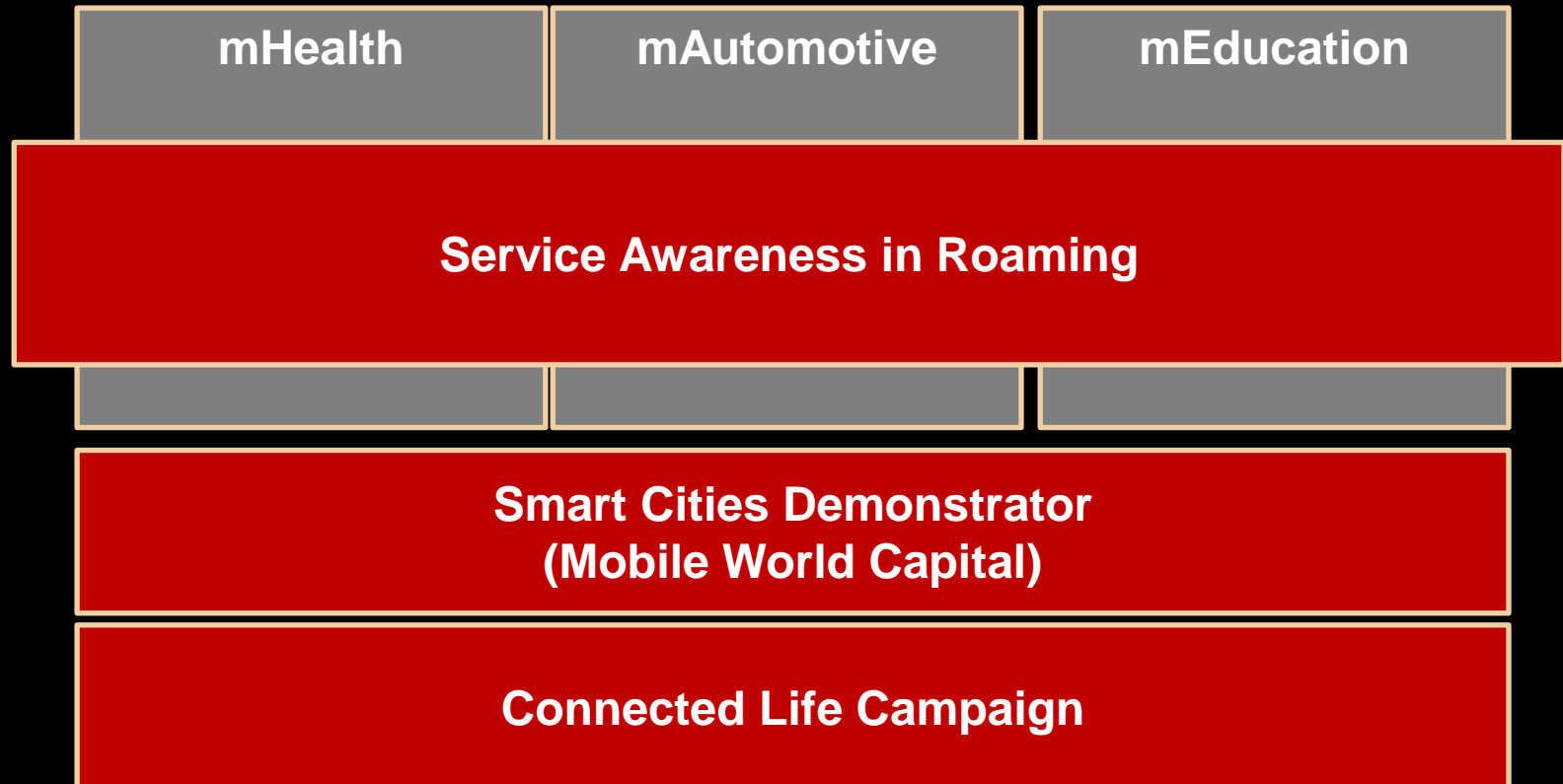


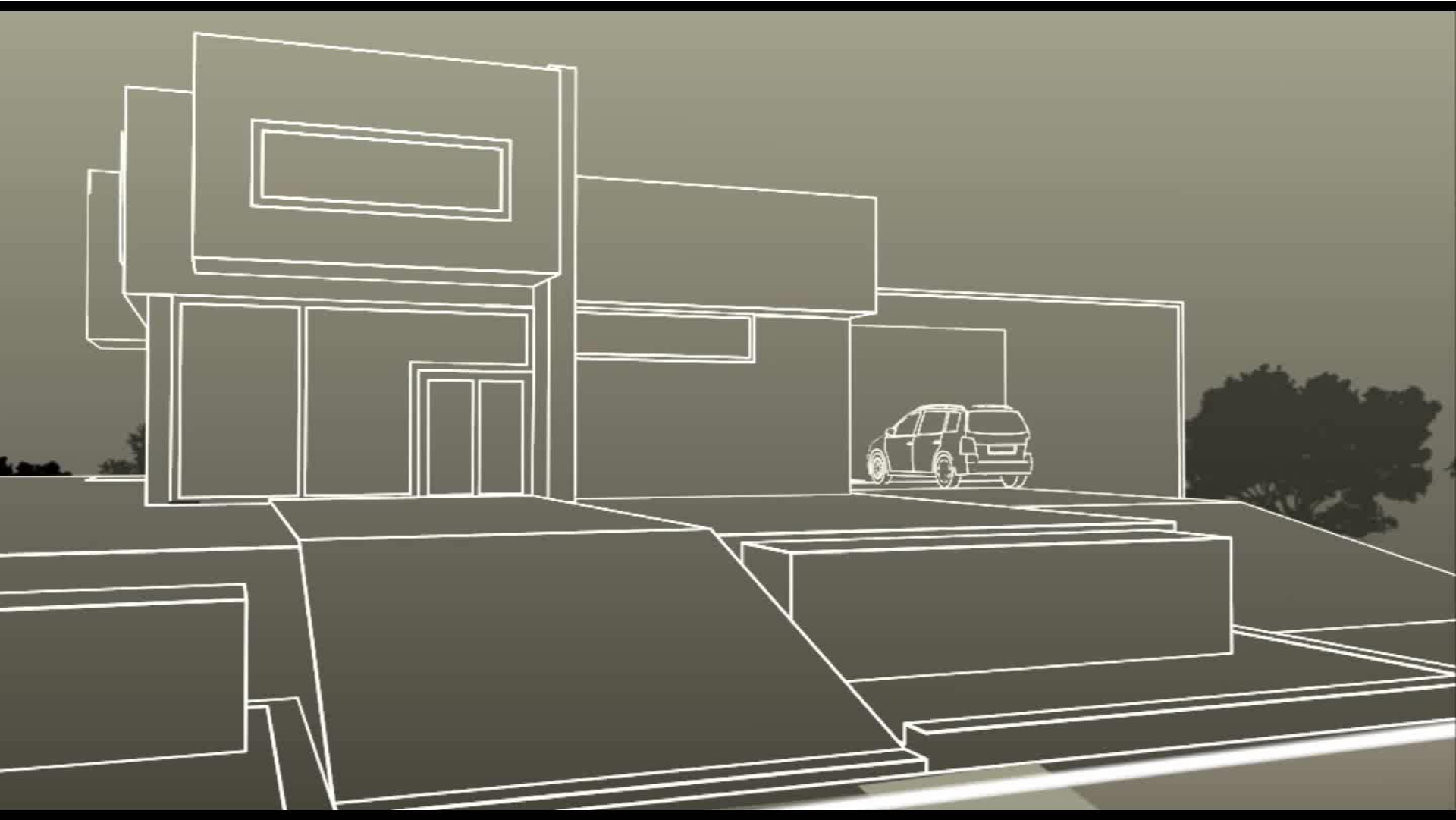
## **Overview of GSMA programme**

Ton Brand,

- 16.15      How can regulatory policy accelerate or impede market growth?**  
Jeanine Vos, mHealth Executive Director, Connected Living Programme
- 16.30      Ericsson Mobile Health Remote Patient Monitoring System**  
Peter Håkansson, Manager Sustainability Research, Ericsson
- 16.40      mHealth Demonstration – Vitality and Blue Libris Remote Monitoring**  
Clay Owen, AT&T, Senior Director of Communications
- 16.50      Ericsson cloud orchestration - ICT Solution for Connect to Learn**  
Paul Landers, Programme Manager, Ericsson
- 17.00      Planning For Data Growth: L-band Supplemental Downlink Spectrum Opportunity**  
Wassim Chourbaji, Senior Director Government Affairs, Qualcomm
- 17.15      Audience Q&A**

# Connected Living Programme structure





# More examples.....



## Connected House 2012



**Ministerial Tour, Wednesday between 11.00 and 12.00**

## **Global Revenues & Impact of the Connected Life**

# The Connected Life by 2020

2020

**24 Billion**

Total Connected  
Devices

2011

**9 Billion**

Total Connected  
Devices

2011

**6 Billion**

Mobile Connected Devices

2020

**12 Billion**

Mobile Connected  
Devices

Revenue Opportunity For  
Mobile Network Operators in 2020

**\$1.2  
Trillion**

7x increase on 2011 expected revenues

Revenue opportunity for connected devices in vertical  
sectors

Health

**\$69 Billion**

Automotive

**\$202 Billion**

Utilities

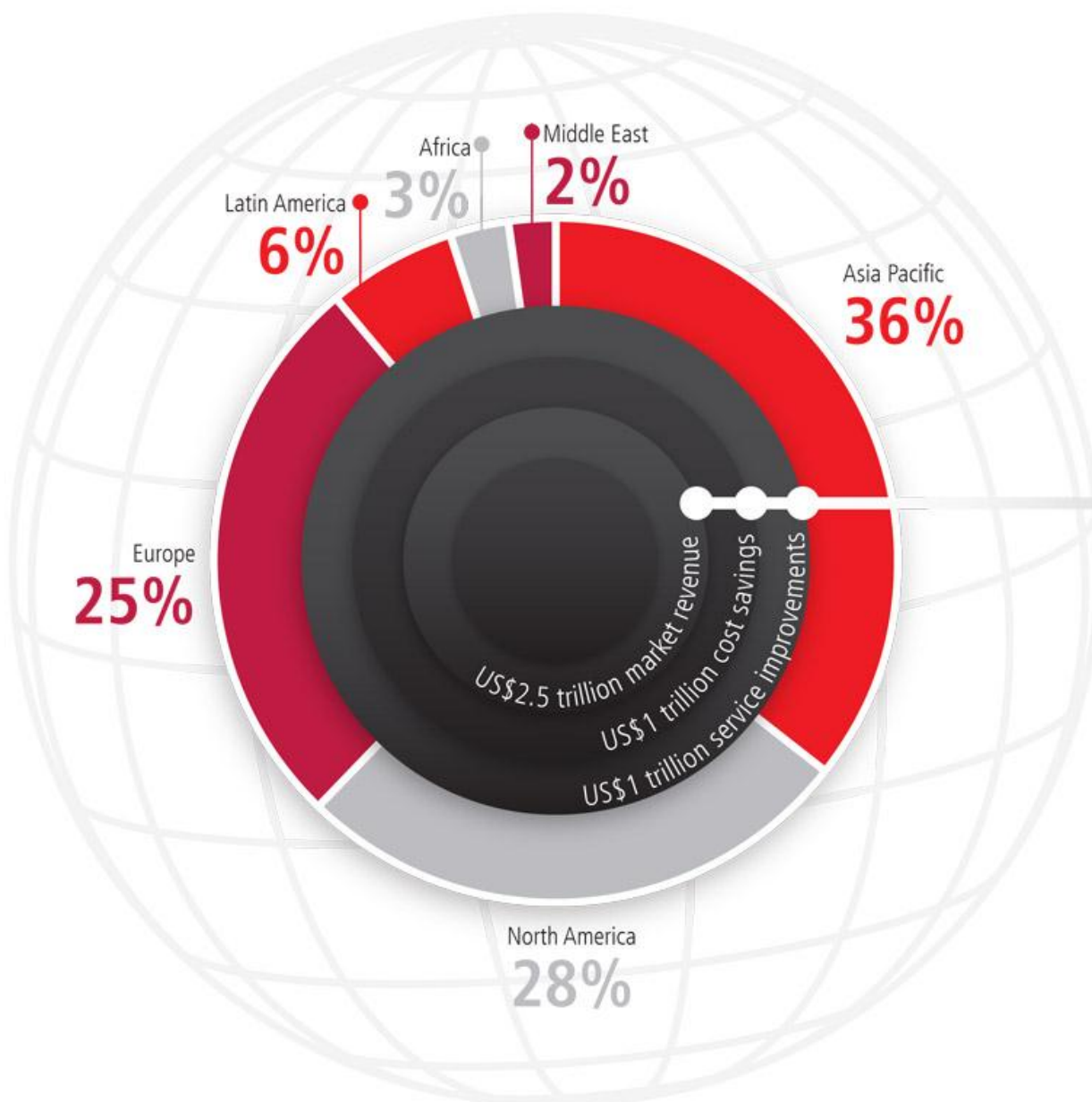
**\$36 Billion**

Consumer electronics

**\$445 Billion**







## Business Impact of the Connected Life 2020

# US\$4.5 trillion

Connected Life market revenue  
**US\$2.5 trillion**

- **US\$1.2 trillion** addressable by Mobile Network Operators

Cost savings resulting from Connected Life  
**US\$1 trillion**

Service improvements resulting from Connected Life  
**US\$1 trillion**

The Connected Life, with 24 billion connected devices projected by 2020, will create new revenue streams, business models and service improvements, and through industry collaboration can make a global business impact of US\$4.5 trillion.



# Programme Objectives



Accelerate the development of Connected Living services in agreed adjacent vertical markets

Stimulate trials, launches and demonstrations in Automotive Education and Health vertical markets

Stimulate operators to challenge the existing service awareness and roaming model to reflect vertical market requirements

Collect and publish market analysis and statistics on the global adoption of Connected Living

Stimulate cross industry collaboration

# Regulation can add value....



## Market Drivers

- Automotive
  - eCall Regulation (EU)
  - Stolen Vehicle Tracking
- Utilities
  - Smart Metering
  - Smart Grid developments
- Education
  - Governments are the biggest spenders on education worldwide
  - Developing regions will lead the growth

## Market Barriers

- Net Neutrality
  - Some services might requires higher SLA than others
- National SIM Card registration
  - Global market roll-outs, embedded SIM
- Privacy and Security
  - Not all devices requires same levels as consumer devices
- Numbering and addressing
  - Some devices do not require a MSISDN



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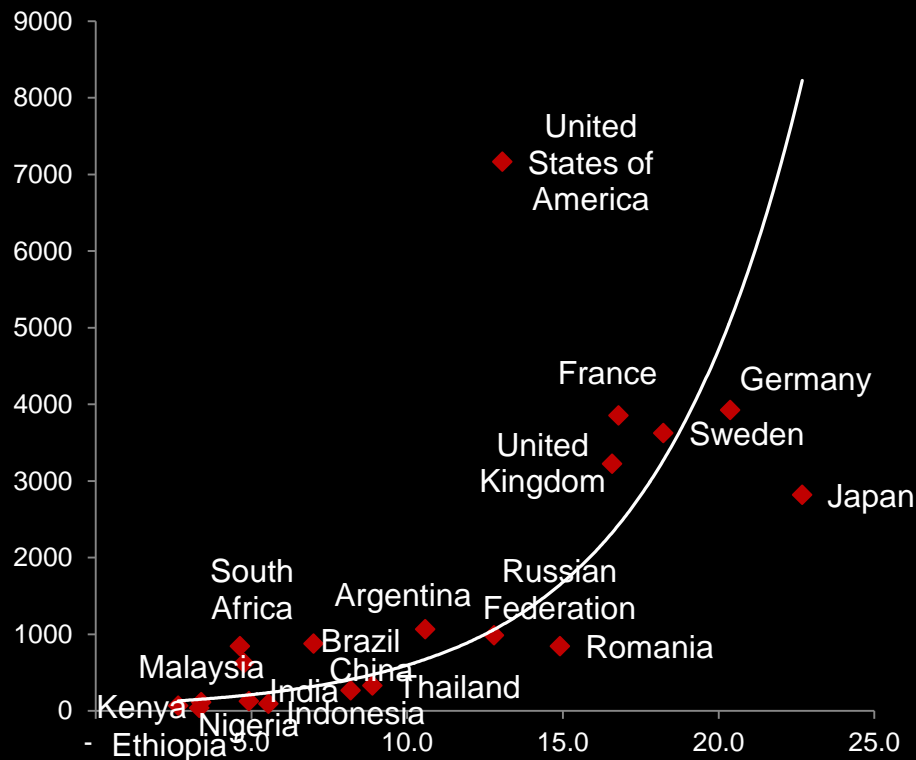
# Connected Living

Jeanine Vos  
Executive Director, mHealth  
Connected Living Programme  
Monday 27<sup>th</sup> February 2012

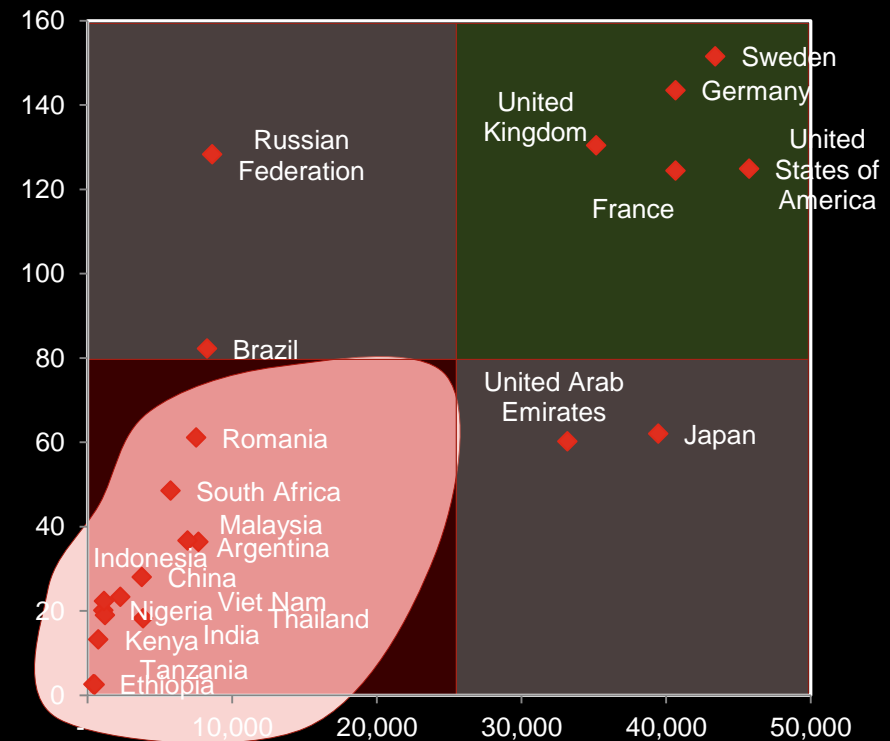


# Healthcare systems are under pressure

**Per Capita Health Expenditure (PPP Int. USD)  
and % of Population Aged above 65, 2009/2010**



**Number of Physicians, Nurses per 10,000  
population and GDP per Capita (USD) , 2010**



Source: WHO. The World Bank. OECD. PwC analysis

# Mobile provides ubiquitous technology platform



**Comparison of Penetrations of Improved Sanitation Facilities and Mobile Phones in Selected African and APAC Countries, 2014E**



Source: UN, PwC analysis

# To reduce costs, increase access, improve care

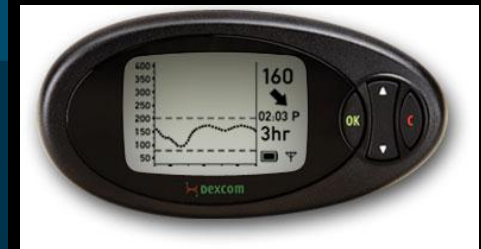
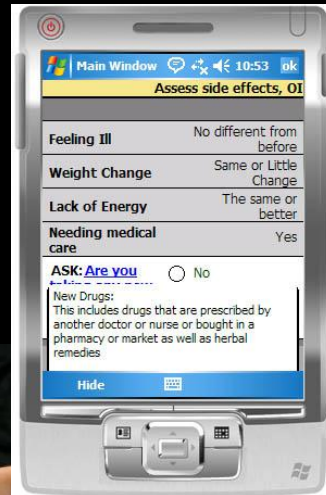


Prevention

Diagnosis

Treatment

Monitoring

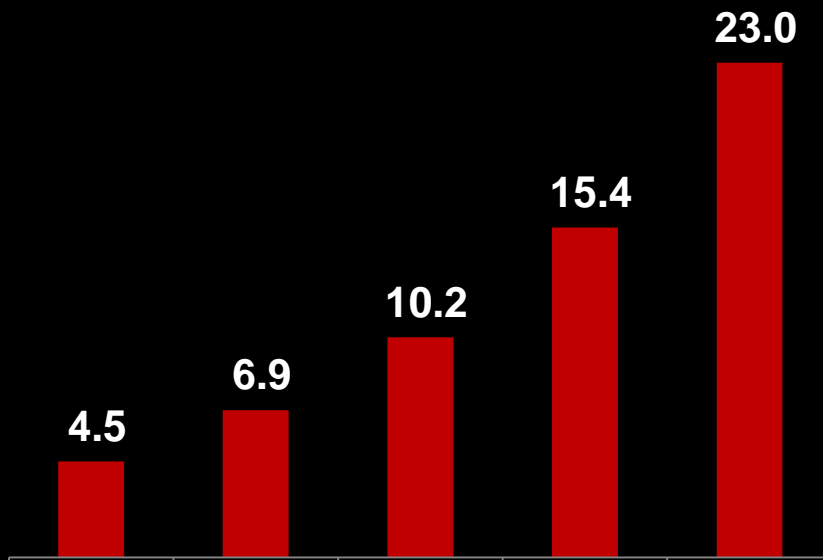




# Significant growth in mobile health is foreseen

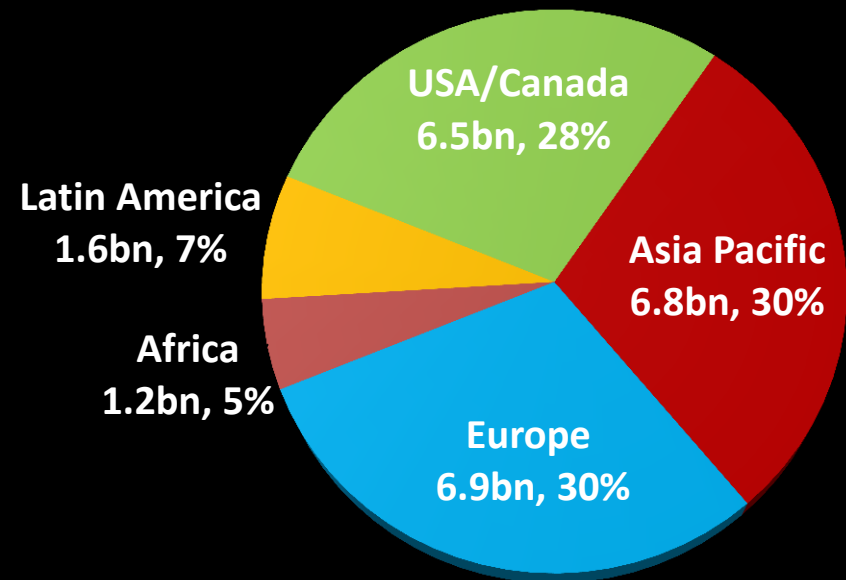


**Global Mobile Health Revenue,  
2013E-2017E, in USD billion**



Source: PwC analysis

**Mobile Health Revenue by Region,  
2017E, in USD Billion and % Share**



**BUT CAN ONLY BE REALISED WITH GOVERNMENT AND REGULATOR SUPPORT**

# Different motivations in healthcare and telecoms



Patient Centric

Safety first

Demonstrate efficacy

'At least, do no harm'



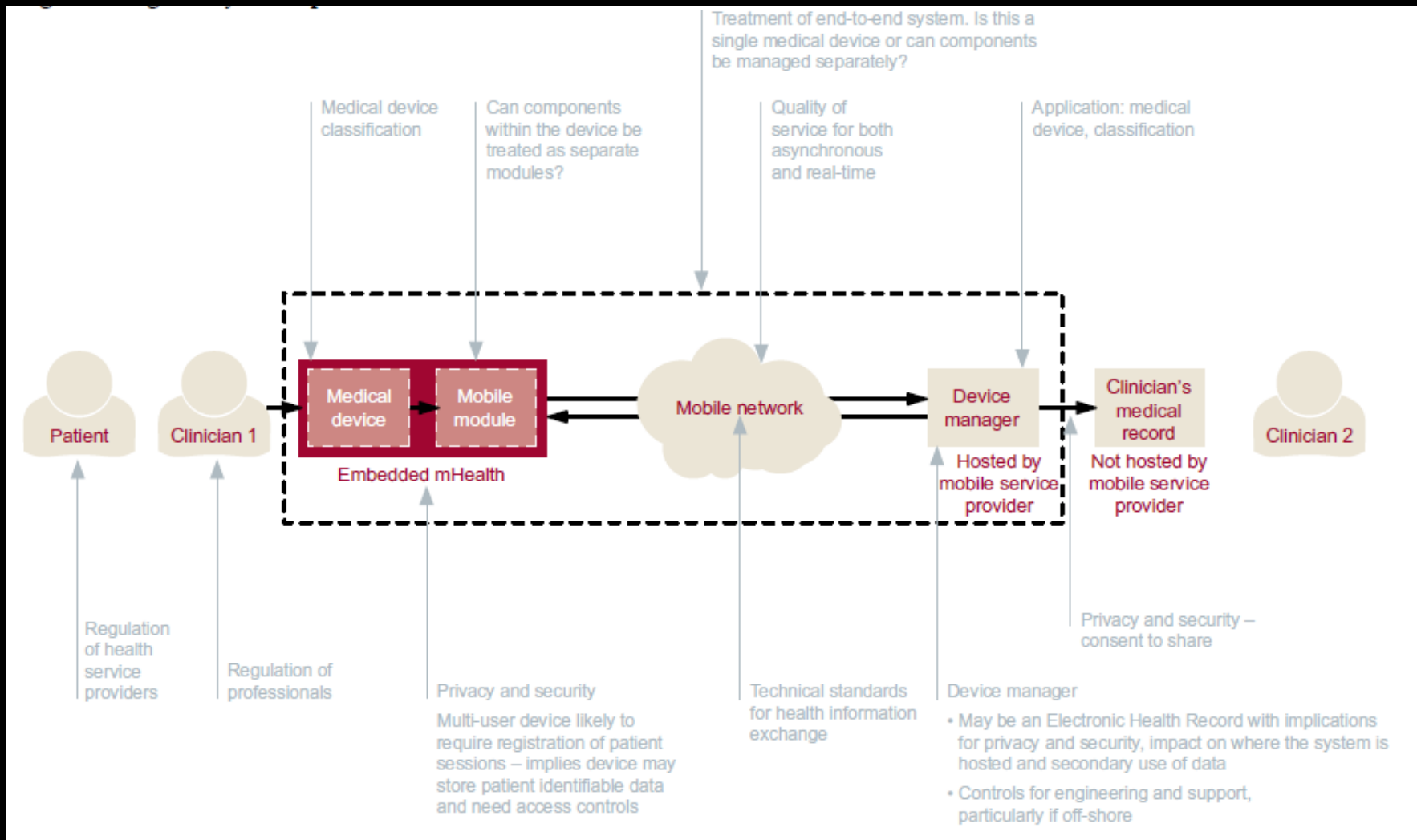
Market Centric

Maximize consumer value

Foster competition

'Just enough'

# Policy and regulatory touch points



# Ensuring safety and effectiveness



# Healthcare policies and regulation for growth



## Policy themes

### Patient empowerment

Develop policies that promote user autonomy, which will in turn drive mHealth adoption

### Reimbursement

Move towards reimbursement schemes that reward positive health outcomes and support the adoption of innovation

## Regulatory themes

### Devices

Introduce a proportionate approach to what constitutes a medical device and how it is classified

### Systems and interfaces

Promote interoperability and common standards to enable scale and plug-and-play experience

## Realising scalable and sustainable mobile health deployments



- Raise awareness of the benefits of mobile health
- Educate healthcare stakeholders on mobile capabilities
- Promote interoperability and common standards
- Provide spectrum for growth
- Support cross-industry initiatives





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# Ericsson Mobile Health Remote Patient Monitoring System

Peter Håkansson,  
Manager Sustainability Research,  
Ericsson



# Modern Healthcare systems

## - challenges and Pain points



### Healthcare mega trends

- Distributed healthcare
- Patient centric, personalized healthcare
- Higher demands from patients

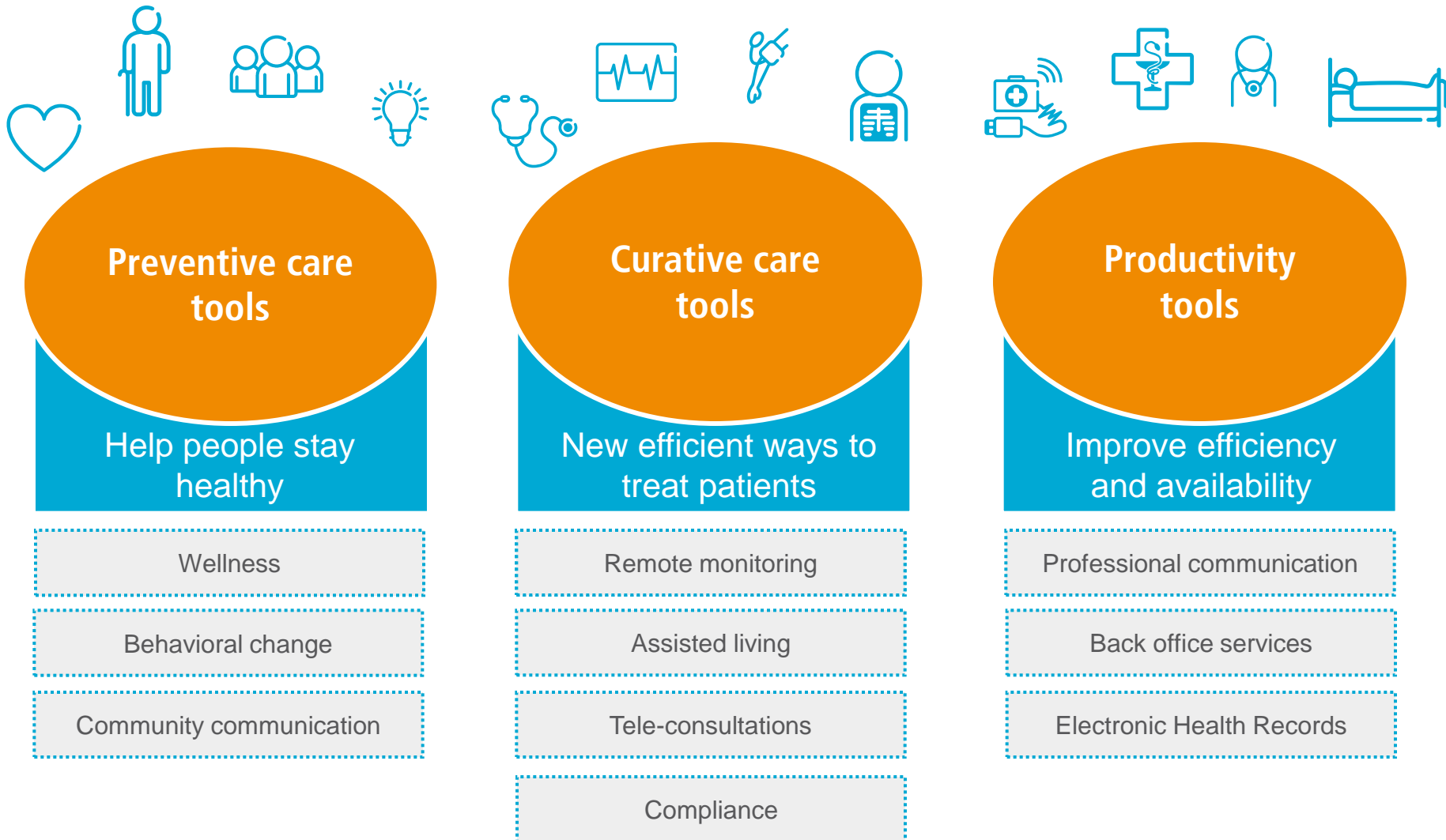
### mHealth is part of the solution

- Higher efficiency in care delivery
- Enabler for distributed care
- Mature technology

Mobile Health, mHealth is a term for medical and public health practice supported by mobile connected devices, such as mobile phones, patient monitoring devices, etc



# Market segmentation



# Ericsson Healthcare offerings

## -high level overview



### Health Information Systems

Health Information Exchange platforms that support healthcare delivery processes on national, regional or hospital level



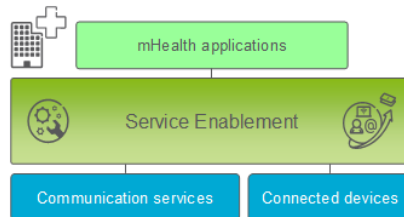
### Remote Patient Monitoring

EMH is a remote patient monitoring solution used for measurement and transfer of a patients vital signs



### Service Enablement for health

Sensor data and communication services aggregated, provisioned and exposed



### Communication services

Horizontal communication services such as BCS, voice and SMS to be adapted and used in telehealth applications



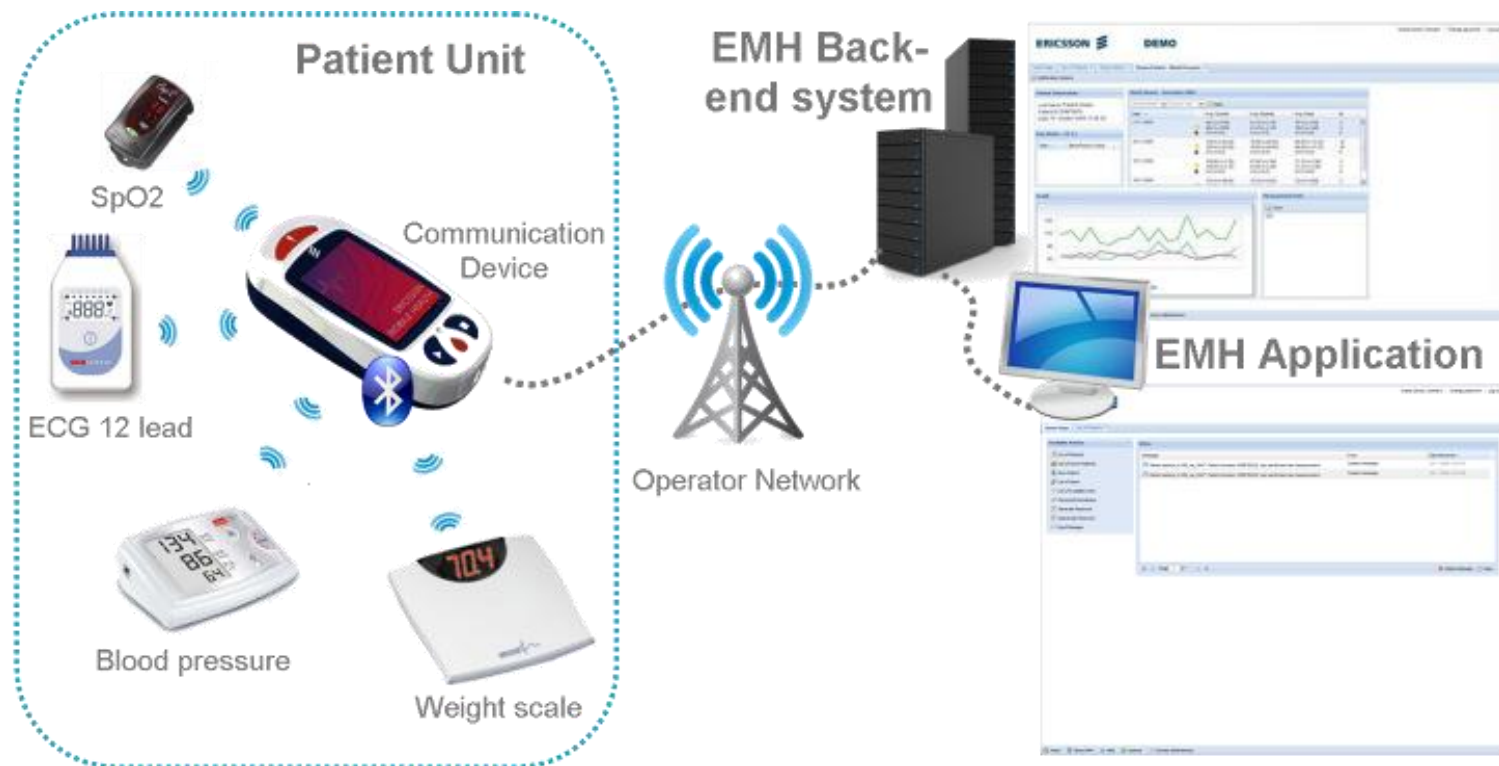
Ericsson has both horizontal and health specific solutions for the healthcare market.  
Mainly indirect market channels like through operators and other enterprises

# Ericsson Mobile Health

## Remote monitoring using mobile networks

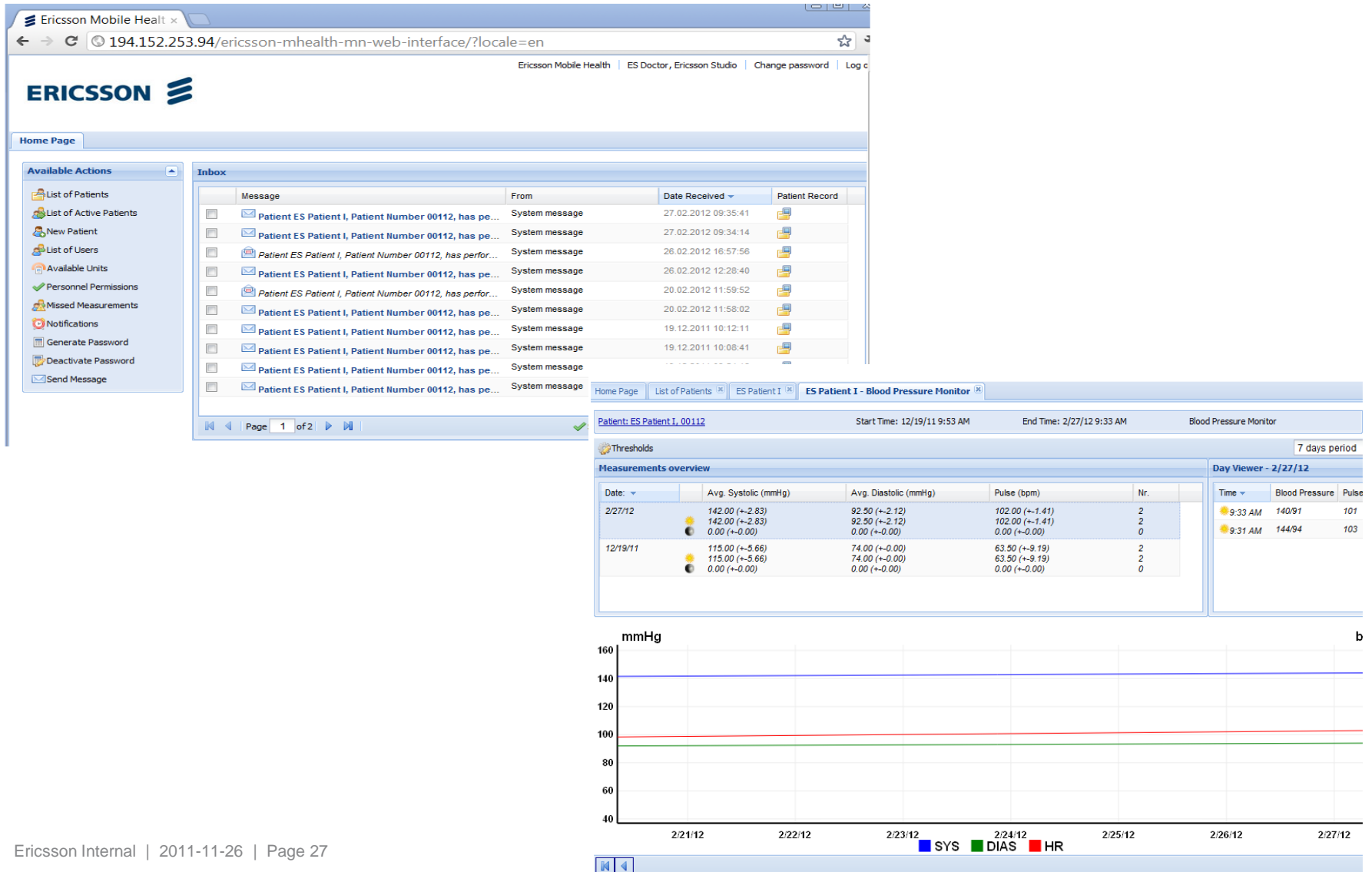


- › Ericsson Mobile Health (EMH 3.0)
- › *Remote monitoring system that is measuring body values and transmitting the data over mobile networks from patients to healthcare providers*

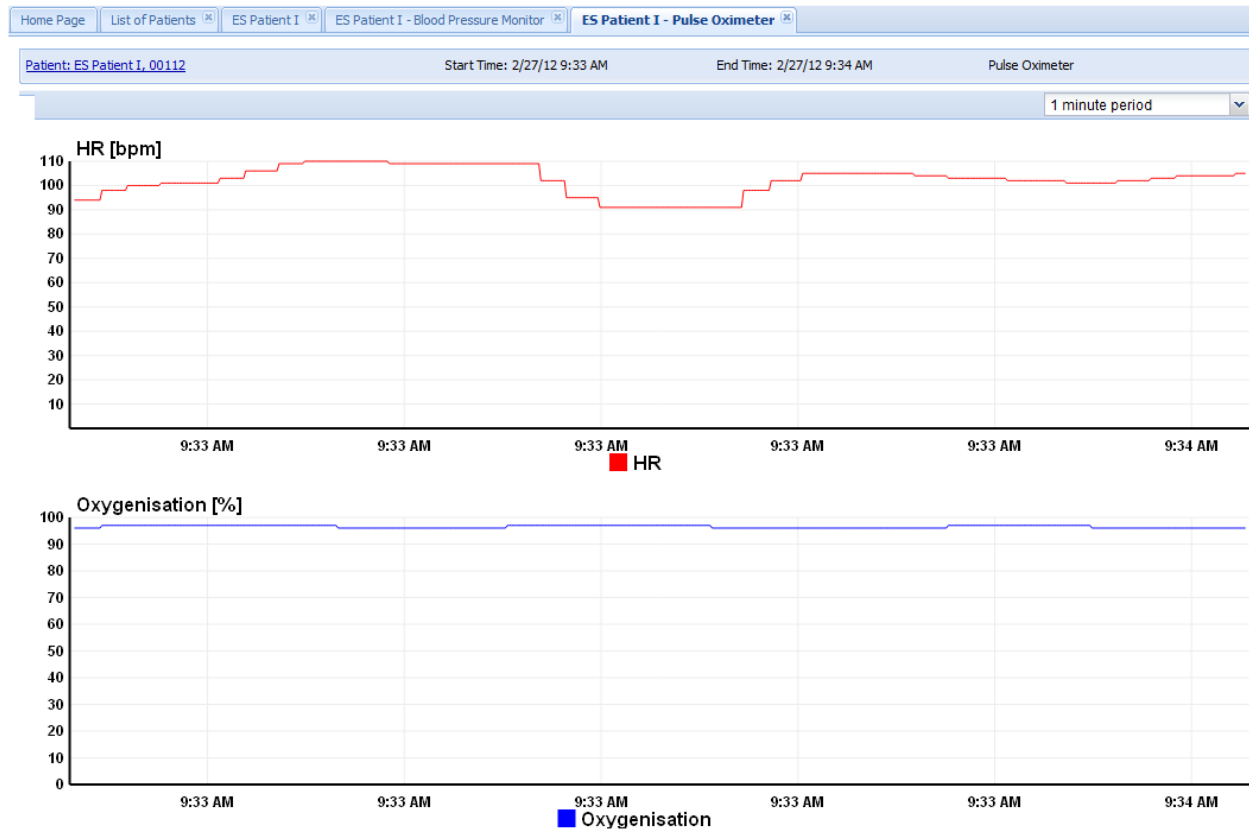




# Web interface



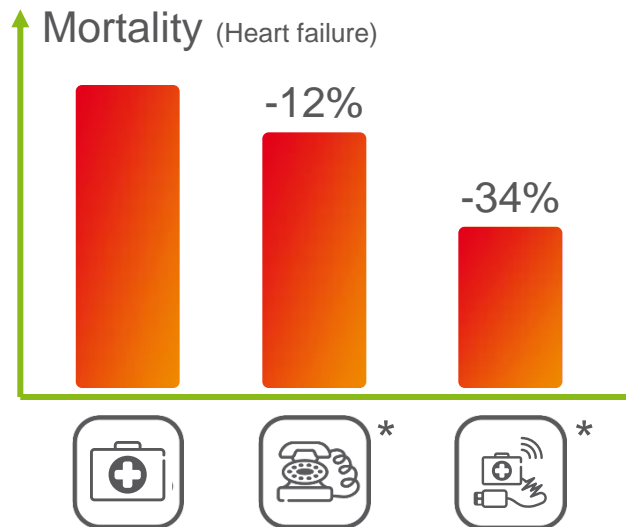
# Web interface



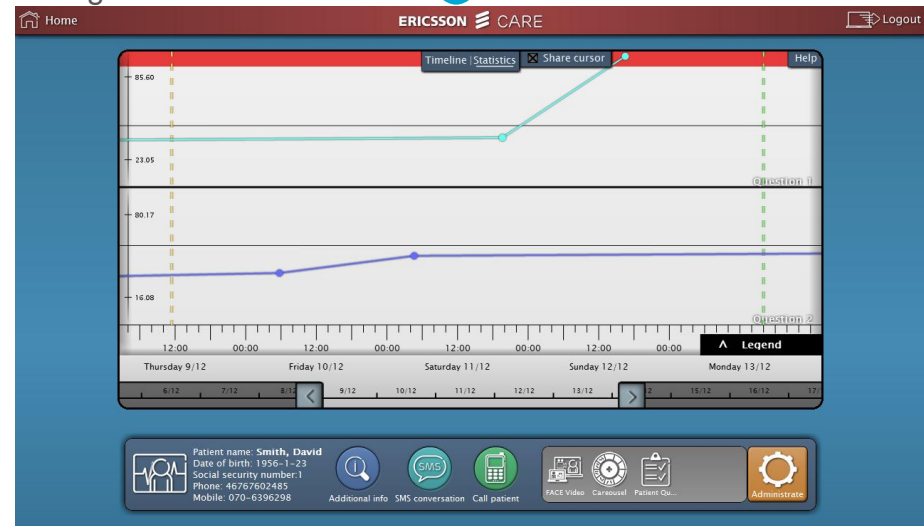
# Health Service Integration

## › The mHealth integration challenge:

- mHealth systems uses often proprietary communication interfaces and protocols
- This complicates for a caregiver to get a useful overview of data for a patient using multiple systems



## Caregiver view



# Use Case Example

## High Risk Heart Failure patients

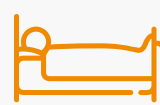
### Treatment components



›Lifestyle changes



›Medication



›Hospital care



›mHealth



**mHealth objective:** early detection of medical complications by home monitoring and regular communication



›Measurement of weight, heart rate and blood pressure (daily)



›ECG measurement (when required)



›Subjective data gathering

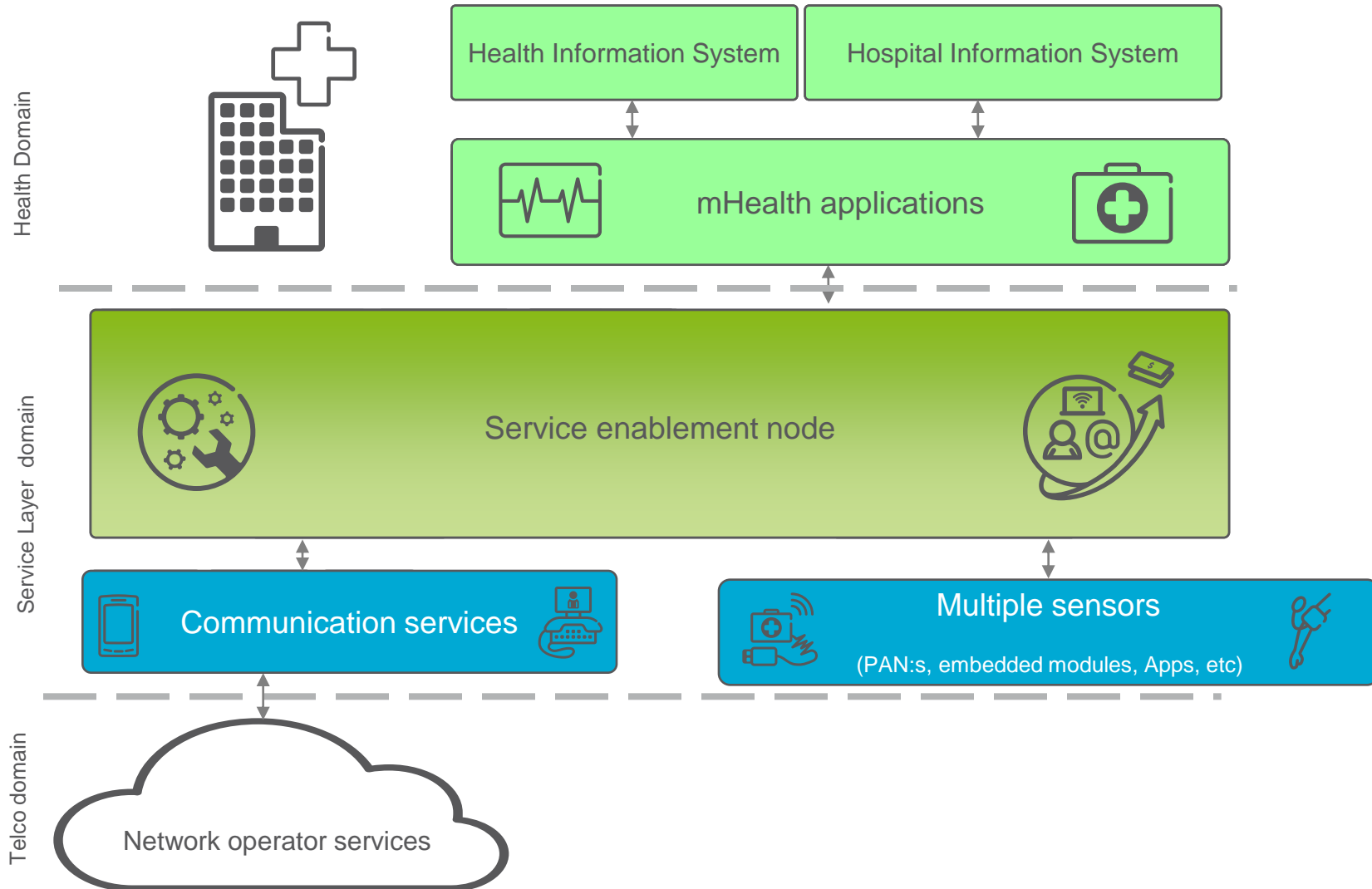


›Medication compliance monitoring + reminders



› Patient communication (phone or videoconference)

# Target Architecture, Ericsson Health & Service Enablement





# Thank you!

[peter.hakansson@ericsson.com](mailto:peter.hakansson@ericsson.com)





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# AT&T Emerging Devices

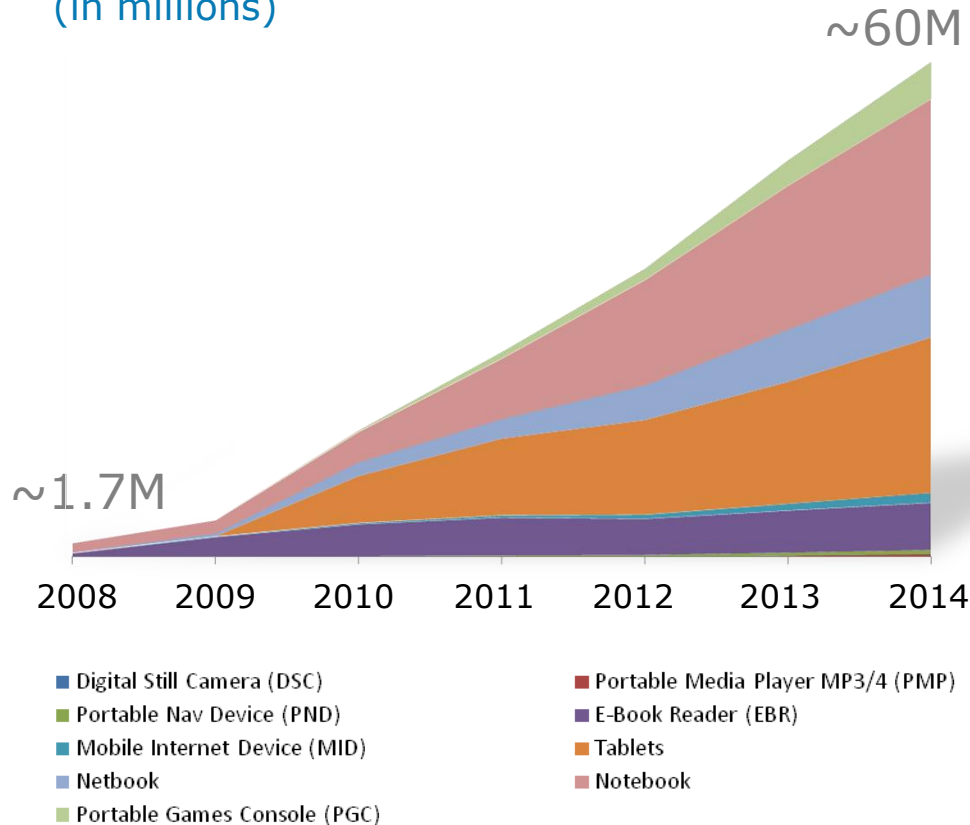
Clay Owen,  
Director of Communications,  
AT&T

STC  
الاتصالات السعودية



# Rapid Growth of Connected Devices

## U.S. Sales of WWAN Embedded Portable CE Devices (in millions)



\*Source: Strategy Analytics, WAN Enabled CE Devices US Market Forecast, Sept. 2010

Our vision is that by 2020, we will have **50 billion connected devices**



- Ericsson CEO, Mar 2010

There will be **1 trillion devices connected** to the Internet by 2013

- Cisco CTO, Mar 2010

**20 Billion connected devices** by 2020

telecomseurope.net, Feb 2010

Available market for embedded CE devices is projected to grow at a **41% compound annual growth rate (CAGR)** in the US, through 2014.

- Strategy Analytics, Sep 2010



# A New Generation of Connected Devices



# 2010-2011 Contracts and Launches



- Acer AS1830T notebook
- Acer AO532h netbook
- Amazon Kindle 3G with Special Offers
- Amazon Kindle 3G Touch
- American Security Logistics Pallet Tracker
- Apple iPad 3G
- Apple iPad2
- Automotive – Ford
- Dell Inspiron 1012 Mini 10
- Garmin GTU-10 - Tracking Device
- Garmin GDL40 - marine navigation device
- Garmin 1695 Connected PND
- Healthcare –
  - Exmovere – Connected Baby PJs
  - BlueLibris – mobile health and safety monitoring

- Zephyr - connected Bio-Harness
- Amber Alert GPS
- Vitality GloCaps
- Isabella Vizit Photo Frame
- PanDigital Photo Frame
- Sony PlayStation Vita
- Sony Reader (Gen2)
- Tablets –
  - Samsung 8.9" Tab P5
  - Acer Iconia
  - HTC Jetstream
- TVtextbook



# Flexible Business Models



## Providing Options to Meet **Customer Demand**



### **Wholesale Data**

*Amazon Kindle*

- Transport included with the book
- No subscription
- No device subsidy
- No connection between customer and carrier



### **Prepaid Data**

*Apple iPad*

- Buy monthly 3G sessions as needed
- No contract
- No device subsidy
- Carrier distributes and connects with AT&T experience



### **Postpaid Data**

*Samsung Galaxy Tab 8.9*

- Subsidized device
- 2-year contract
- 5 GB data per month
- Direct customer relationship with AT&T





# What's going to be big in 2012...

# 2012 – New Opportunities for Growth



## Automotive

### Ford Focus EV

- Remote start
- Search for charging stations
- Stream content



## Computing

### Tablet Proliferation

- New options to meet evolving needs (entry level, laptop replacement)
- Leverage LTE networks for optimal streaming experience



## Healthcare

### Zephyr Bioharness

- Remote monitoring of human performance
- Enables capture of vital signs – heart rate, breathing rate, skin temperature, etc.
- Transmits data over the network to electronic health records and applications



## Gaming

### Sony Vita

- Mobile game downloads
- Multi-player connectivity anywhere
- Augmented reality experiences







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*connect to learn*

# Ericsson cloud orchestration - ICT Solution for Connect to Learn

Paul Landers,  
Programme Manager,  
Ericsson



# CONNECT TO LEARN



**70% of African girls don't get a secondary education.**

**When a girl is educated, she can earn 25% more income, 90% of which she'll invest in her family and community.**





# CONNECT TO LEARN PROVIDES

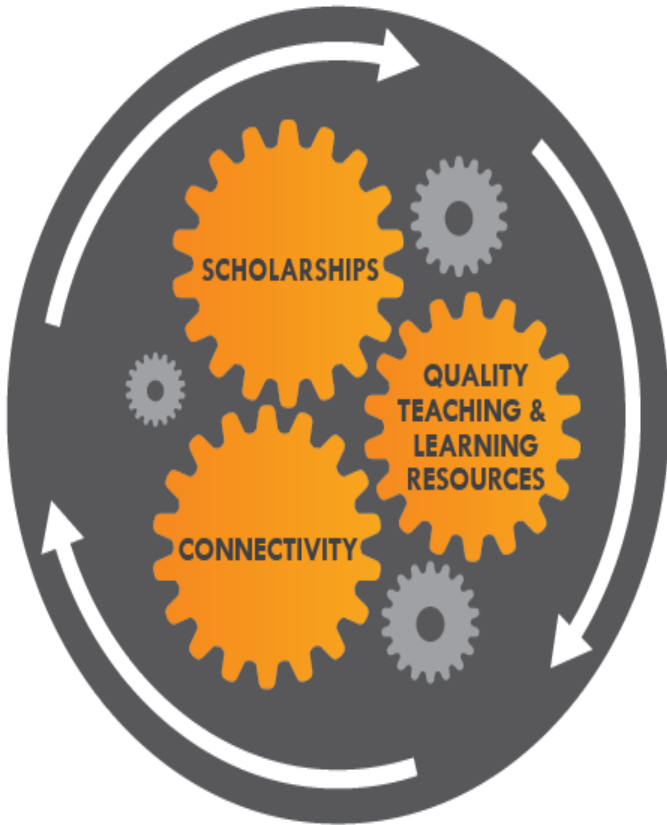


Access to  
secondary  
education  
through  
scholarships

Quality learning  
resources  
through  
broadband  
connectivity

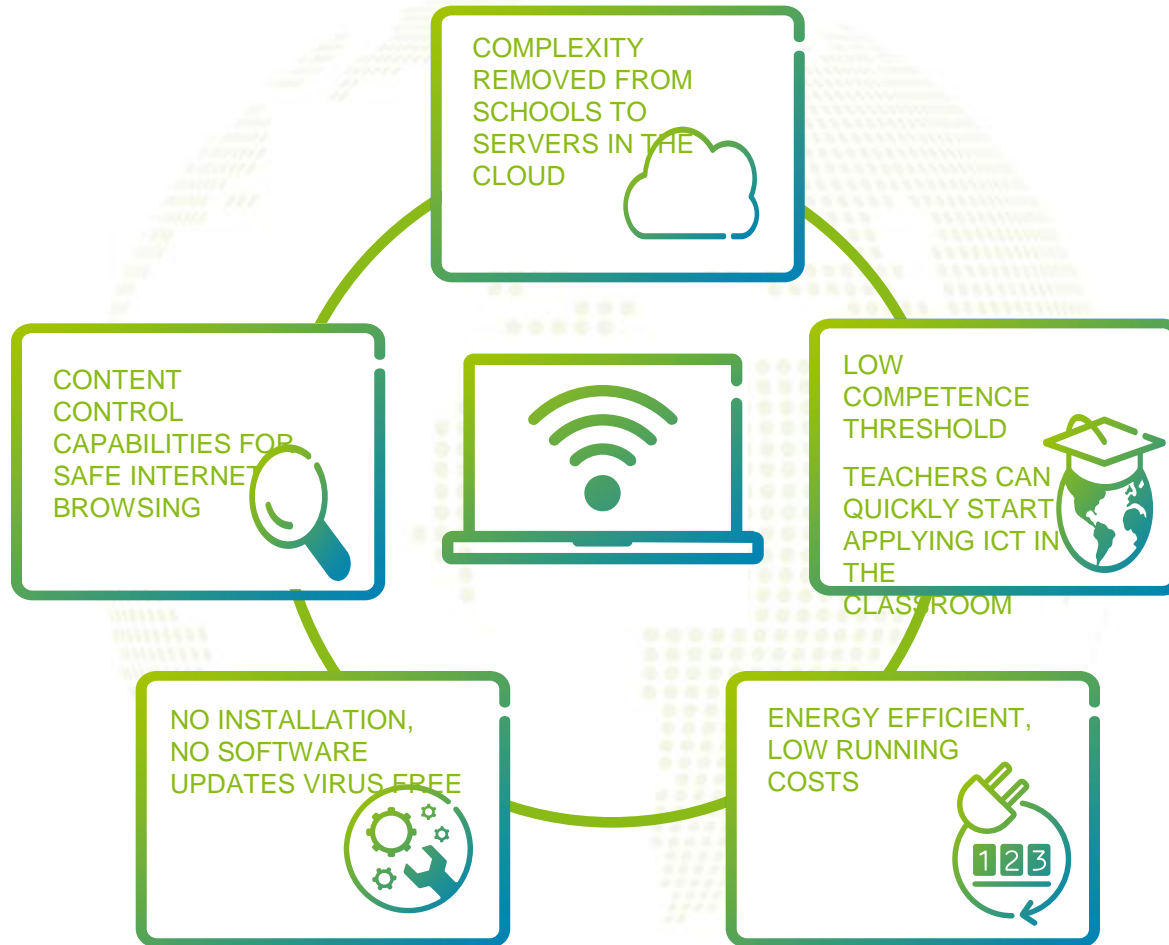
A global  
advocacy  
platform for the  
importance of  
girls' education

# ACCESS TO QUALITY LEARNING





# SIMPLICITY WITH CLOUD SERVICES



# THIS IS EDUCATION-IN-THE CLOUD



Access  
Device:  
Laptop/Tablet  
etc

+



Education  
apps and  
support from  
the cloud

+



Connected  
schools  
(MBB)

=



21st century  
learning  
solution

- › **Simple, manageable & safe** for students
- › **Cost-effective, scalable** accurate **usage information** for schools

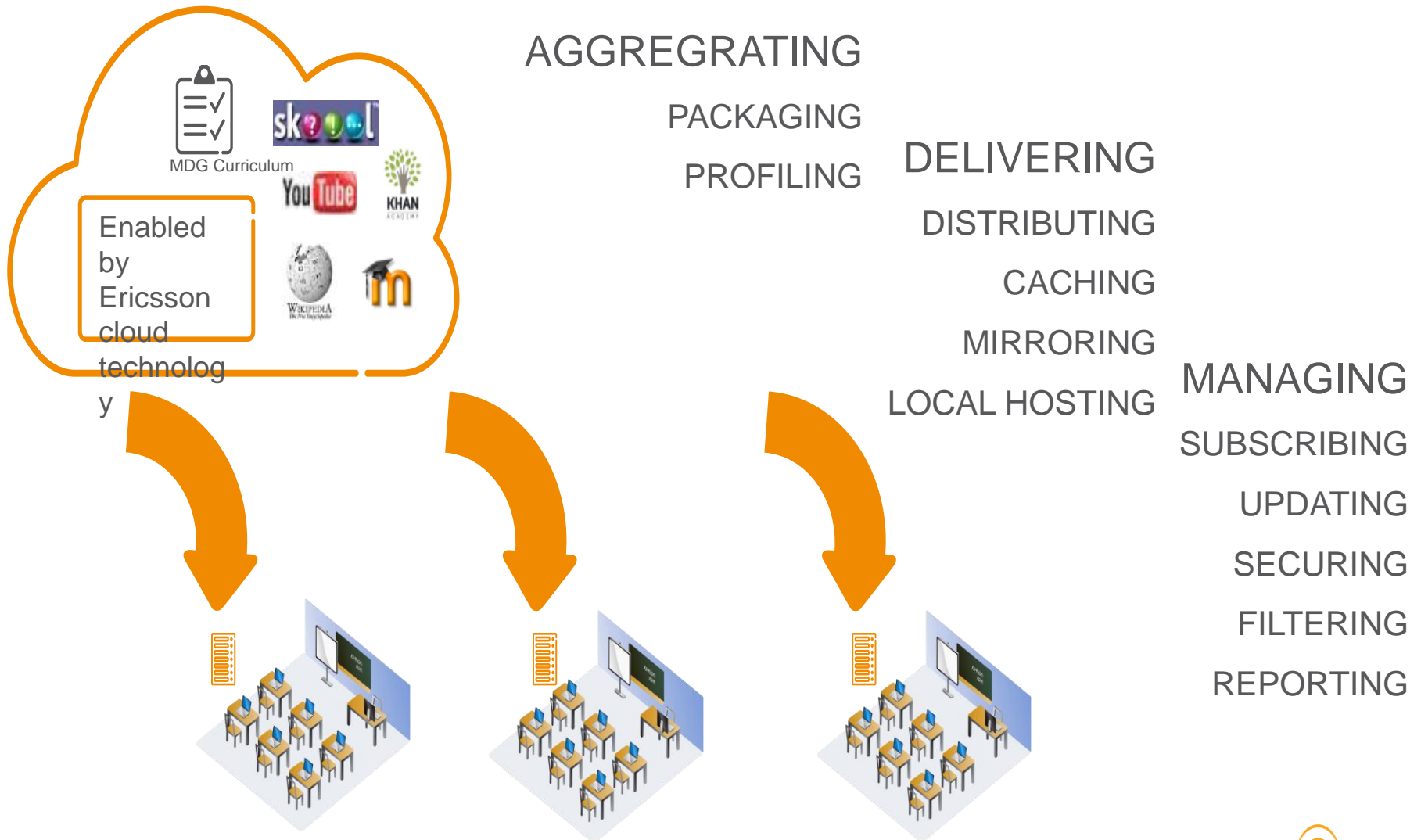
# SCHOOL TO SCHOOL CONNECTIONS



School-To-School Connections Programs connect teachers to teachers and students to students for shared learning experiences and cultural exchange



# CONTENT SERVICES





# MONITORING & EVALUATION



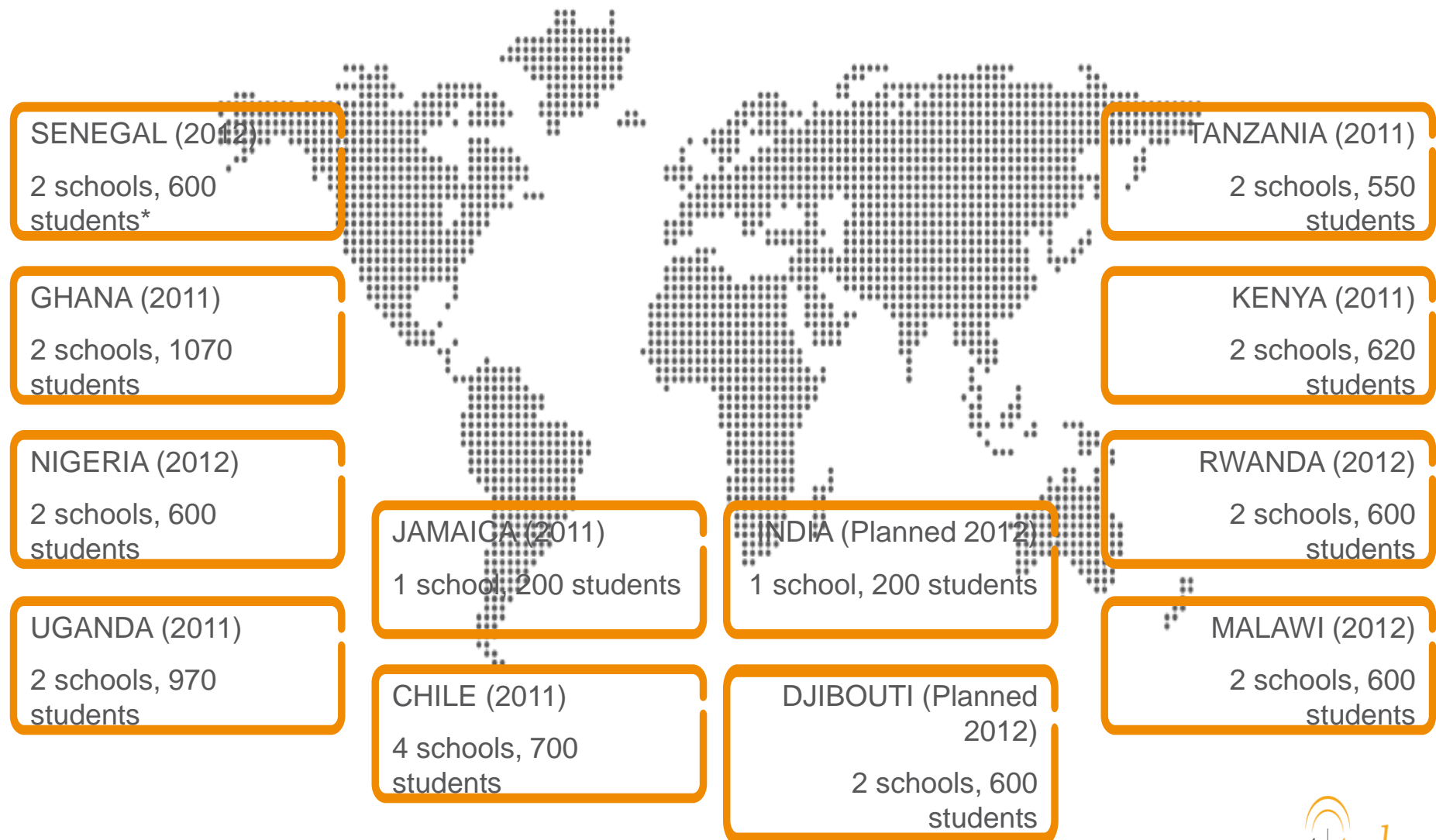
**Baseline for  
monitoring and  
evaluation  
across all  
global sites**

**Common  
methodology for  
implementation  
of M&E activities**

**Focus on socio-  
economic  
factors and  
business factors**



# GLOBAL DEPLOYMENT





# MOBILE BROADBAND MAKES IT POSSIBLE



By 2016 there will be 5 billion mobile broadband subscriptions

Broadband connectivity in schools provides access to quality resources

ICT partners support by enabling mobile broadband connectivity in schools

# FOUNDING PARTNERS



EDUCATE A GIRL. CHANGE THE WORLD.

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THE EARTH INSTITUTE  
COLUMBIA UNIVERSITY  
*Scientific Advisor*





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# Planning For Data Growth: L-band Supplemental Downlink Spectrum Opportunity

Wassim Chourbaji,  
Senior Director Government Affairs,  
Qualcomm







# Data Traffic Growth By 2015



MOBILE DATA  
TRAFFIC GREW

**>2x**

IN 2010

AND IS PROJECTED  
TO GROW

**10–12x**

FROM 2010–2015



# Current Efforts to Meet Growing Data Demand

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SPECTRUM

NETWORK OFFLOAD

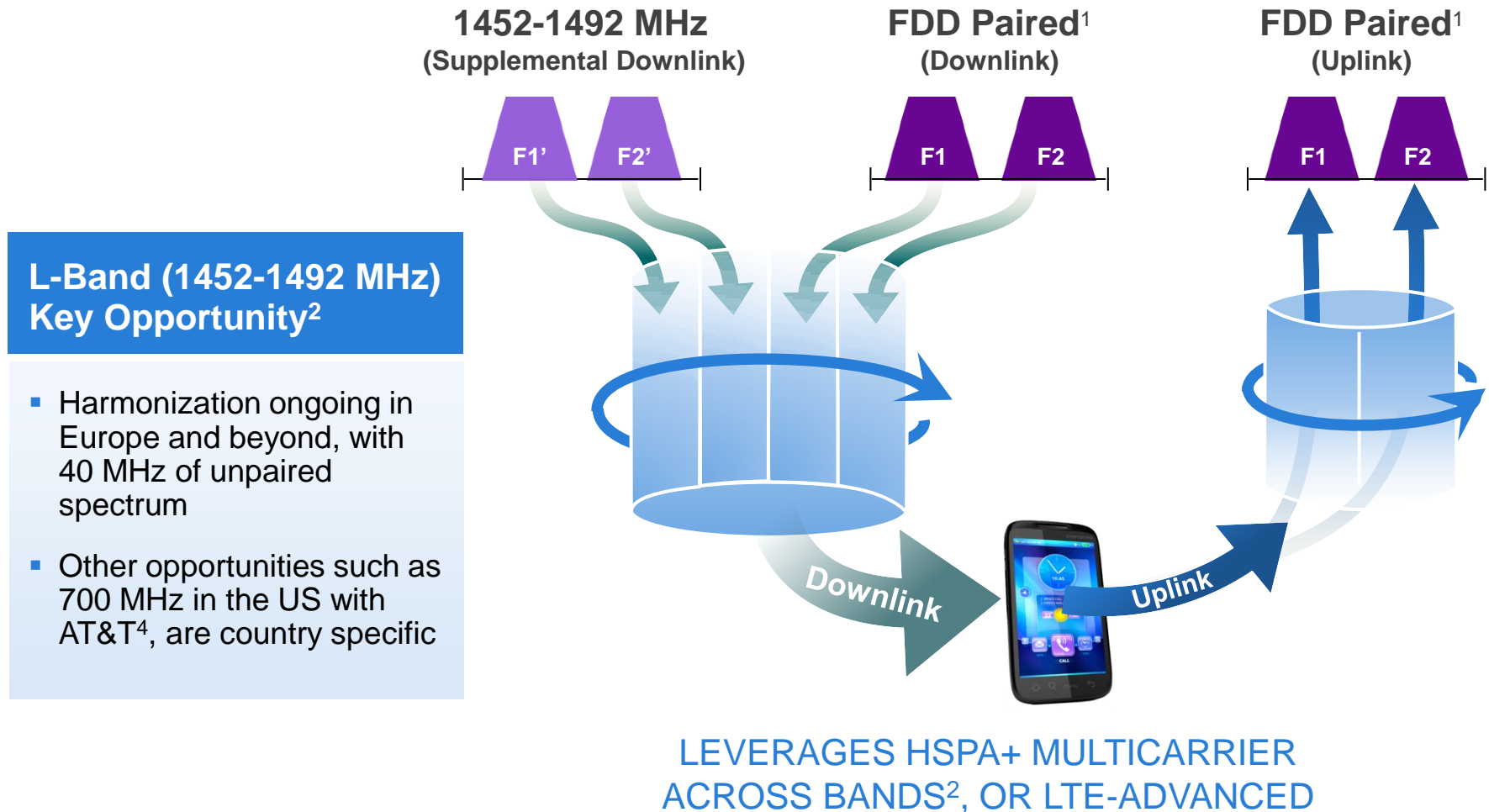
NEW TECHNIQUES

HETNETS





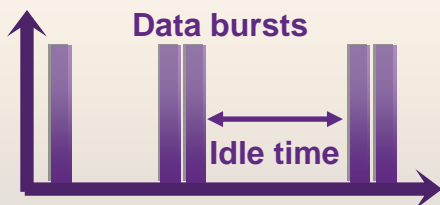
# Spectrum Opportunity — L-band Supplemental Downlink (SDL)



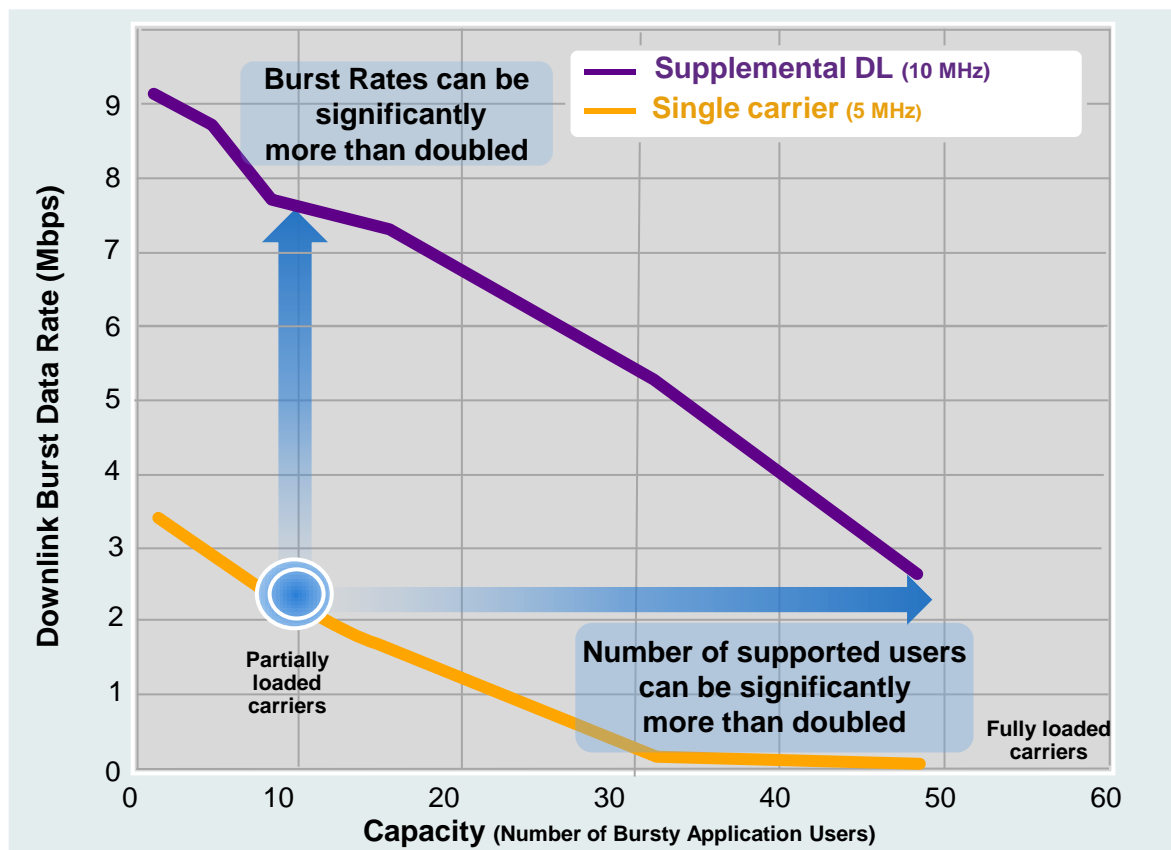
<sup>1</sup>e.g. 800 MHz, 1800 MHz or 2.1 GHz. <sup>2</sup>HSPA+ aggregation across bands already supported in 3GPP R9, but each additional band combination has to be defined in 3GPP. LTE Advanced (3GPP R10) introduces carrier aggregation. <sup>3</sup>L-Band 1452 MHz to 1492 MHz. <sup>4</sup>AT&T is planning to deploy supplemental downlink in lower 700 MHz

# L-Band SDL Enables Faster Downloads, More Users & Enhances the User Experience

## Bursty Data Applications

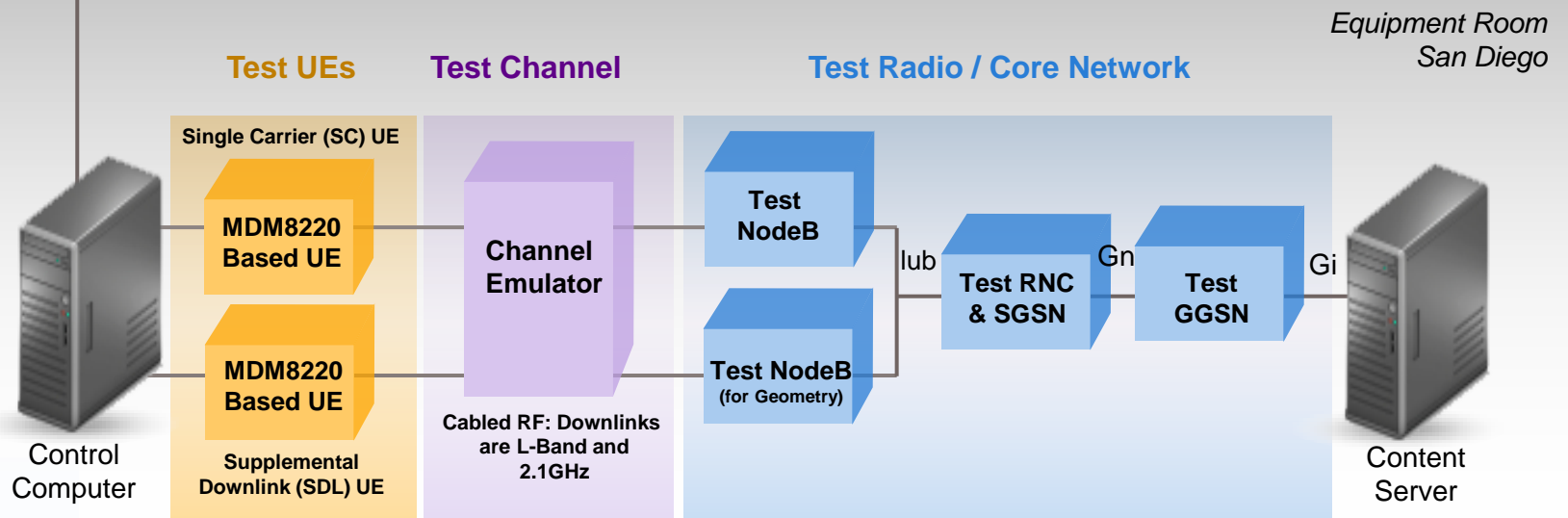


## More than Double the Performance with Supplemental DL (HSPA+ R9) configuration



# L-Band SDL Live Demo With HSPA+

MWC  
Barcelona





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**Thank you**  
[connectedliving@gsm.org](mailto:connectedliving@gsm.org)

