



MIKAEL HALÉN

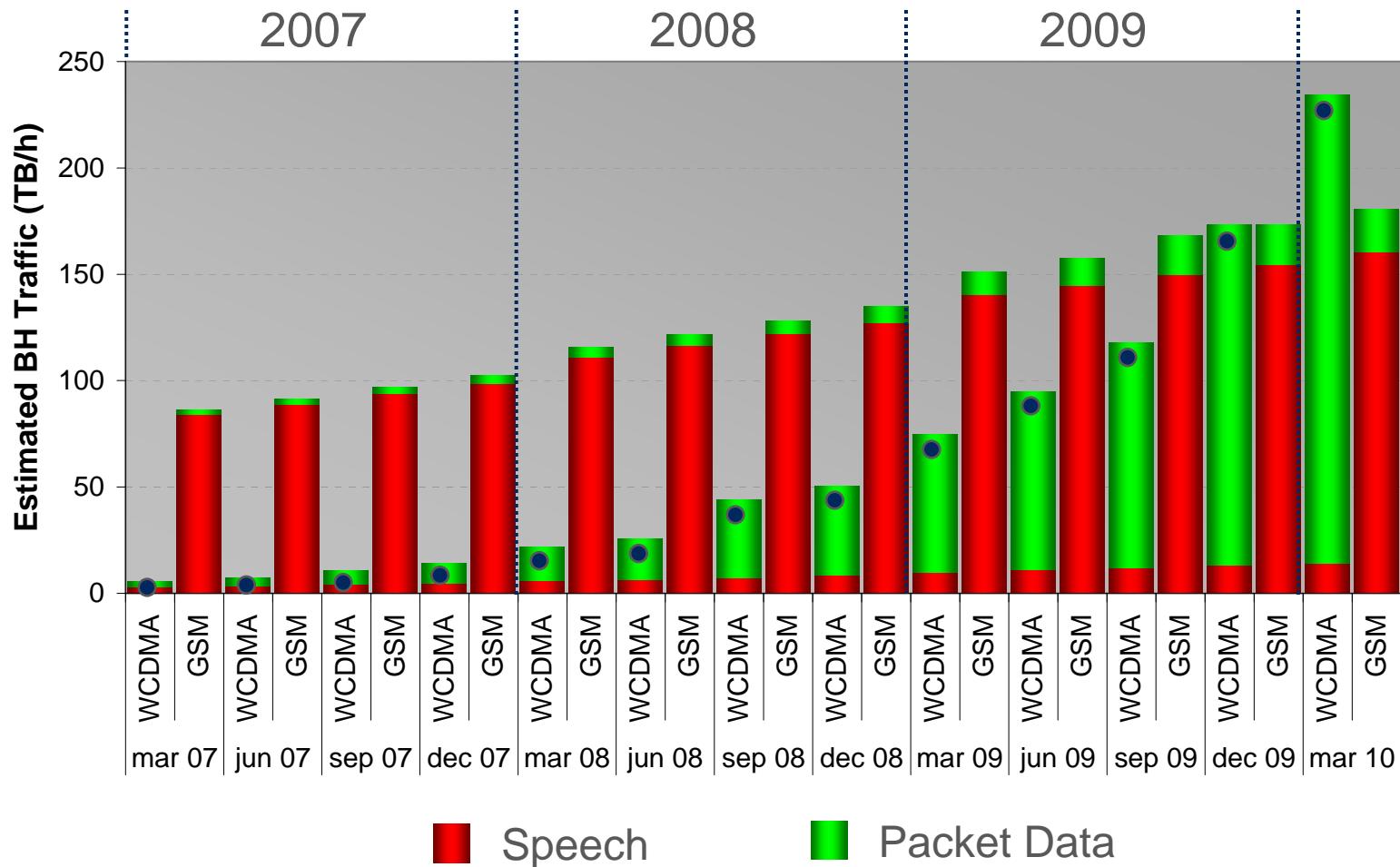
DIRECTOR, GOVERNMENT & INDUSTRY RELATIONS

SPECTRUM OUTLOOK FOR LTE

THE ENVIRONMENT

- › Governments around the world are launching “*National Broadband Plans*” to trigger economic growth and to bridge the domestic “*Digital Divide*”
 - ➔ Current broadcast spectrum is freed up for mobile broadband use
- › Smartphones and laptops have triggered an exceptional traffic growth in mobile networks
 - ➔ Network capacity upgrades and licensing of more spectrum
- › HSPA+ and LTE are being introduced across the world to increase efficiency and enhance the user experience
 - ➔ More and broader spectrum allocations are needed

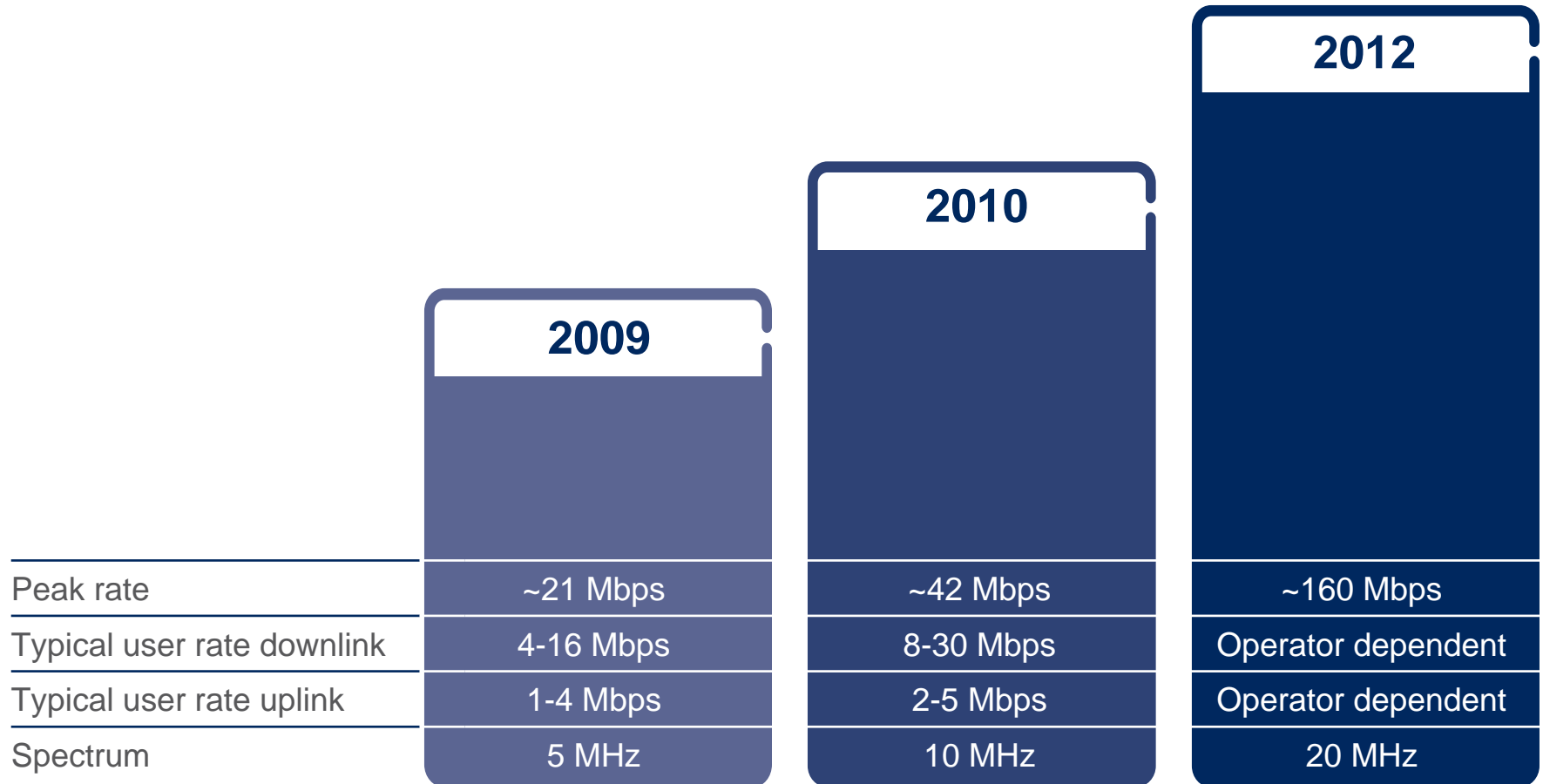
STRONG GROWTH IN MOBILE BROADBAND



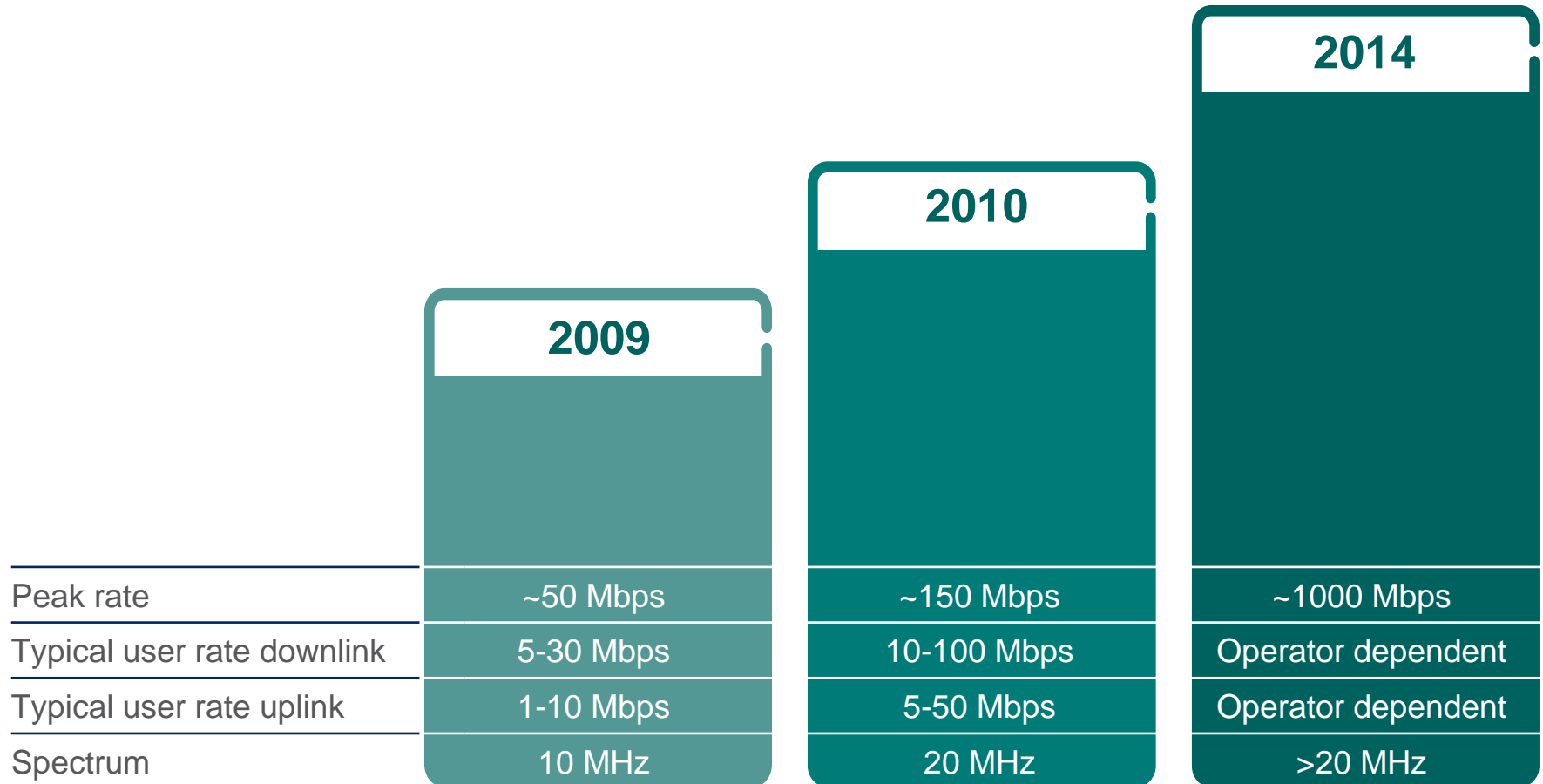
Source: Ericsson, Apr-2010

MORE USERS AND HSPA+ & LTE DEPLOYMENTS WILL FURTHER SUPPORT THIS TREND

COMMERCIAL HSPA SPEED EVOLUTION

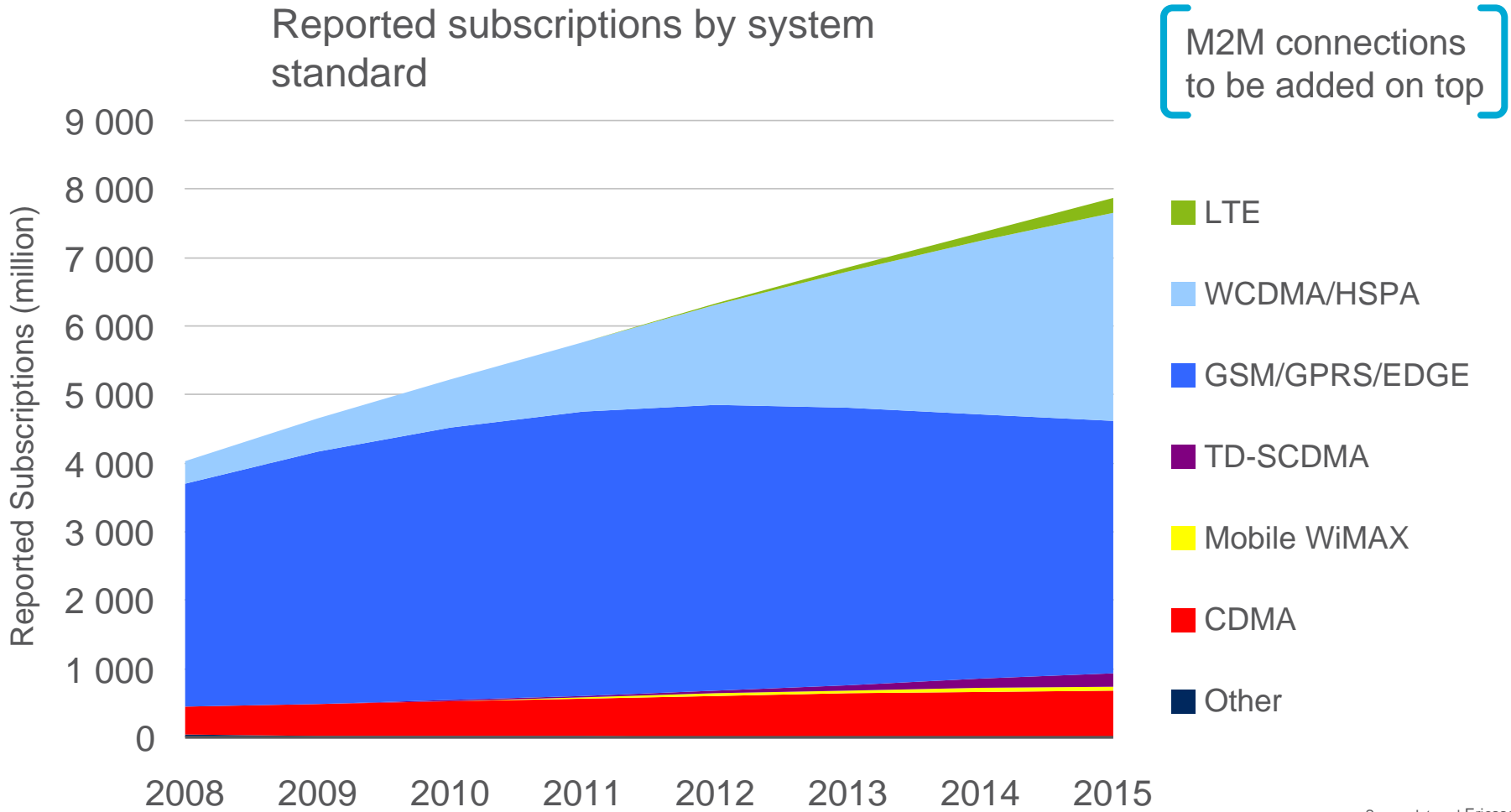


COMMERCIAL LTE SPEED EVOLUTION



BROADER SPECTRUM ALLOCATIONS ARE NEEDED

HARMONIZED SPECTRUM IS A KEY MASS MARKET ENABLER



Source: Internal Ericsson

This slide contains forward looking statements

THE 3GPP SET OF INTEROPERABLE STANDARDS DOMINATE ~90%

HARMONISED SPECTRUM

– EXAMPLE IN THE “2600 MHz BAND”



- › Well specified frequencies for FDD up/downlink, TDD and guard band for interference free operation
- › The 2600 MHz arrangement is defined by CEPT for Europe and CITELE for Latin America with **2 x 70 MHz FDD and 50 MHz TDD**
- › 3GPP has specified the arrangement for the development of **standardised products**
- › The band may be licensed in a service and technology neutral way

HARMONISED SPECTRUM AND STANDARDS

Harmonised spectrum is key for development of public mobile broadband access as well as for industry to be able to successfully respond to national policy goals by providing **standardised products**

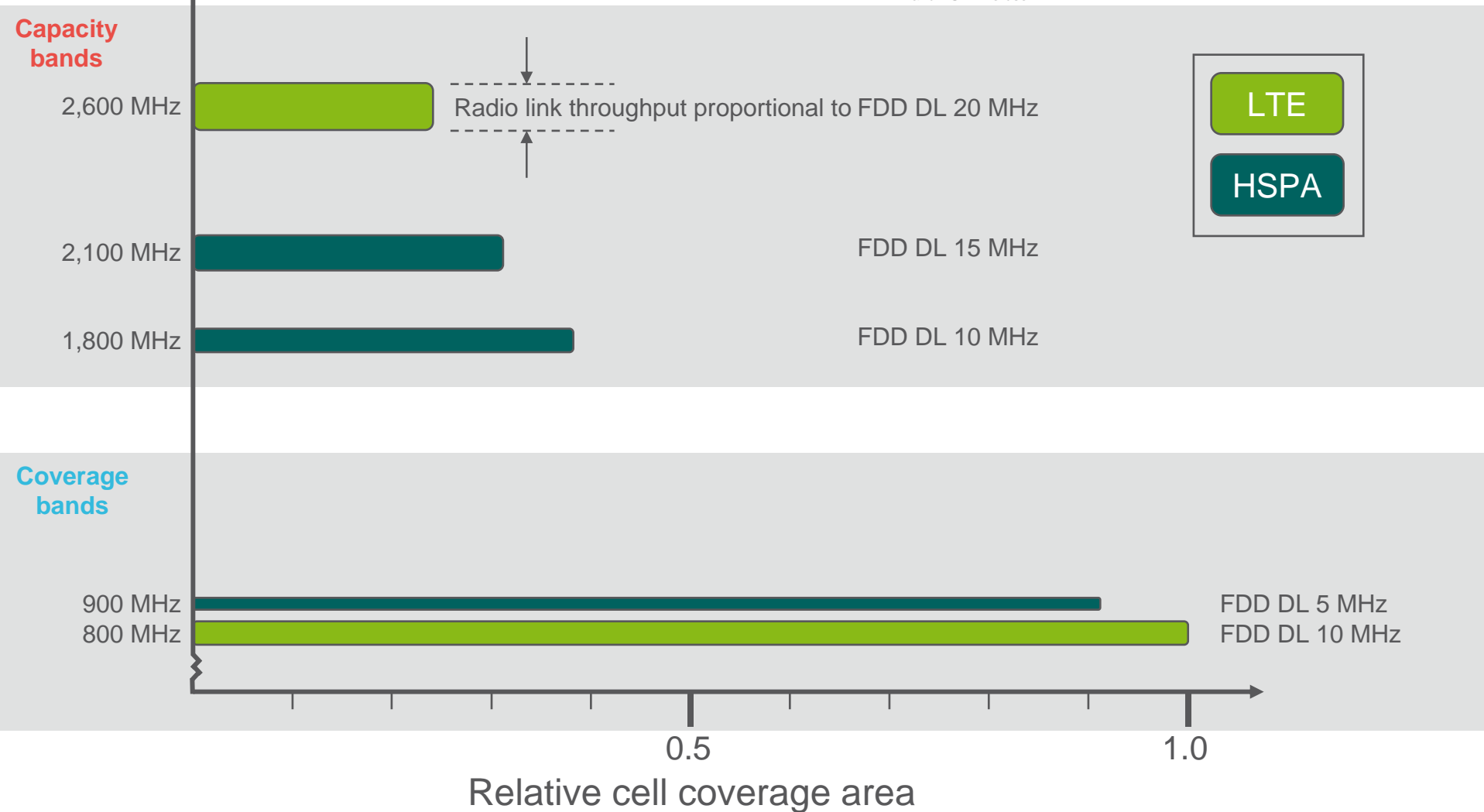
- › **Economy of scale** – based on a mass market
- › **Easy cross-border coordination** – less risk for interference
- › **Cross-border operation** – uninterrupted service between countries
- › **Global roaming capabilities** – user convenience
- › **Interoperability** – choice and convenience for devices and infrastructure
- › **Efficient use of spectrum** – also in border areas

PROVIDING AFFORDABLE SERVICES TO ALL

BROADBAND CAPACITY & COVERAGE

- TYPICAL DEPLOYMENT BY A EUROPEAN OPERATOR

Assumptions: Propagation based. Suburban environment. Reference frequency is 800 MHz.
 5 dB higher antenna gain at 2,100 MHz and 6 dB higher antenna gain at 2,600 MHz.
 LTE and HSPA: re-use 1



4G/LTE DEPLOYMENTS IN 4 BANDS IN 2010

700 MHz in the US – LTE FDD

- Verizon and AT&T are deploying

Commercial service in 2010

2600 MHz in Europe – LTE FDD

- TeliaSonera has launched its service in Sweden
- Several major countries in Europe and Latin America plan to auction spectrum during 2010
- Over time this band will be a global band for LTE (FDD & TDD)

2100 MHz in Japan – LTE FDD

- NTT DoCoMo committed to start LTE service in December 2010

AWS in North and Latin America – LTE FDD

- MetroPCS commitment
- Several countries in Latin America are expected to issue licenses in the near future

800 MHz in Europe – LTE FDD

- First spectrum auctions concluded - Germany
- Deployments expected to start during 2011

Commercial service in 2011 or later

2300 MHz in APAC – TD-LTE

- India BWA auction opens up for TD-LTE. Potential large deployment and business synergies with 3G.
- MIIT tests have started in China, strong push for TD-LTE as an evolution of TD-SCDMA, deployments may start ~2011.
- Over time this band will be a global band for LTE (TDD)

SPECTRUM FOR MOBILE BROADBAND

- REGIONAL MAINSTREAM HSPA & LTE DEPLOYMENTS

[MHz]

North America

Base: 850, AWS & 1900

New: **US700**

2011+: re-farming/LTE

Europe

Base: 2100

New: **900 & 2600**

2011+: 800 & 1800

Japan

Base: 2100, 1700 & JP850

New: **1500 & re-farm/LTE**

2011+: re-farming/LTE

Latin America

Base: 850 & 1900

New: **AWS & 2600**

2011+:

MEA

Base: 2100

New: **900 & 850**

2011+: 2600 & 800

APAC

Base: 2100

New: **900 & 850**

2011+: 2300, 2600 & APT700

CONCLUSIONS – SPECTRUM FOR LTE

- › **Good support from governments** to allocate more spectrum as a means to trigger economic growth and to bridge the domestic *”Digital Divide”*
- › **Strong consumer demand** for mobile broadband – smartphones and laptops are key drivers
- › **Major spectrum auctions during Q2 in Germany and India** will further support LTE FDD deployments in the 800 and 2600 MHz bands and also open up the market for TD-LTE in the 2300 and 2600 MHz bands

POSITIVE SPECTRUM OUTLOOK FOR LTE



ERICSSON