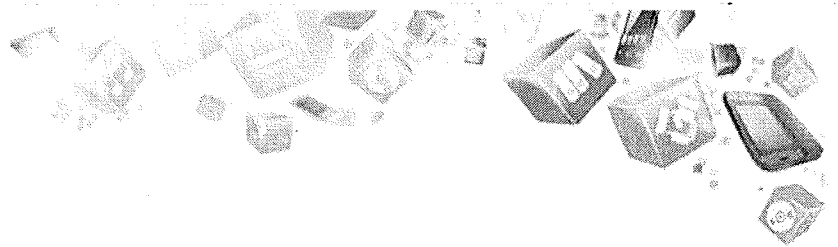




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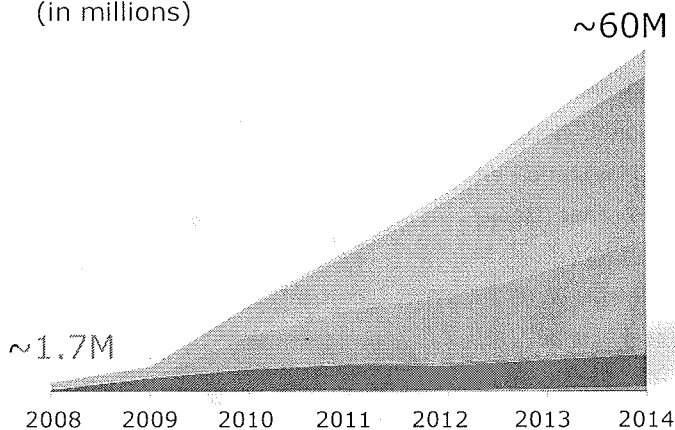
AT&T Emerging Devices

Clay Owen,
Director of Communications,
AT&T



Rapid Growth of Connected Devices

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



- Digital Still Camera (DSC)
- Portable Nav Device (PND)
- Mobile Internet Device (MID)
- Netbook
- Portable Games Console (PGC)
- Portable Media Player MP3/4 (PMP)
- E-Book Reader (EBR)
- Tablets
- Notebook

*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

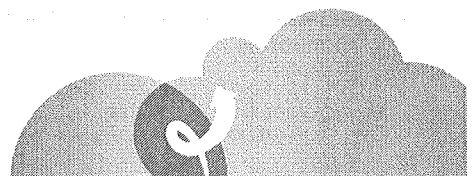
- Cisco CTO, Mar 2010

20 Billion connected devices by 2020

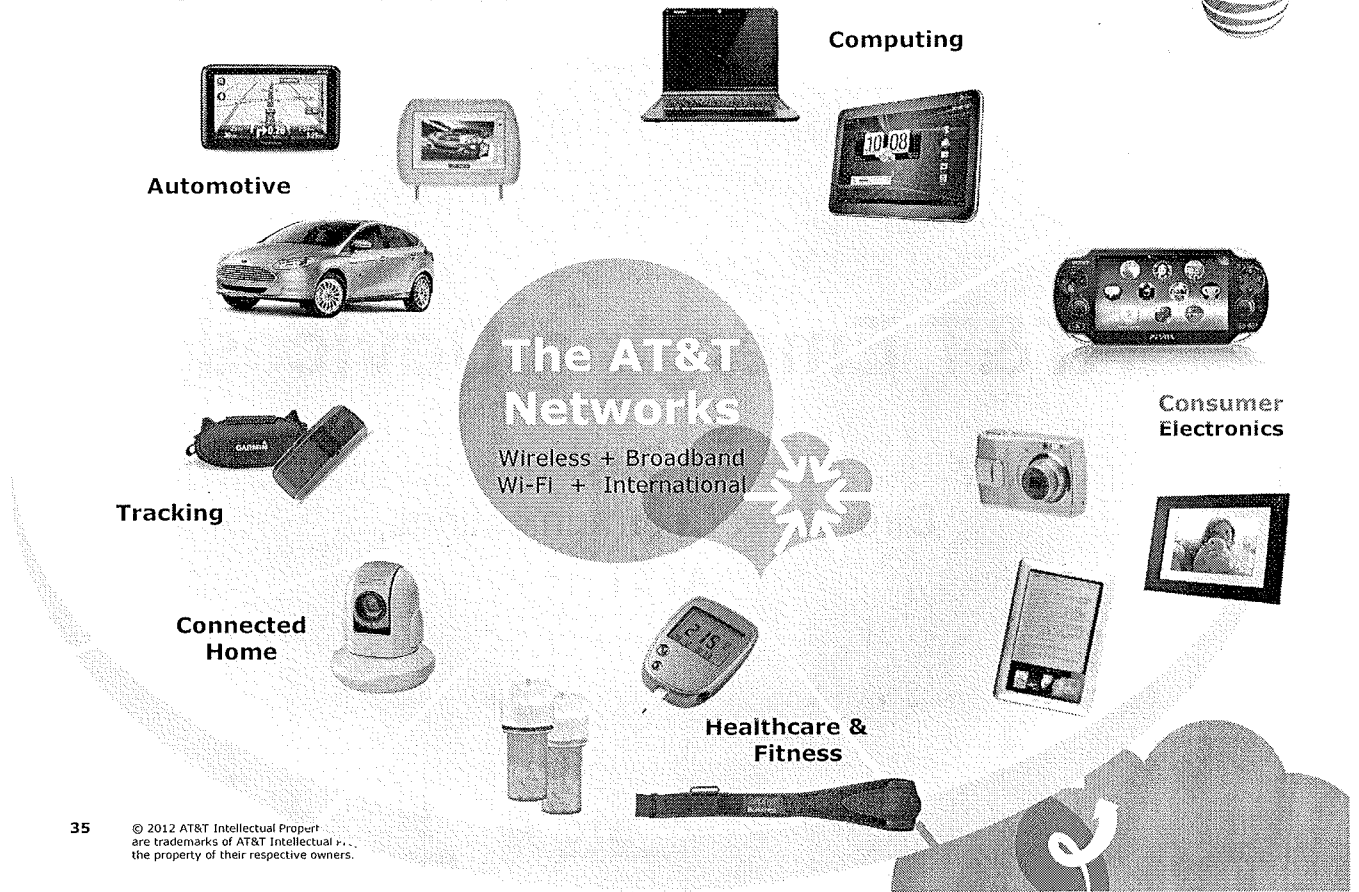
telecomseurope.net, Feb 2010

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



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2010-2011 Contracts and Launches



- Acer AS1830T notebook
- Acer A0532h 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**



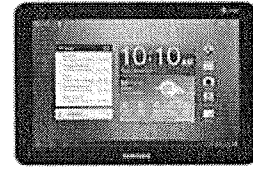
Wholesale Data *Amazon Kindle*

- 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

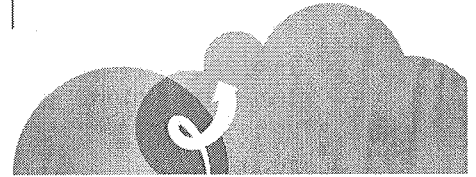


Postpaid Data *Samsung Galaxy Tab 8.9*

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

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

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2012 – New Opportunities for Growth



Automotive

Ford Focus EV

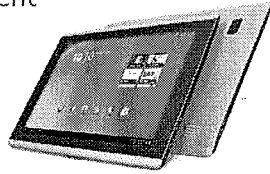
- Remote start
- Search for charging stations
- Stream content



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



Computing

Tablet Proliferation

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



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

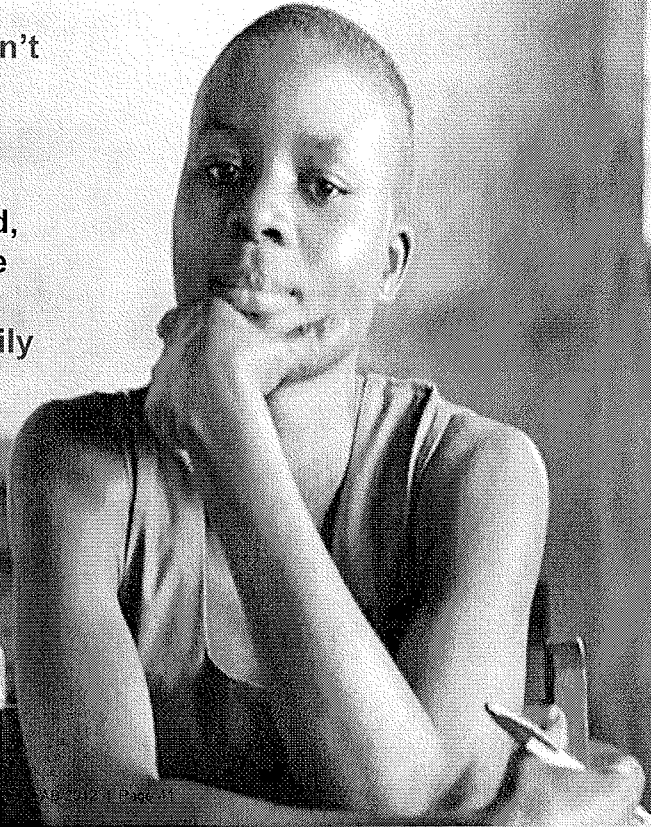
Paul Landers,
Programme Manager,
Ericsson



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.



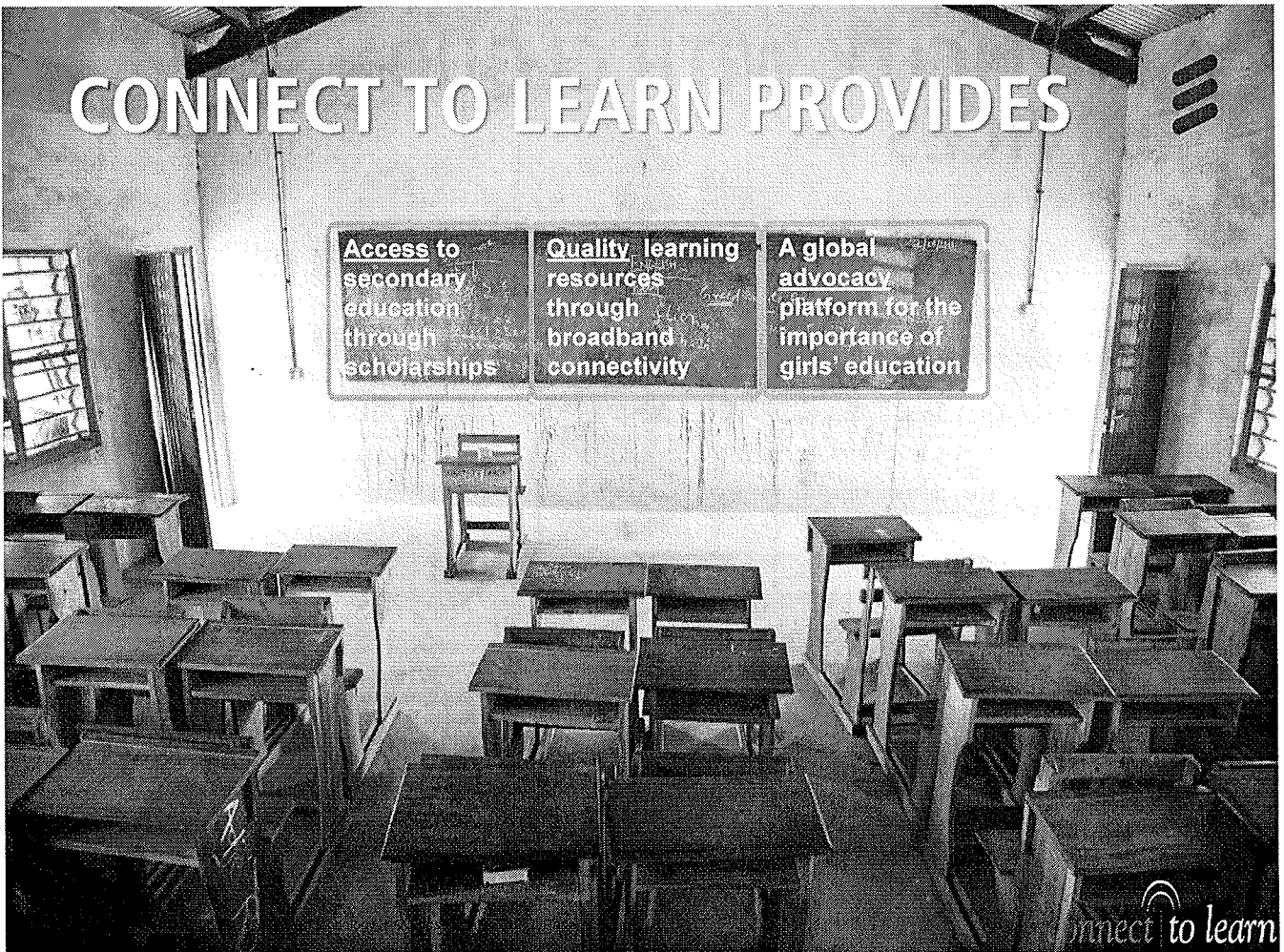
connect to learn

CONNECT TO LEARN PROVIDES

Access to secondary education through scholarships

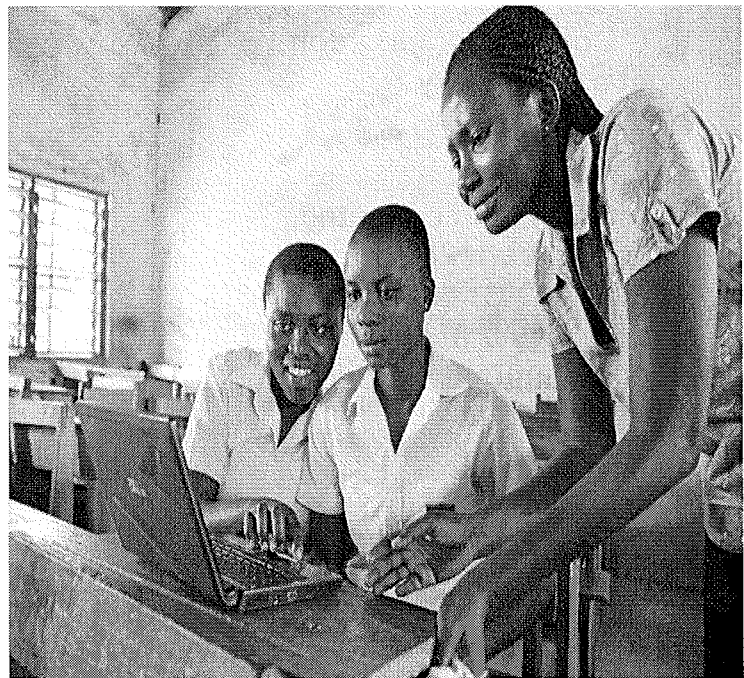
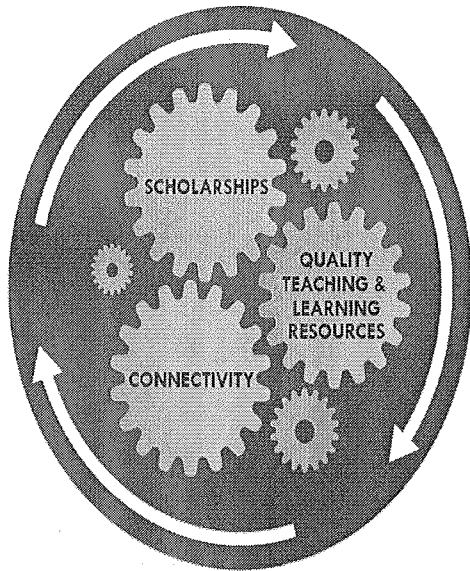
Quality learning resources through broadband connectivity

A global advocacy platform for the importance of girls' education

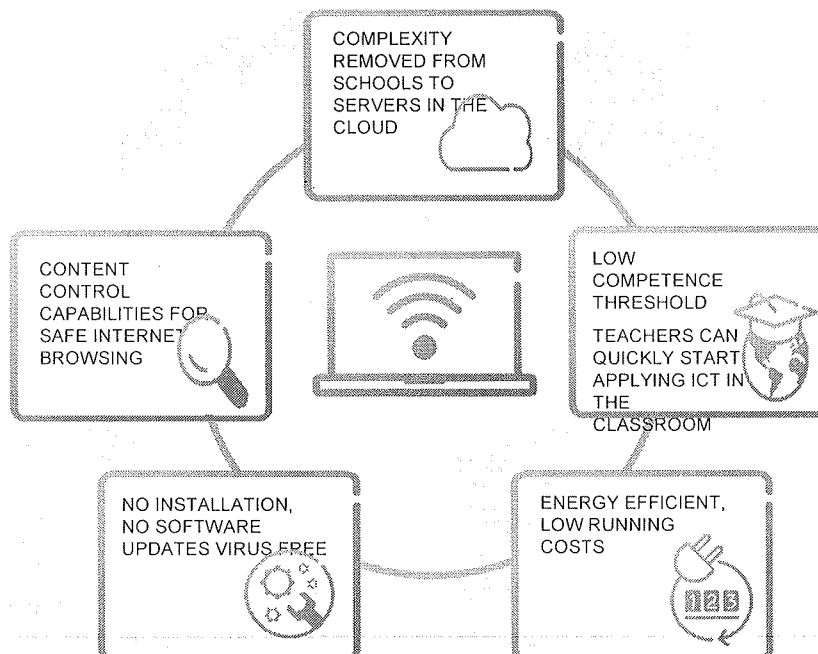


connect to learn

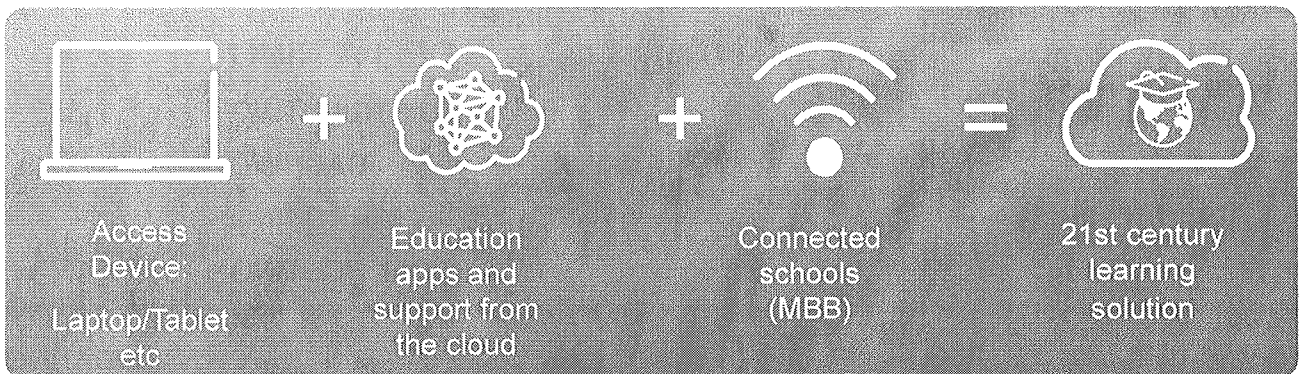
ACCESS TO QUALITY LEARNING



SIMPLICITY WITH CLOUD SERVICES



THIS IS EDUCATION-IN-THE CLOUD

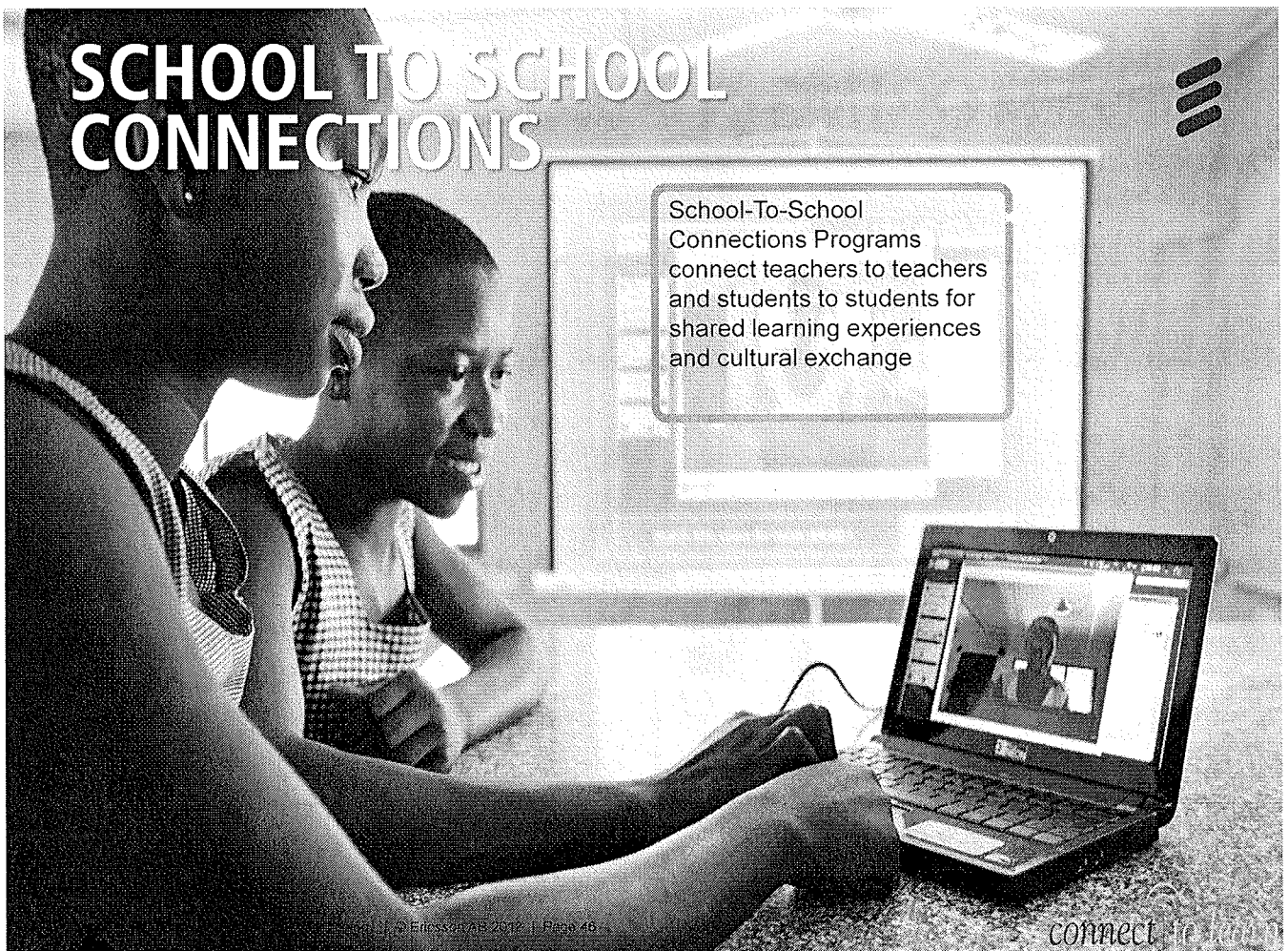


- › **Simple, manageable & safe** for students
- › **Cost-effective, scalable accurate usage information** for schools

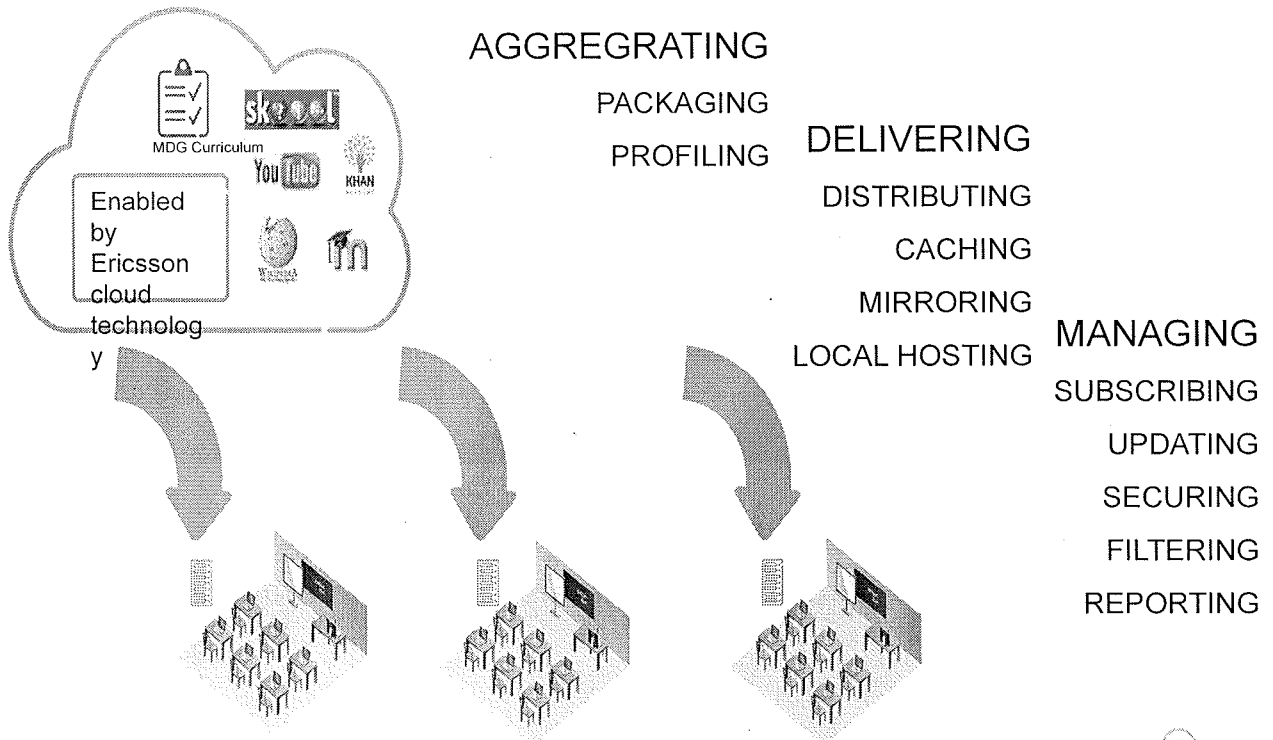
SCHOOL TO SCHOOL CONNECTIONS



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



CONTENT SERVICES



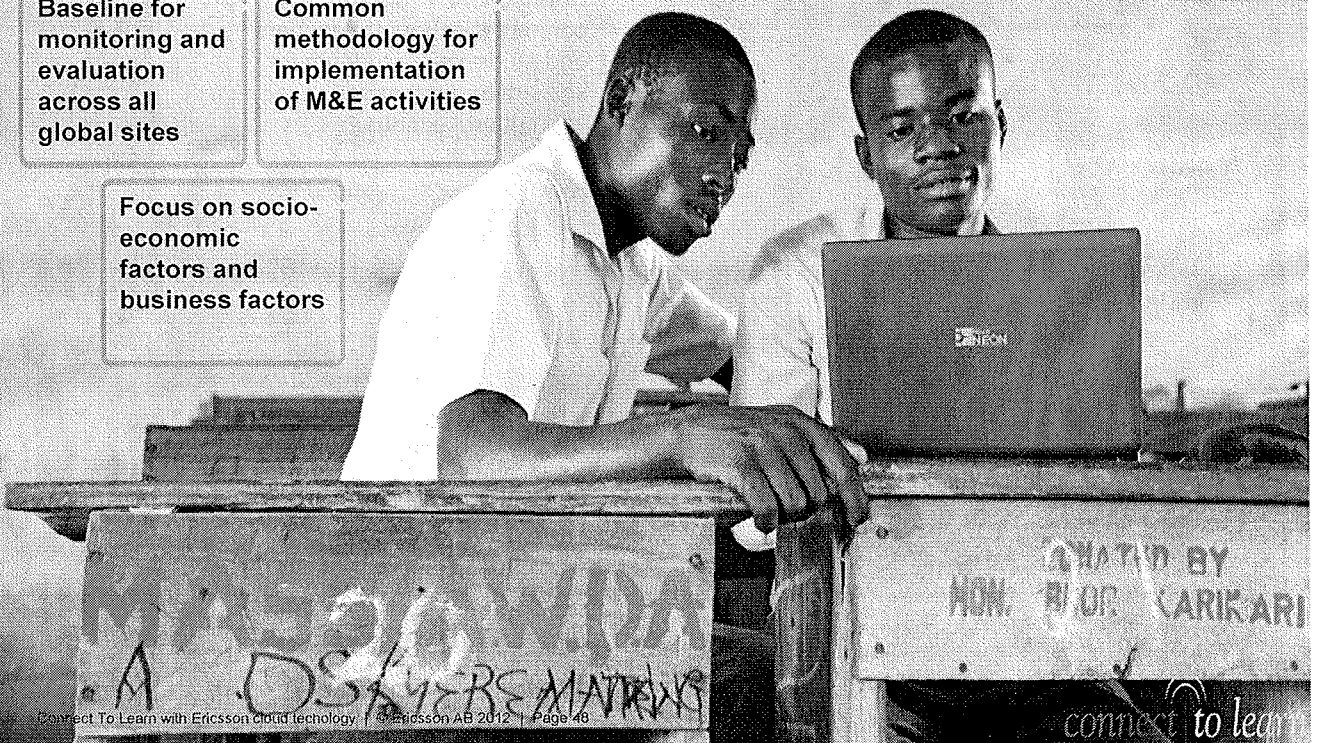
MONITORING & EVALUATION



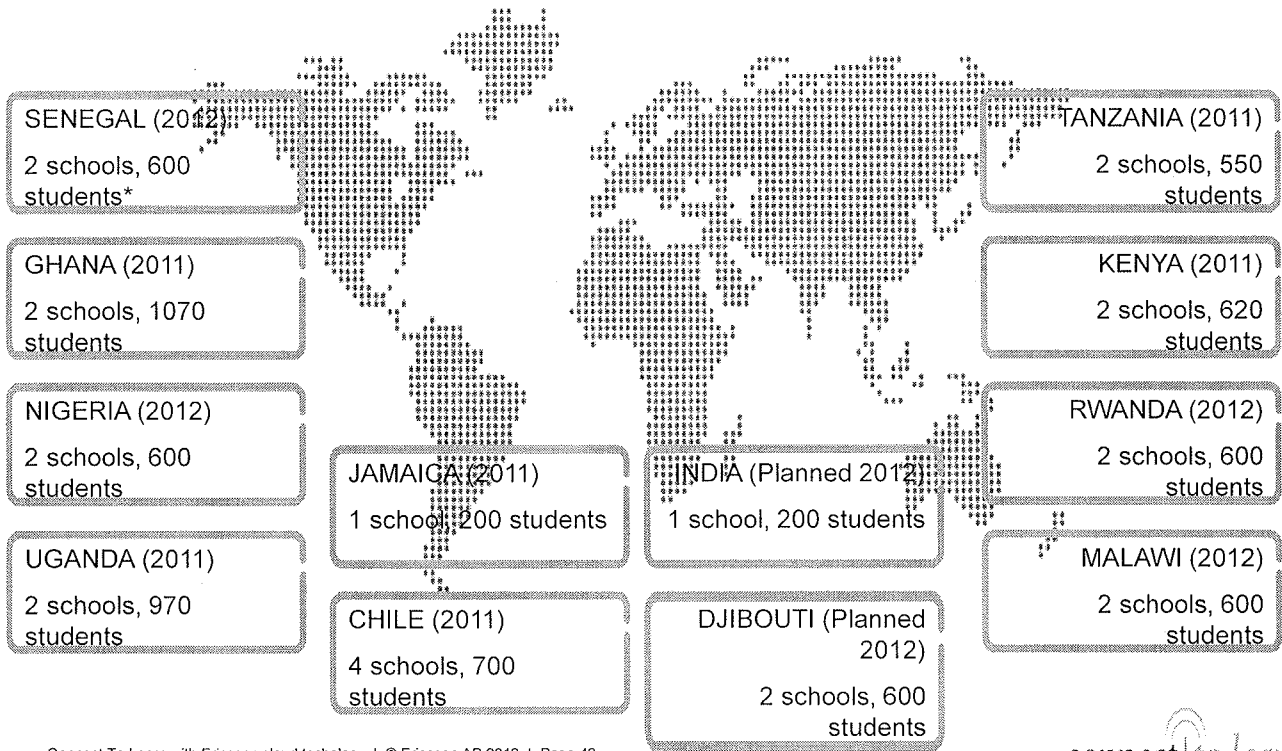
Baseline for monitoring and evaluation across all global sites

Common methodology for implementation of M&E activities

Focus on socio-economic factors and business factors

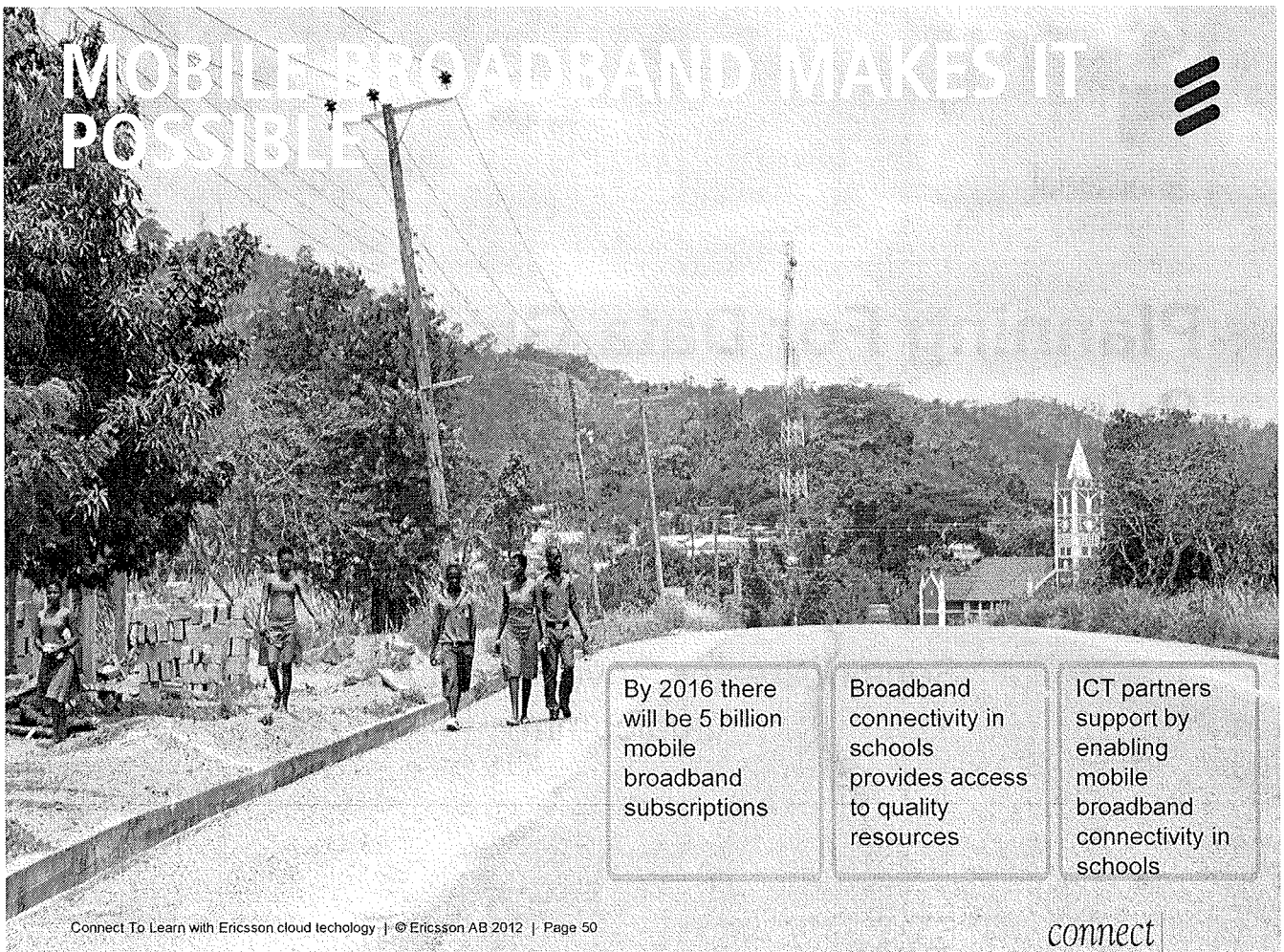


GLOBAL DEPLOYMENT



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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
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FOUNDING PARTNERS



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EDUCATE A GIRL. CHANGE THE WORLD.

THE EARTH INSTITUTE
COLUMBIA UNIVERSITY
Scientific Advisor



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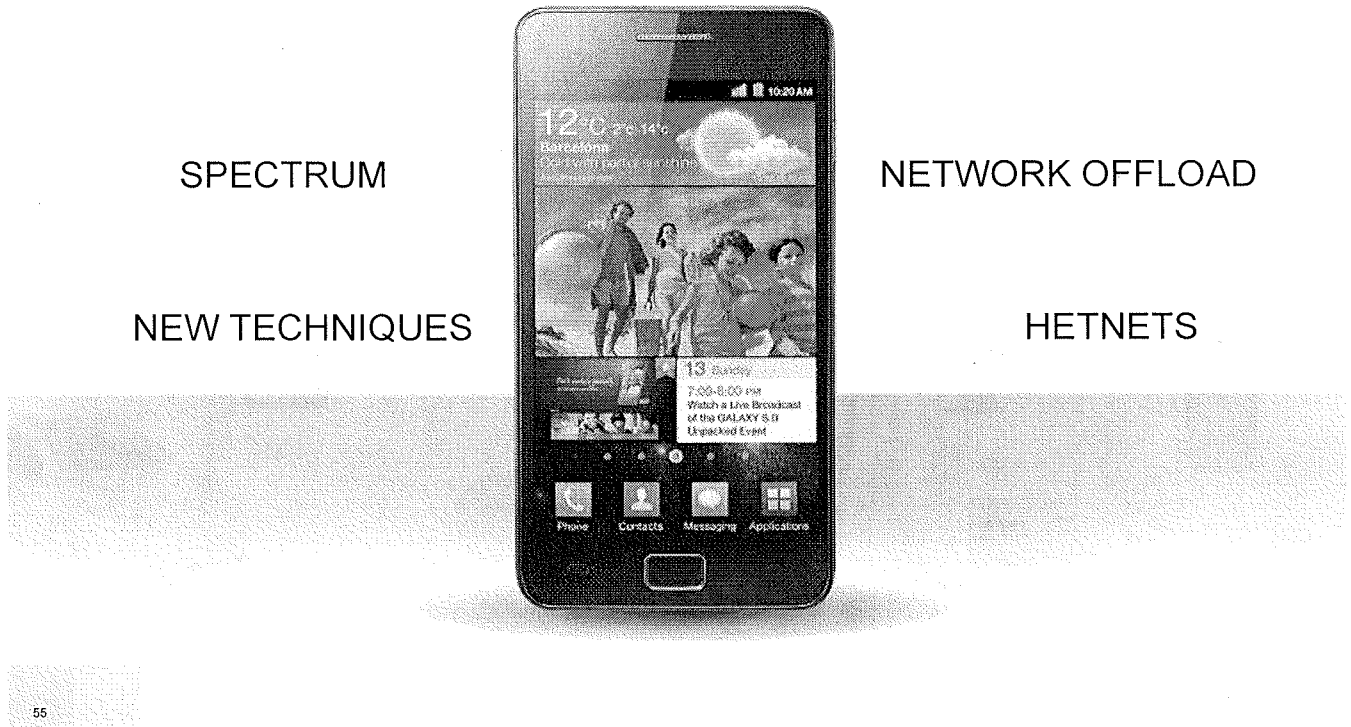


Planning For Data Growth: L-band Supplemental Downlink Spectrum Opportunity

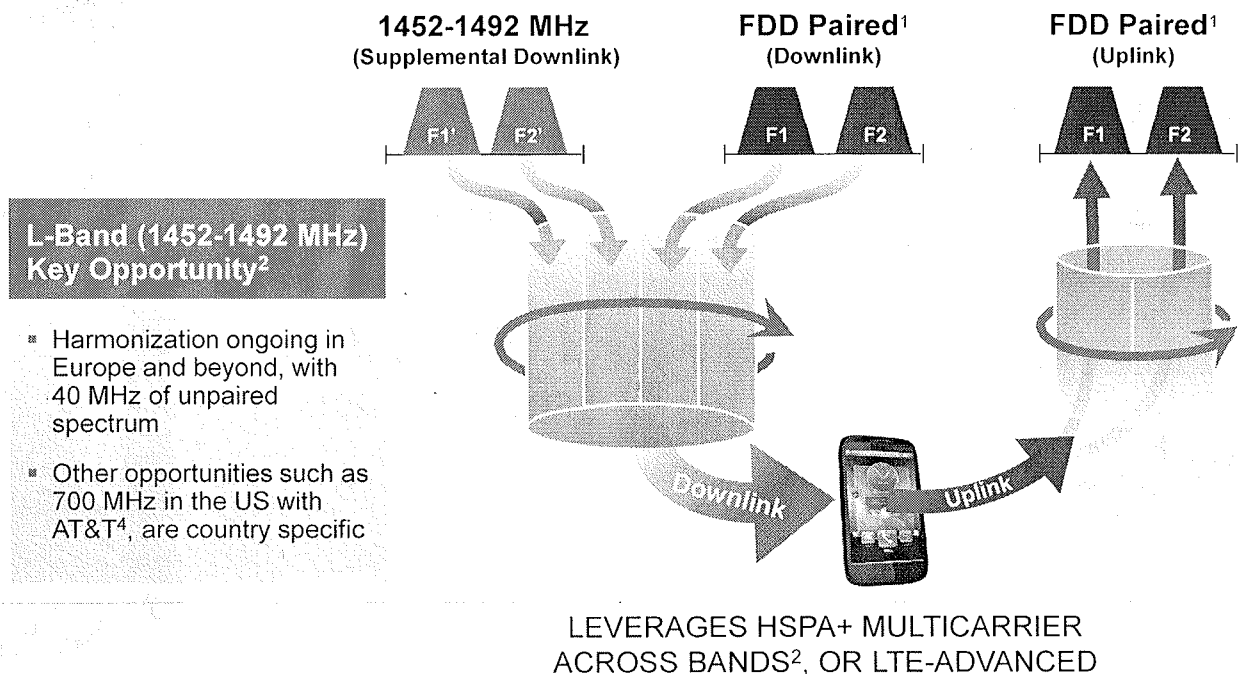
Wassim Chourbaji,
Senior Director Government Affairs,
Qualcomm



Current Efforts to Meet Growing Data Demand



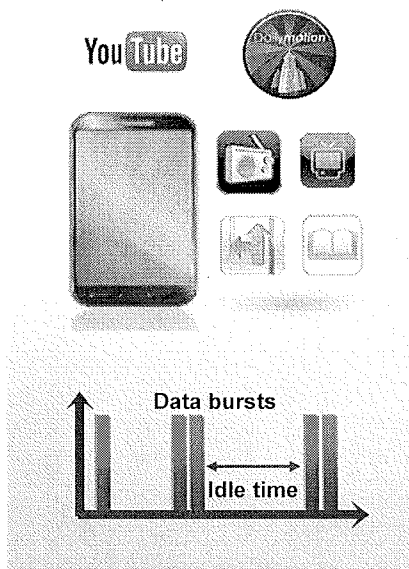
Spectrum Opportunity — L-band Supplemental Downlink (SDL)



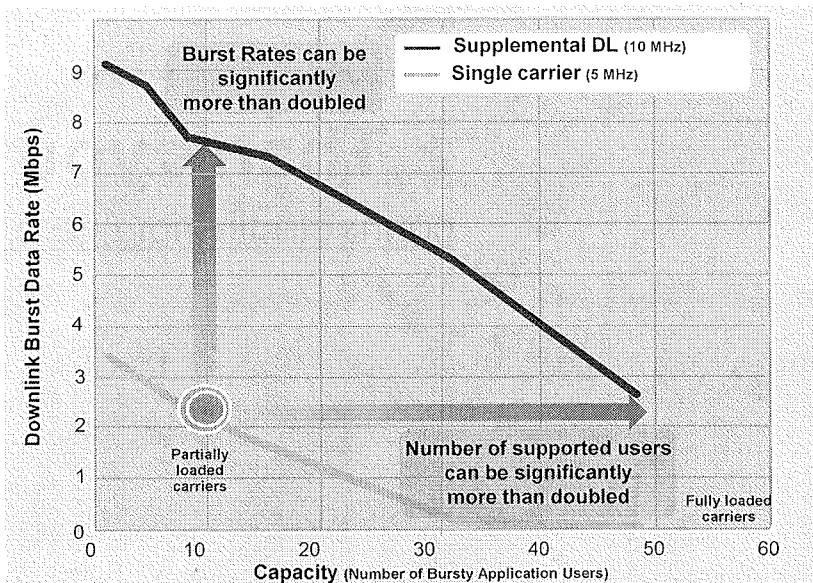
¹e.g. 800 MHz, 1800 MHz or 2.1 GHz. ²HSPA+ aggregation across bands already supported in 3GPP R9, but each additional band combination has to be defined in 3GPP. LTE Advanced (3GPP R10) introduces carrier aggregation. ³L-Band 1452 MHz to 1492 MHz. ⁴AT&T is planning to deploy supplemental downlink in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

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

Bursty Data Applications



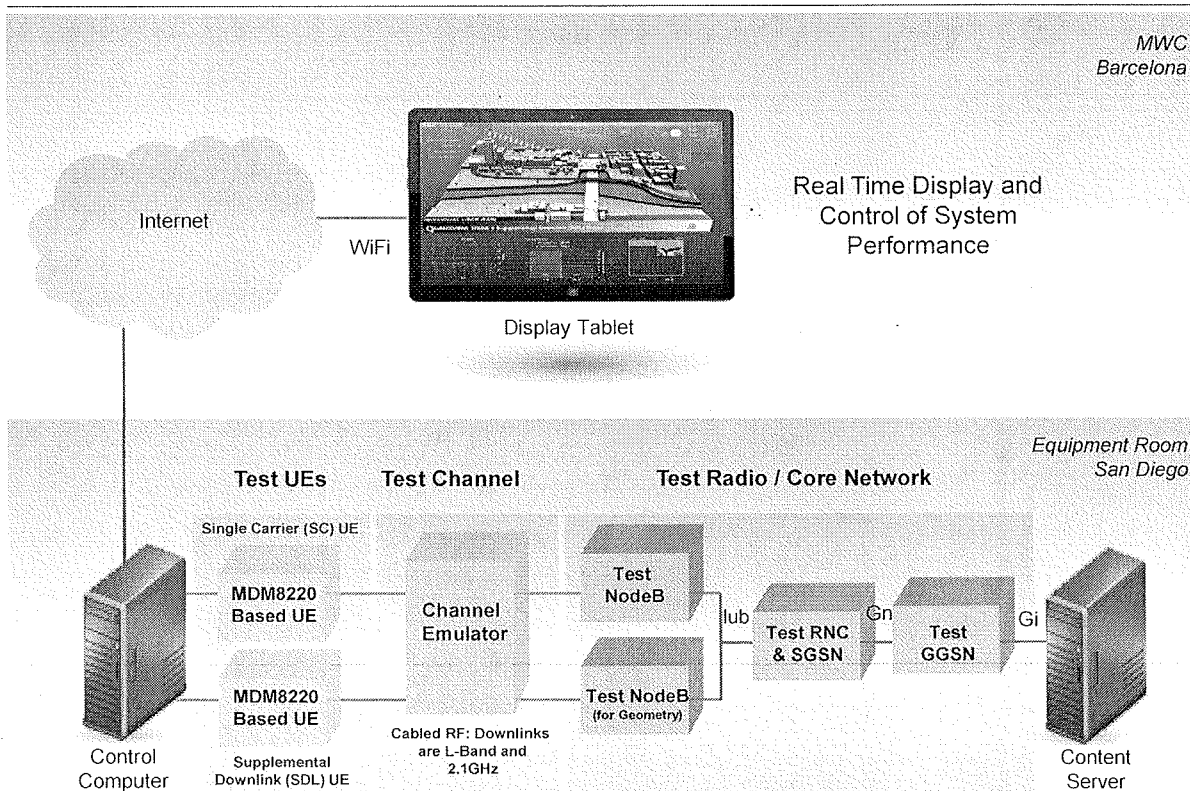
More than Double the Performance with Supplemental DL (HSPA+ R9) configuration



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Qualcomm simulations. 16 R99 users on anchor carrier and varying data users on 5MHz single or on 10MHz SDL carrier 1km ISD, PA3, Pilot Power = 10% Other Overhead Power = 20%. R99 user power consumption = 20%. Lower control overhead on the SDL carrier: 10%. The bursty nature means that a multicarrier can support more users at the same burst rate for partially loaded carriers. The gain depends on the load and can exceed 100% for fewer users (less loaded carrier) but less for many users (starting to resemble full buffer).

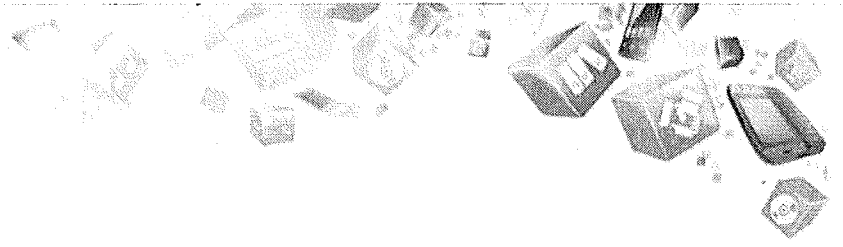
L-Band SDL Live Demo With HSPA+



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Thank you
connectedliving@gsm.org

