# BANDA LARGA MÓVEL
# EVOLUÇÃO PARA LTE

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PRESS RELEASE
MARCH 23, 2010

# MOBILE DATA TRAFFIC SURPASSES VOICE

- Historic milestone for mobile industry
- Based on Ericsson measurements in live networks
- 24/7 Internet connection, a necessity in life

Mobile data surpassed voice on a global basis during December of 2009, Ericsson announced today at the CTIA Wireless 2010 convention in Las Vegas. This finding is based on Ericsson (NASDAQ:ERIC) measurements from live networks covering all regions of the world.

Ericsson's findings show that data traffic globally grew 280% during each of the last two years, and is forecast to double annually over the next five years. The crossover occurred at approximately 140,000 Terabytes per month in both voice and data traffic. The data traffic increase is contributing to revenue growth for operators when more and more consumers use data traffic generating devices such as Smartphones and PCs. During the same period, Ericsson measurements show that traffic in 3G networks surpassed that of 2G networks.

"This is a significant milestone with some 400 million mobile broadband subscriptions now generating more data traffic than the voice traffic from the total 4.6 billion mobile subscriptions around the world," said Hans Vestberg, Ericsson President and CEO, speaking at a management briefing in Las Vegas. "Our view that the appeal of anywhere, anytime connectivity would drive mobile broadband growth is confirmed by the real world measurements under taken by Ericsson."

http://www.ericsson.com/thecompany/press/releases/2010/03/1396928

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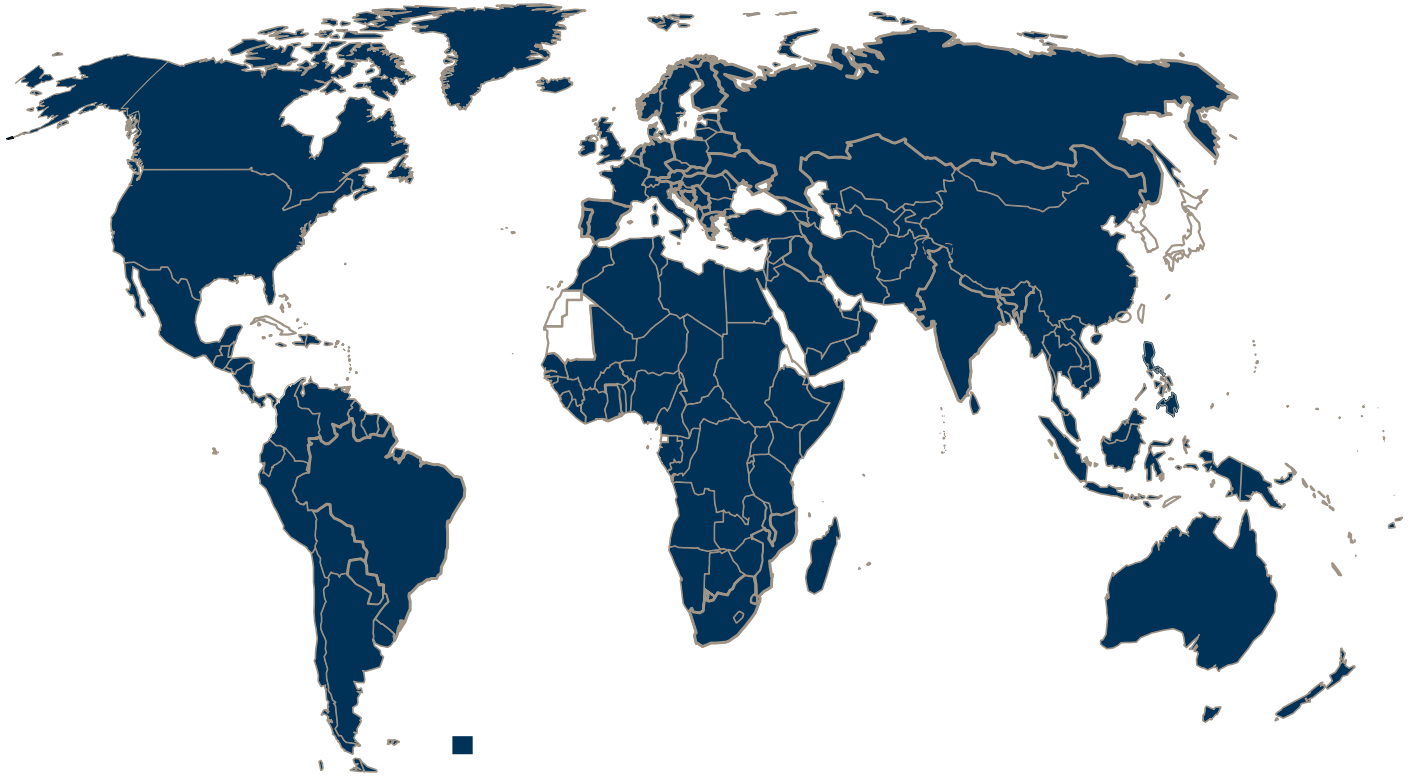
# MOBILE BROADBAND TECHNOLOGIES


MOBILE BROADBAND FOR ALL USERS & ALL NEEDS

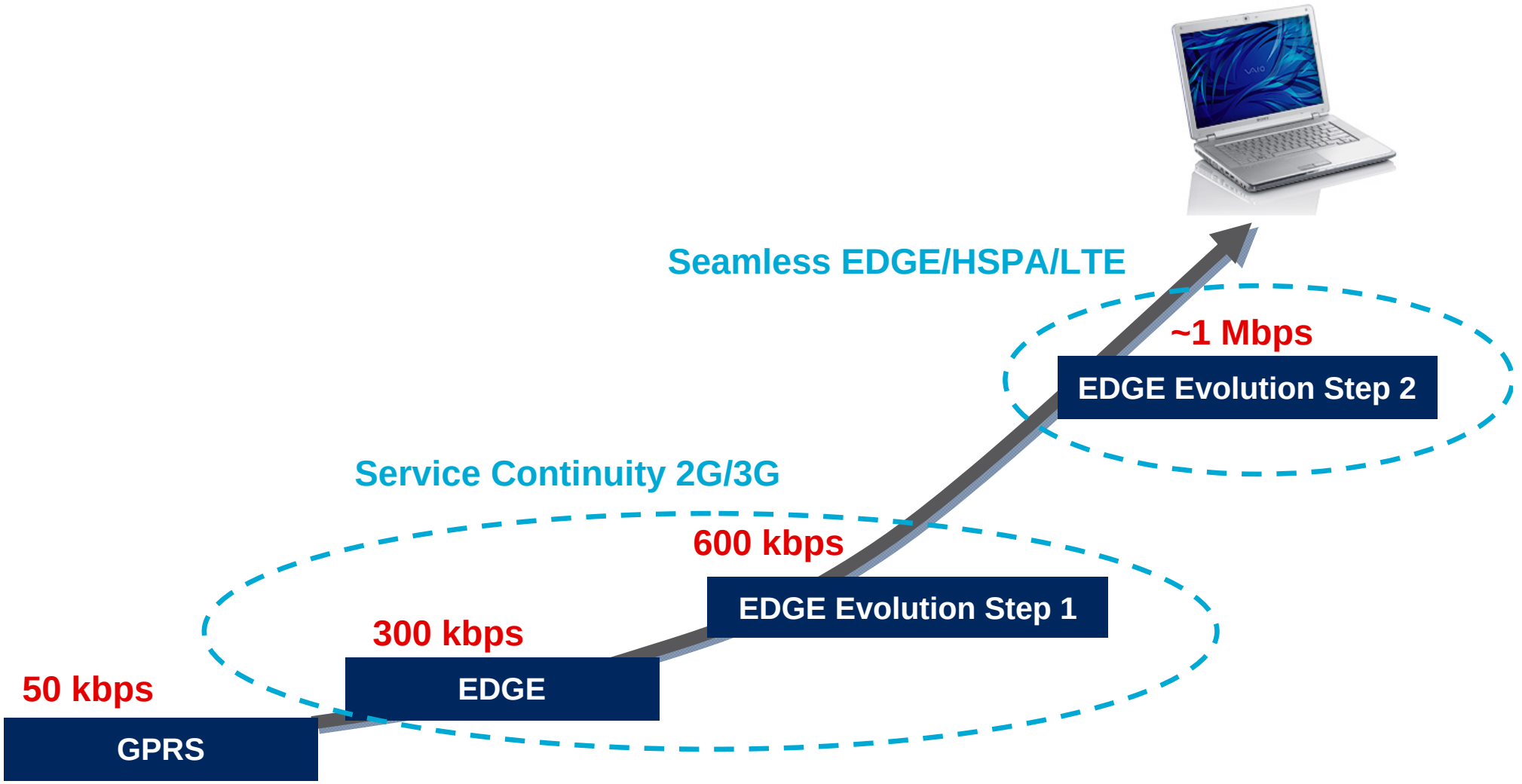
# THE SUCCESS OF EDGE



*Source: GSA, Feb 2010*

- 503 EDGE deployments
  - commercial EDGE-enabled services, in deployment or planned
- 2/3 HSPA networks also have EDGE

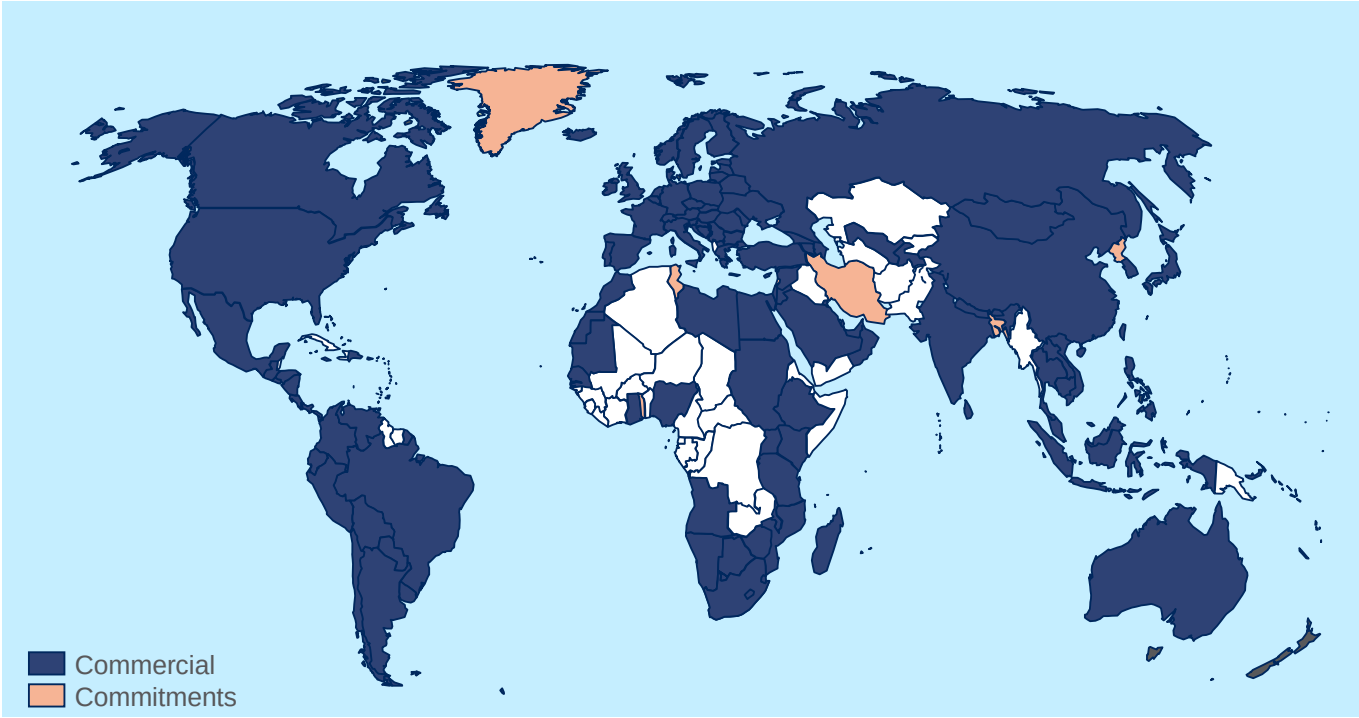
# EDGE: MEETING ALL NEEDS



# THE SUCCESS OF HSPA

Mobile Broadband

- 341 commercial networks
  - 143 countries
- ½ billion WCDMA/HSPA subscribers
- 2349 devices
  - Over 230 suppliers



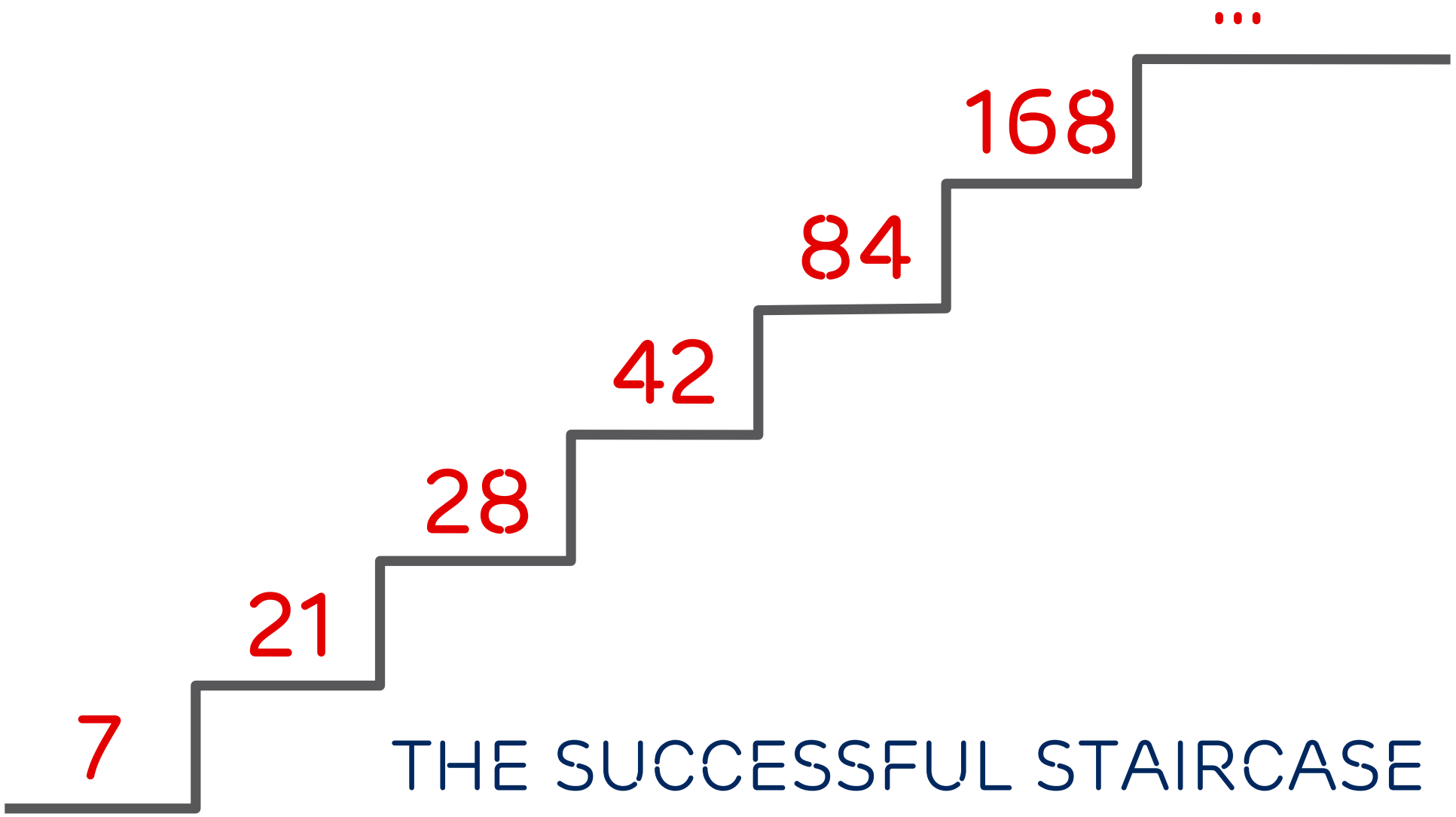


GSM largest technology, followed by HSPA

Sources: GSA, WCIS / Informa

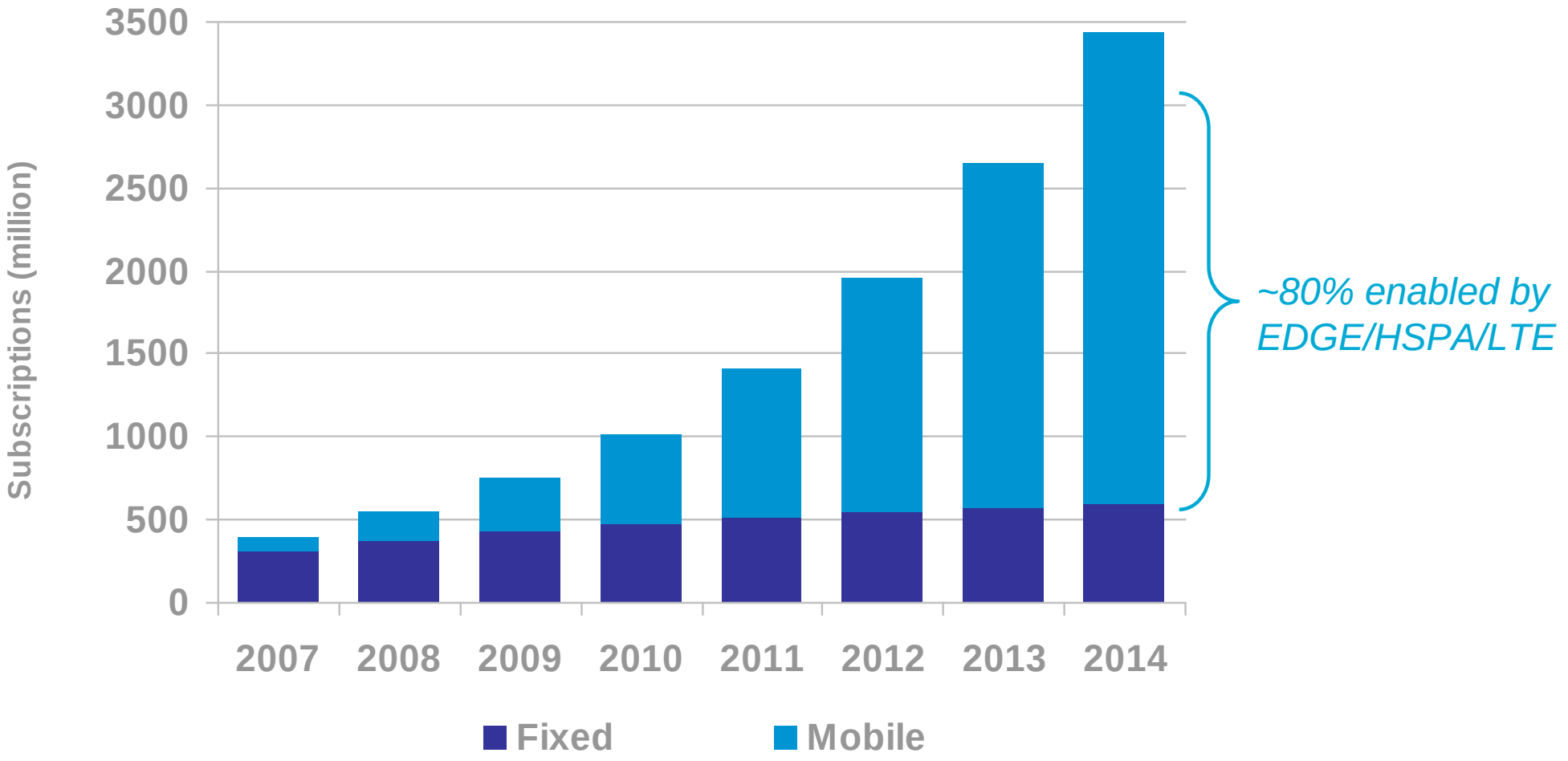
# HSPA EVOLUTION

## PEAK RATE IN MBPS




THE SUCCESSFUL STAIRCASE

# BROADBAND IS GOING MOBILE




Mobile Broadband includes: CDMA2000 EV-DO, HSPA, LTE, Mobile WiMAX, TD-SCDMA
Fixed broadband includes: DSL, FTTx, Cable modem, Enterprise leased lines and Wireless Broadband

Source: Ericsson Q4 2008

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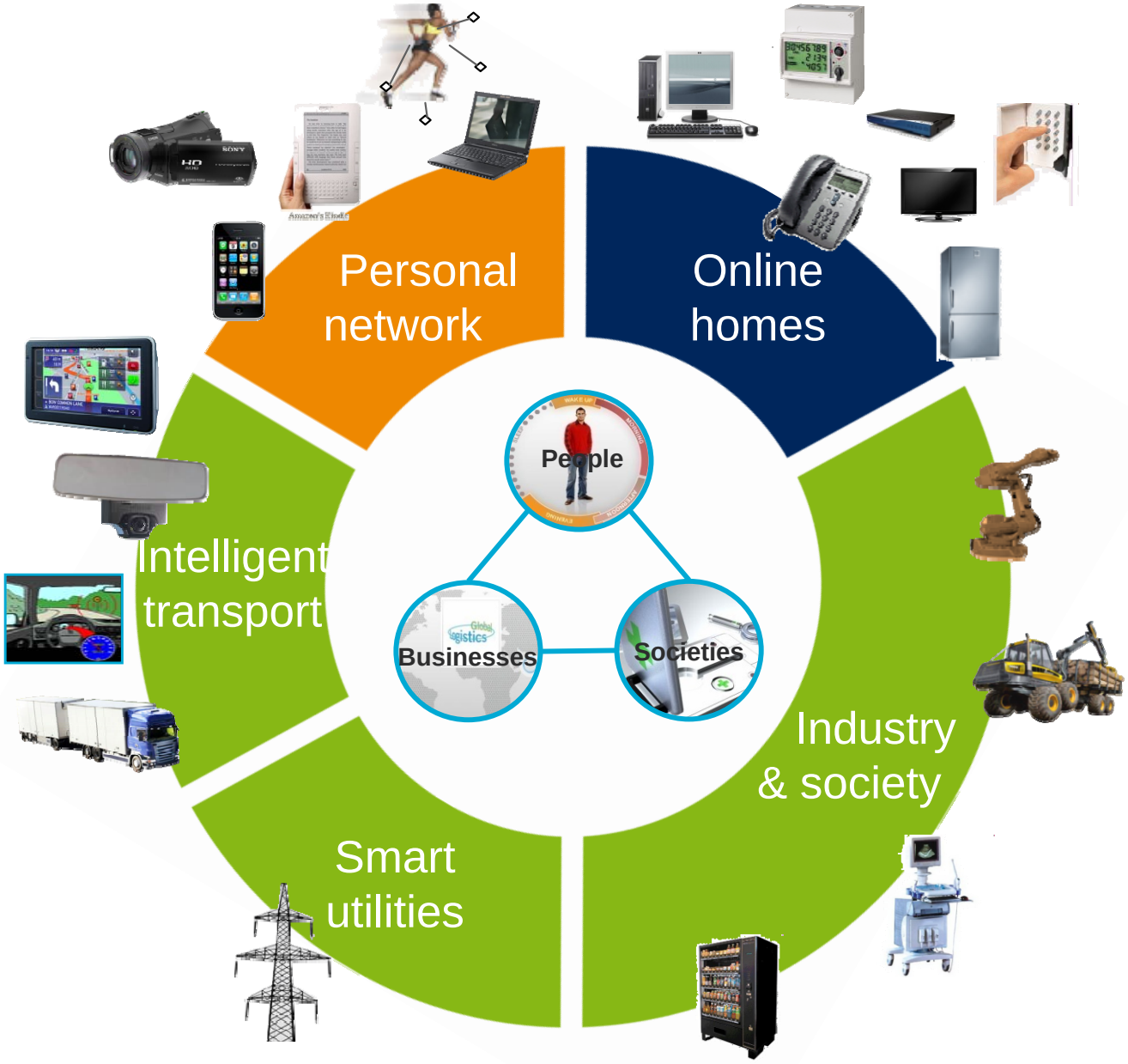
# 50 BILLION USERS IN 2020

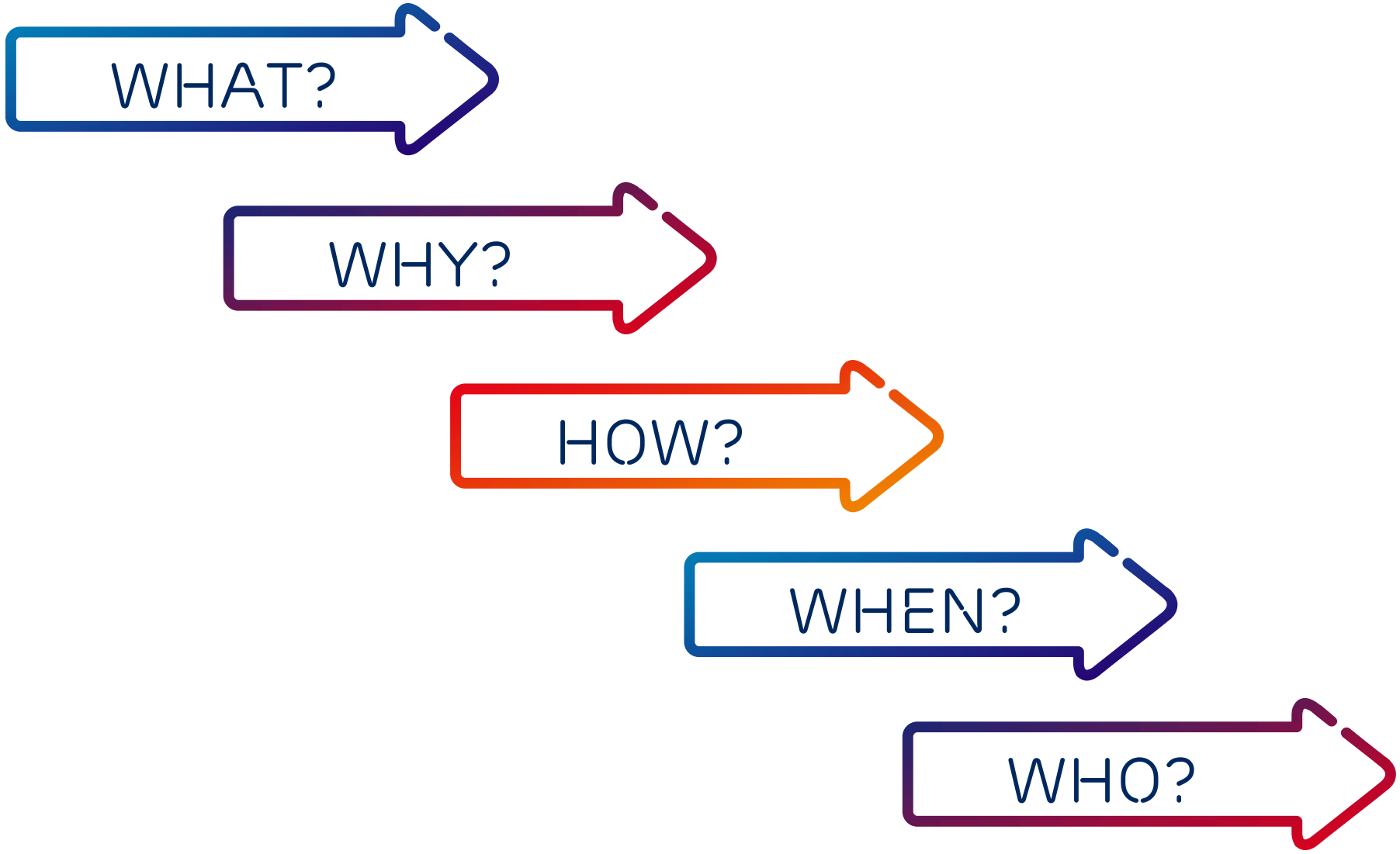
# CONNECTED DEVICES



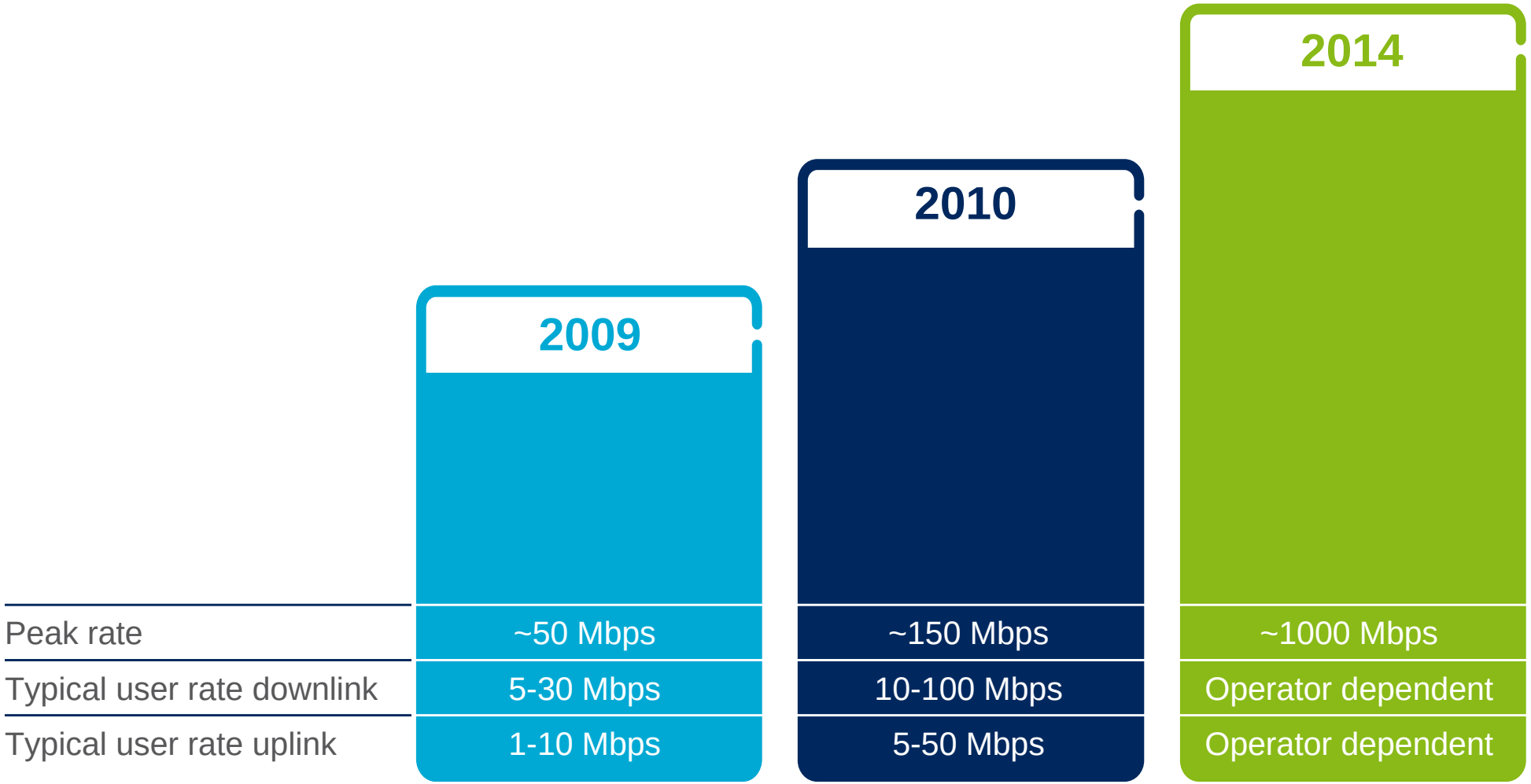
# CONNECTED DEVICES


## EVERYTHING THAT CAN BENEFIT FROM A CONNECTION WILL HAVE ONE

# LTE THE NEXT EVOLUTIONARY STEP

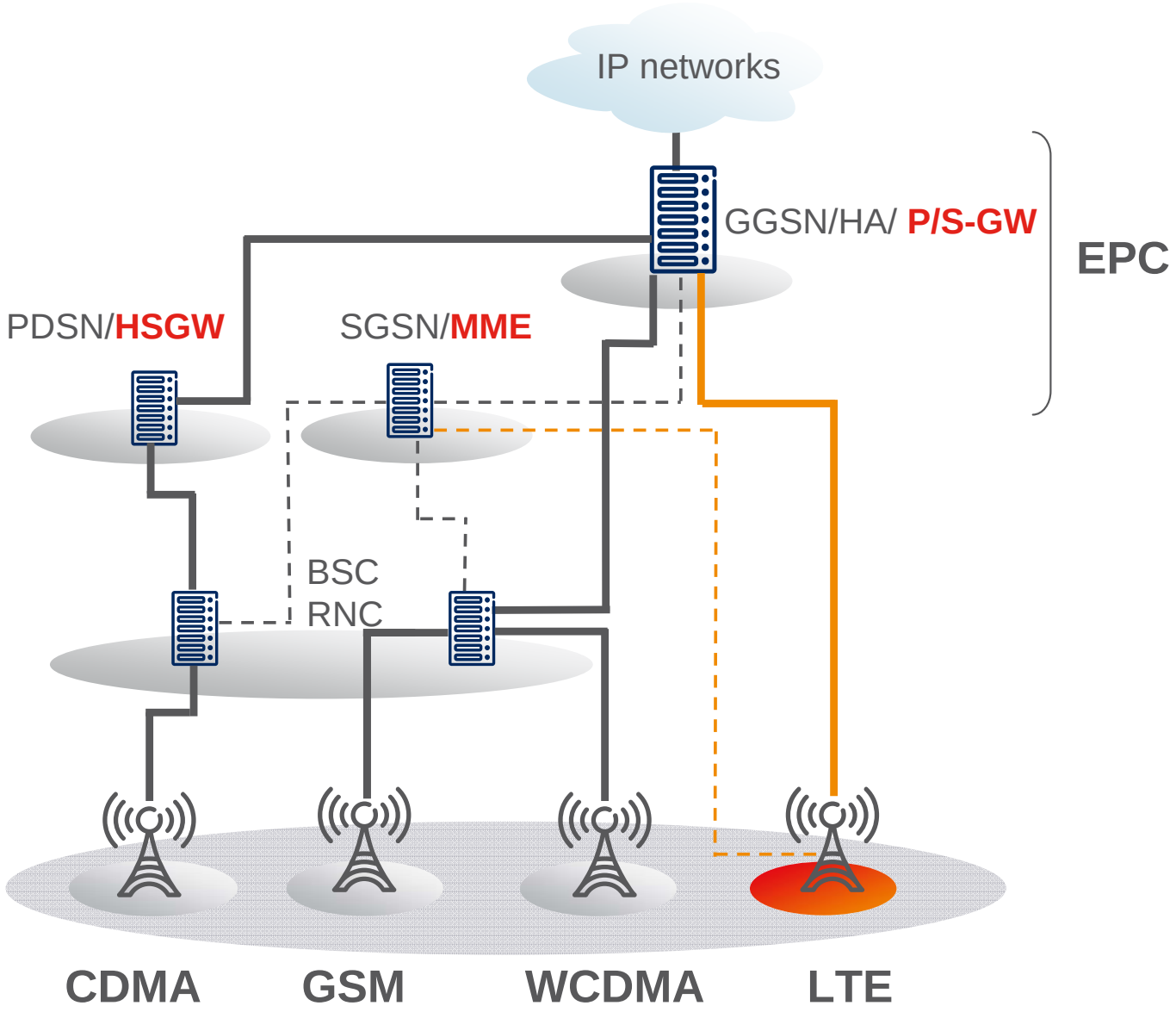


# WHAT SPEED EVOLUTION




| | 2009 | 2010 | 2014 |
|---|---|---|---|
| Peak rate | ~50 Mbps | ~150 Mbps | ~1000 Mbps |
| Typical user rate downlink | 5-30 Mbps | 10-100 Mbps | Operator dependent |
| Typical user rate uplink | 1-10 Mbps | 5-50 Mbps | Operator dependent |

# WHAT LTE/EPC NETWORK ARCHITECTURE




MME = Mobility Management Entity
P/S-GW = PDN/Serving gateway
PDSN = Packet Data Serving Node
HRPD = High Rate Packet data
HSGW = HRPD Serving gateway

# WHY FOLLOW THE MARKET DEMAND

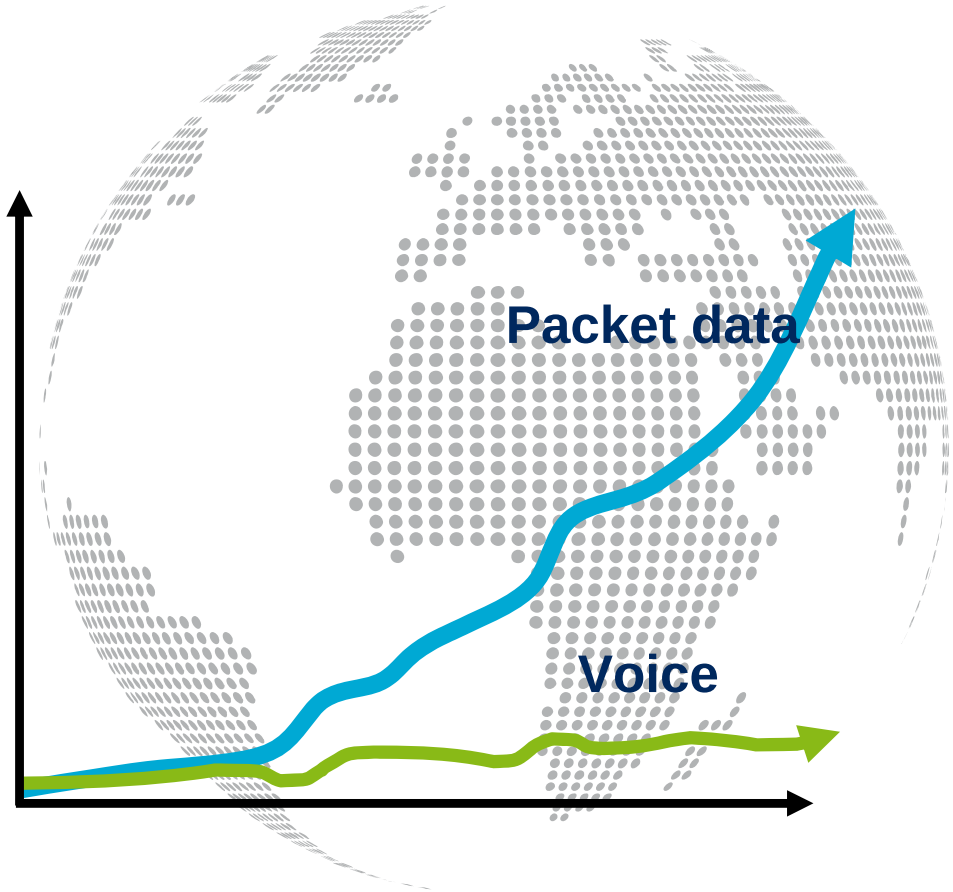
› Driver – first on the market!

› Follower – keep market share!


COMPETITIVE PRESSURE

# WHY MORE CAPACITY

- Enormous MBB traffic growth
- Huge Subscriber uptake
- MBB Revenue Growth




MBB SUCCESS IS DRIVING CAPACITY

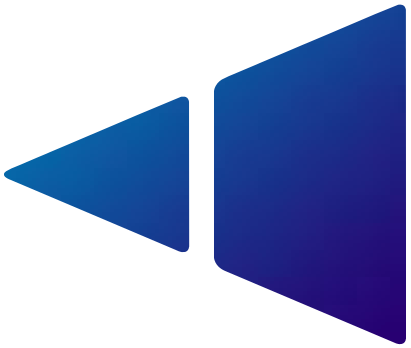
# WHY COST EFFICIENCY

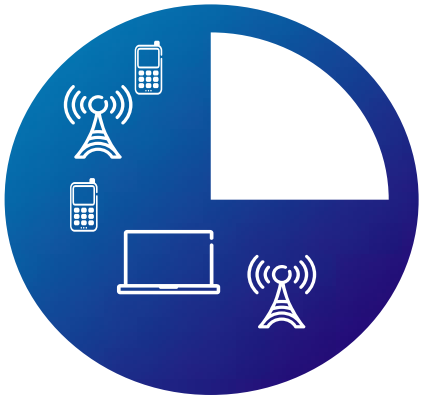
Wider pipe advantage

Self Organizing Networks

All-IP architecture

Economies of Scale





LOW TOTAL COST OF OWNERSHIP

# WHY PERFORMANCE MATTERS

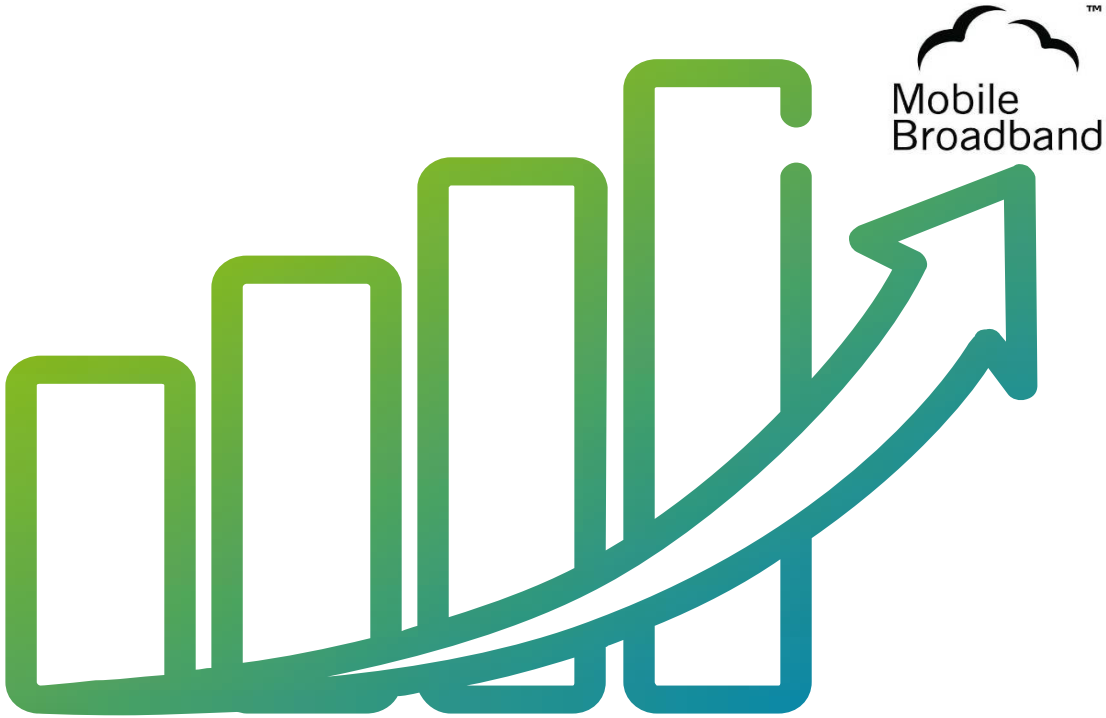
› Higher capacity
  – Peak and average data rates

› Enhanced user experience
  – “Always on”
  – Quick access time
  – Low latency

PERFORMANCE OPENS
NEW OPPORTUNITIES

# WHEN IS THE DEMAND

- Market competition
  - Driver
  - Follower
- MBB offering take off
  - Service diversity
- Service trend
  - Flexibility, buckets, etc

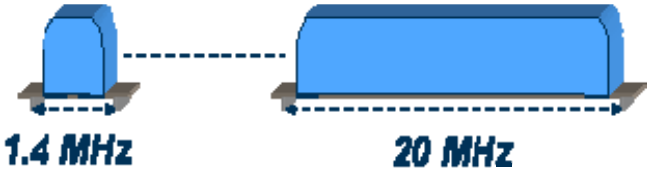


# WHEN AND HOW ABOUT SPECTRUM

› New Spectrum
  - When can the spectrum be used
  - What spectrum will be available
  - Capacity- & Coverage-band

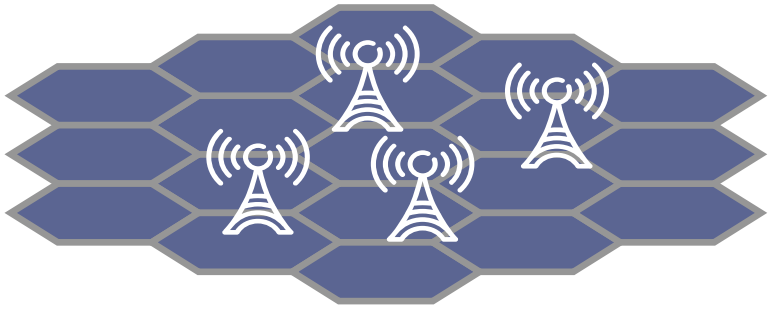
› Unused Spectrum
  - TDD
  - Re-farmed spectrum

› Bandwidth availability
  - Commercial impact

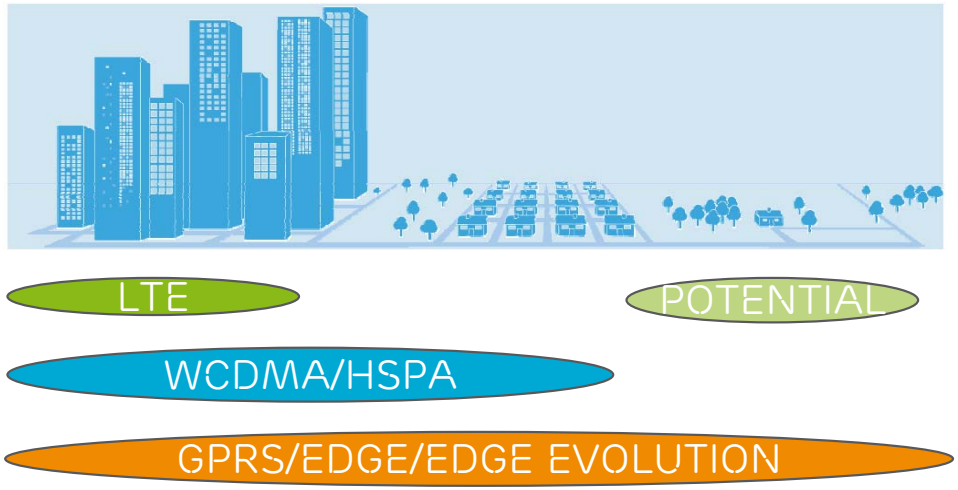



# WHEN AND HOW TO BUILD COVERAGE

- Regulatory rules
- Existing grid
- Target coverage plan



- Urban / Sub-urban area
  - Hot spots
- Rural area
  - Coverage reasons




MAJORITY OF LTE INSTALLATIONS WILL BE ON EXISTING SITES

# WHEN TO CHOOSE TECHNOLOGY OPTIONS

- Voice solutions
  - Voice Fallback (CSFB)
  - IMS/MMTEL (One Voice)
- 3G Network available
  - Evolve 3G / Introduce LTE?
- 2G Network available
  - LTE …or first 3G?
- Interoperability between technology
  - Clear strategy for Mobility and Traffic Management

# WHO LTE DEPLOYMENT COMMITMENTS

- Aircell
- AT&T Mobility
- Bell Canada
- Cell C
- CenturyTel
- China Mobile, China
- China Mobile, Hong Kong
- China Telecom
- Chunghwa Telecom
- Commnet Wireless
- Cox Communications
- CSL Limited
- DNA
- Elisa
- eMobile
- EMT
- Etisalat
- Hutchison 3, Austria
- Hutchison 3, Hong Kong
- Hutchison 3, Ireland
- KDDI
- KPN
- KT
- LG Telecom
- M1
- MetroPCS
- Mobilkom, Austria
- NTT DOCOMO
- MTS, Uzbekistan
- Orange, Austria
- Orange, France
- Piltel
- PCCW
- Rogers Wireless
- SFR
- SingTel
- SK Telecom
- SmartTone-Vodafone
- SoftBank Mobile
- STC
- StarHub
- Svyazinvest
- Tele2, Sweden
- Telecom Italia
- Telecom NZ
- Telenor, Norway
- Telenor, Sweden
- TeliaSonera, Finland
- TeliaSonera, Norway
- TeliaSonera, Sweden
- Telstra
- Telus
- TMN
- T-Mobile, Austria
- T-Mobile, Germany
- T-Mobile, US
- Verizon Wireless
- Vivo
- Vodafone
- Zain, Bahrain
- Zain, Jordan
- Zain, Saudi Arabia
- Vivacell-MTS
- Vodacom

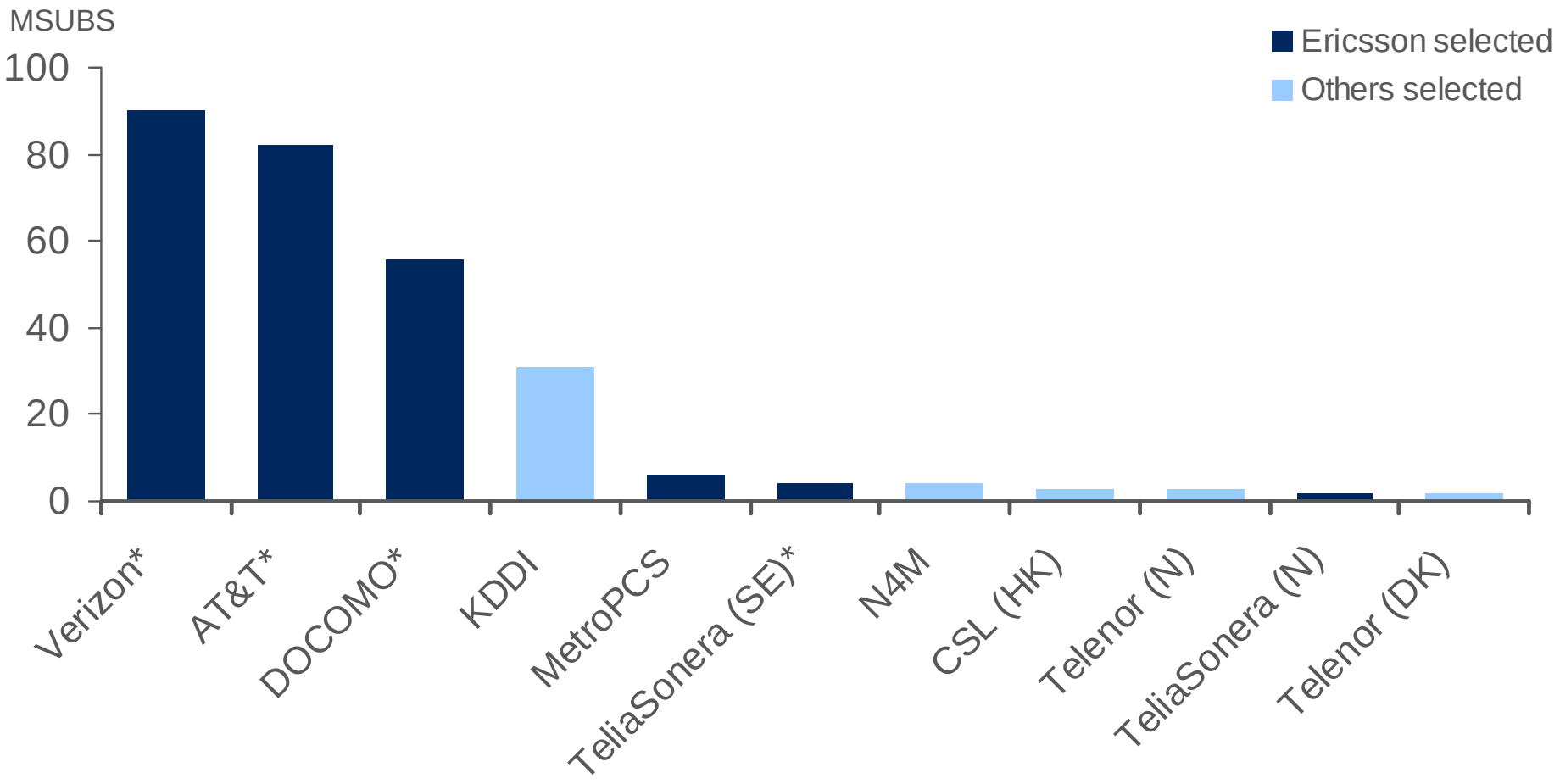
**64 operators in 31 countries committed to deploy LTE**

Up to 22 LTE networks in service by end 2010

Up to 39 LTE networks in service by end 2012

Source: GSA (7 April, 2010)

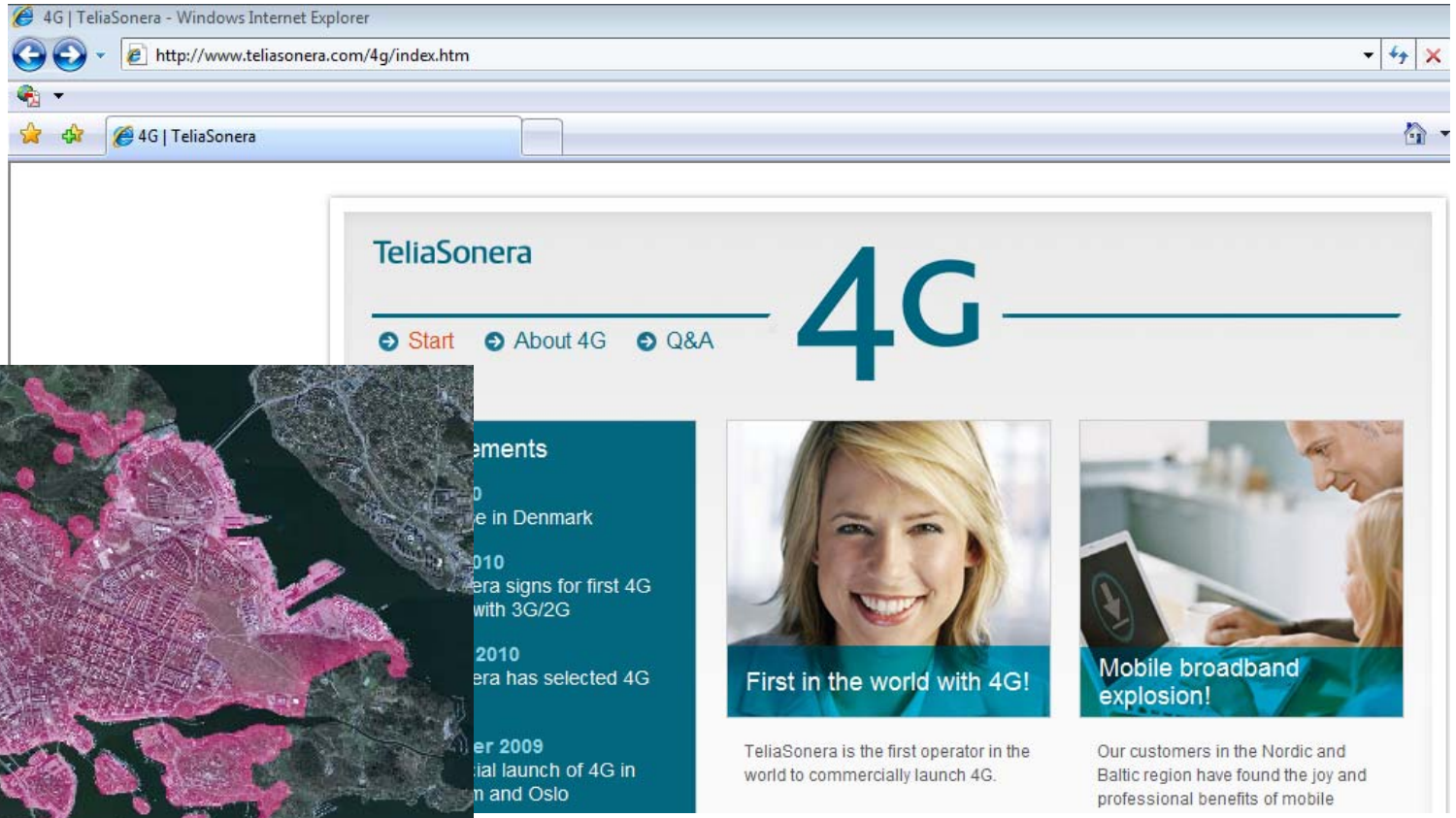
# WHO LTE COMMERCIAL CONTRACTS



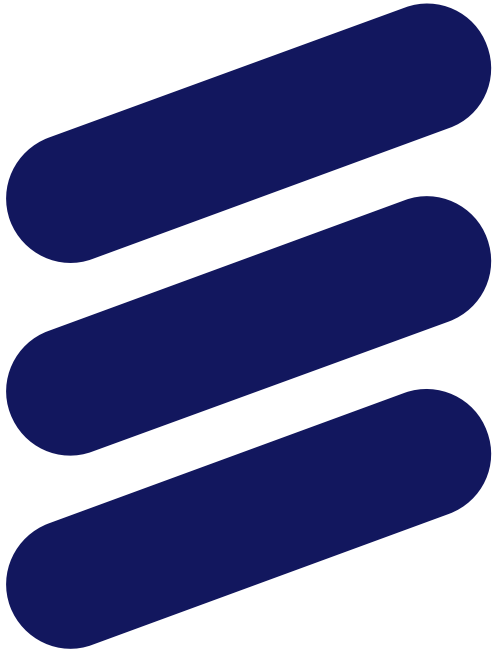

Subscriber figures from World Cellular Information Services, 12/2009

*=Other vendor involved in contract in addition to Ericsson

# TELIASONERA – FIRST LTE NETWORK




- 0.4 €/month to June 30th
- 60 €/month from July 1st
- 30 GB/month



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