



FEDERATIE VAN TECHNOLOGIE BRANCHES (FHI)

# BROADBAND TECHNOLOGY EVENT

DE KUIP,  
NOVEMBER 10, 2009



**Vision of Mobile  
Broadband networks in 2020**

**Henk Werkman**  
General Manager & KAM  
Ericsson Telecommunicatie B.V.

# ONE-SLIDER ON ERICSSON

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Our vision is to be the prime driver in an all communicating world.

## Key words for Ericsson;

**Leader in Telecommunication solutions & services**

**Strongest in Mobile**

**Financially very strong**

**Main customers are Fixed, Mobile & Cable operators**

**Worldwide serving with 80.000 employees**

“We are doing for broadband what we did for telephony 20 years ago – taking it mobile and making it affordable for more people”

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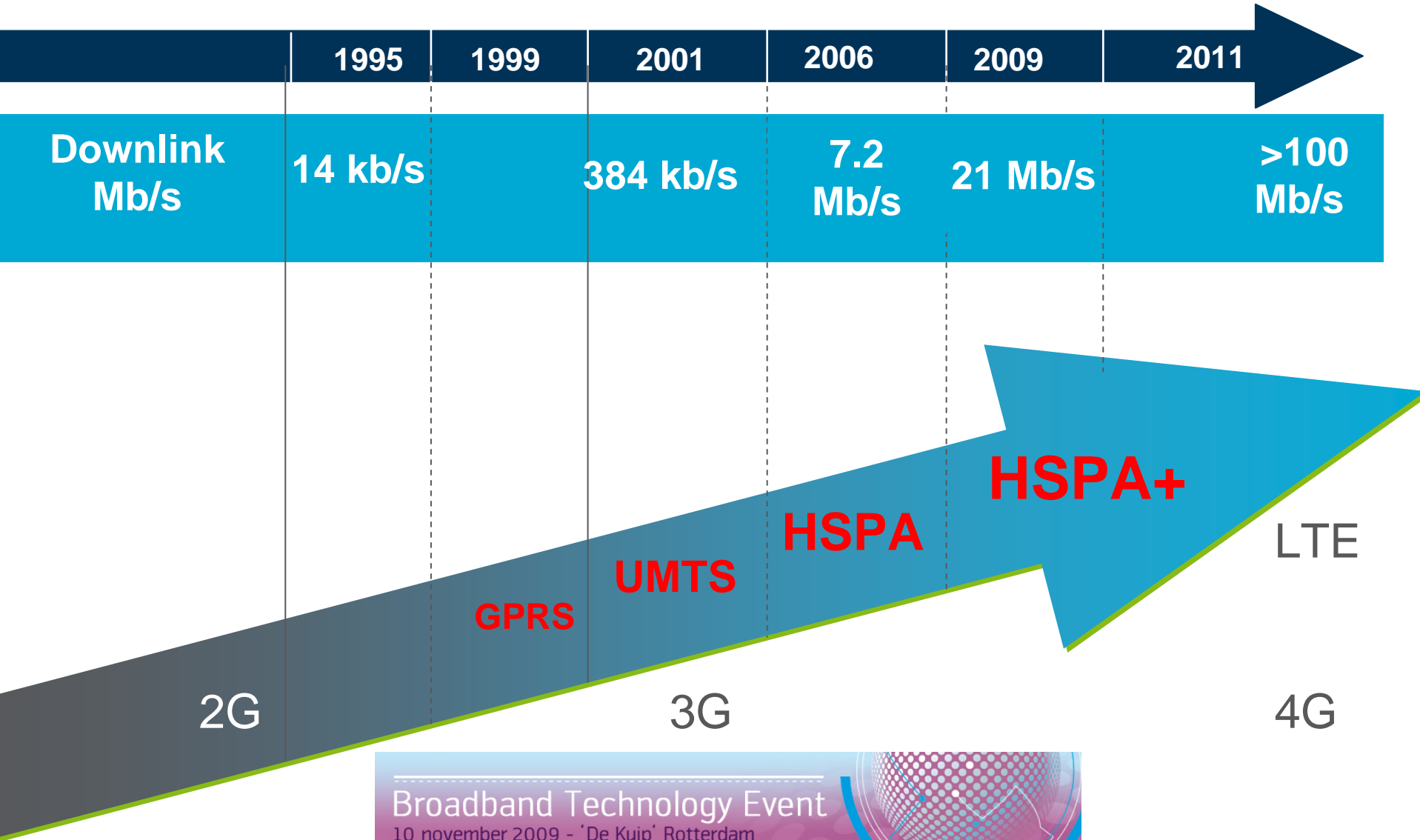
# QUESTIONS TO ANSWER

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- › 1. What is happening in the Mobile Broadband world?
- › 2. What is (not!) happening in the Netherlands?
- › 3. Which role plays the Dutch government?
- › 4. What can you expect in 2020?
- › 5. And what to do for you, here in the audience?



# FROM VOICE TO MOBILE BROADBAND

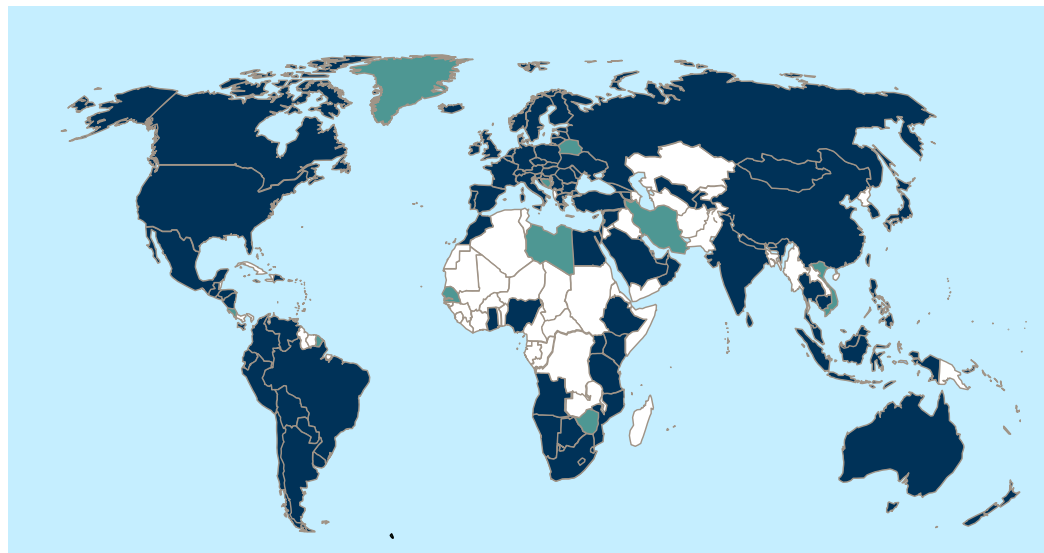


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# THE SUCCESS OF HSPA

- › 283 commercial HSPA networks
- › 119 countries
- › 1605 HSPA devices
- › 183 suppliers



- Commercial HSPA networks
- HSPA network launch commitments

Source: GSA – Global mobile Suppliers Association: August/September 2009

## Truly global ecosystem for HSPA

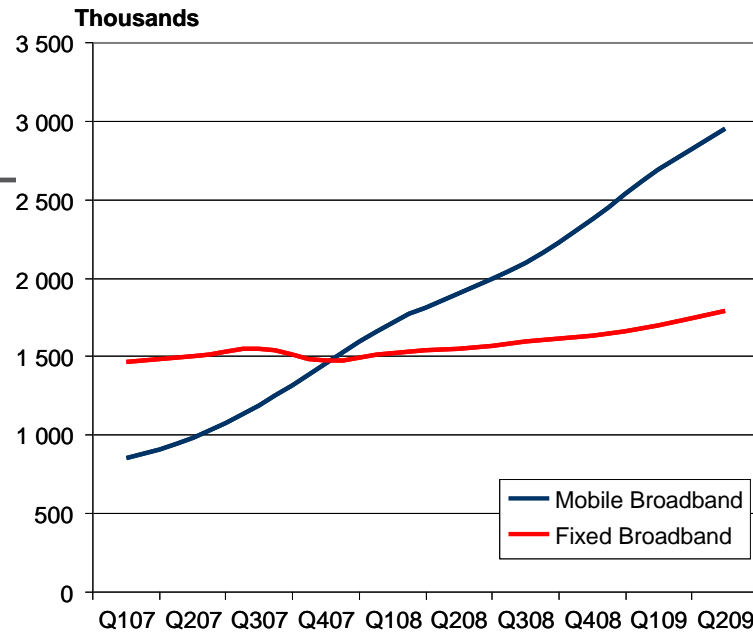
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# PORTUGAL

## ALL ON HSPA EVOLUTION

- › 3 million Mobile Broadband subscribers  
– YoY growth 55%

- › All three mobile operators launched HSPA Evolution with 21 Mbps



21  
Mbps

banda larga 21Mb €129,90  
CONCENTRADO DE INTERNET  
compre já >

banda larga

**Banda Larga Móvel**

NOVA VELOCIDADE até 21,6 Mbps

5

MÁXIMA VELOCIDADE. METADE DO PREÇO.  
AGORA COM VELOCIDADE ATÉ 21,6 MBPS E 50% DE DESCONTO NO PREÇO DO EQUIPAMENTO.

216 MBPS

Mobile Broadband larger than Fixed Broadband

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Source: ANACOM, Portuguese telecom regulator

# 28 MBPS WITH TIM IN ITALY

WORLD'S FIRST IN COMMERCIAL NETWORK

**28**  
Mbps

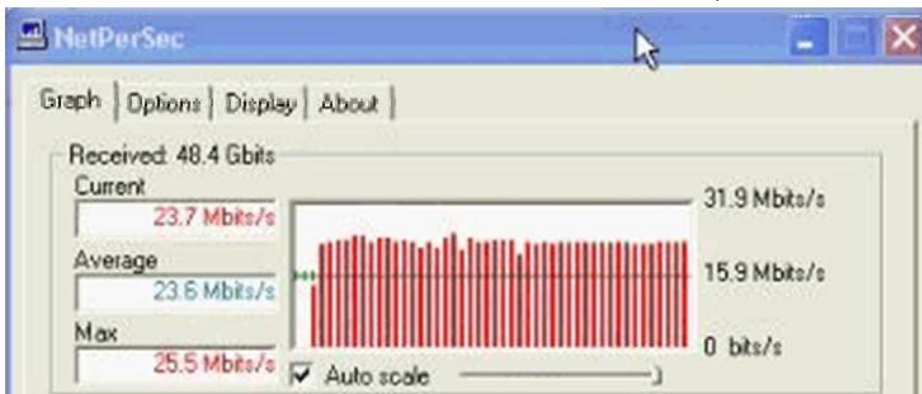
## TELECOM ITALIA: MILAN WILL BE THE FIRST CITY IN THE WORLD WITH AN ULTRABROADBAND MOBILE NETWORK AT 28 MEGABIT PER SECOND

The first mobile broadband connections at 28 Mbps/s in download and 5.8 Mbps/s in upload are now active in the city of Milan. Within October, also Rome will enjoy the same upgrade based on Ericsson technology in a 'world first' implementation.

Milan is the first city in the world to begin an "ultra-broadband" mobile service. Telecom Italia, having completed the experimentation phase, begins to develop the new mobile network platform, which is based on Ericsson technology and can reach internet connections speeds from TIM mobile phones up to 28 Mbps/s in download and 5.8 Mbps in upload.

Telecom Italia is first in Italy to launch the new development of a mobile broadband network, in line with the 3G and 4G development.

The new mobile broadband network platform is based on a dual-antenna technology (MIMO - Multiple Input Multiple Output), a solution that uses two radio antennas at the mobile phone and two at the base station. This makes it possible to provide higher speeds in data transfer. With the new technology Telecom Italia offers a higher quality experience when utilizing value-added mobile services.



Higher cell-edge throughput and spectral efficiency

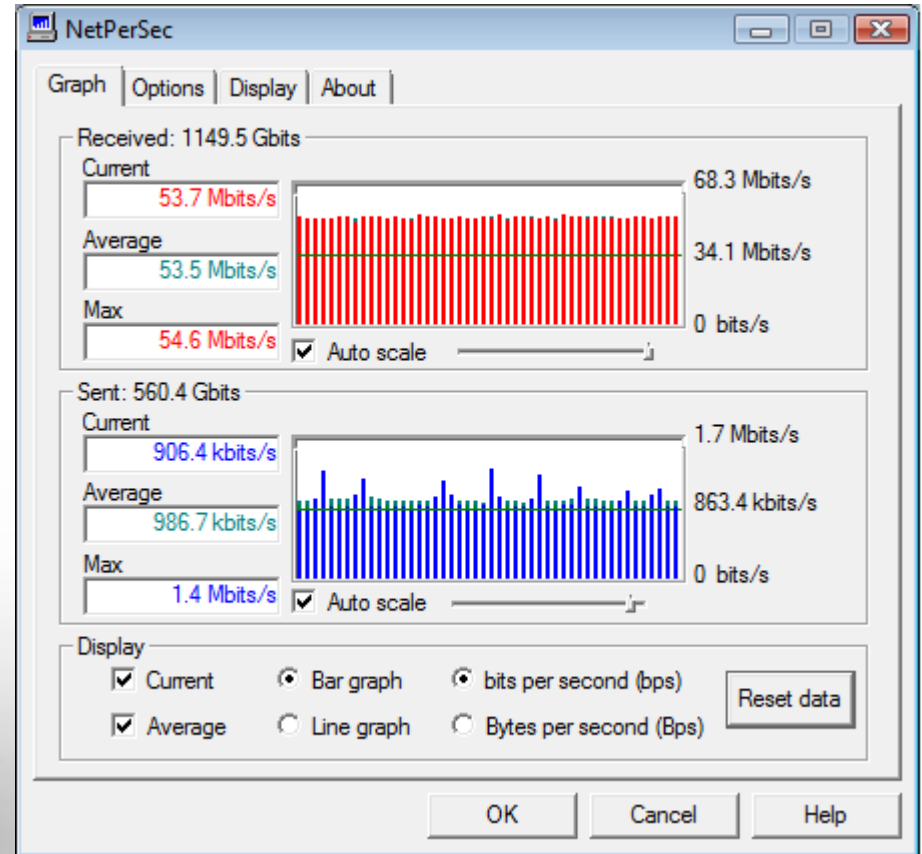
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Source: TIM Italy

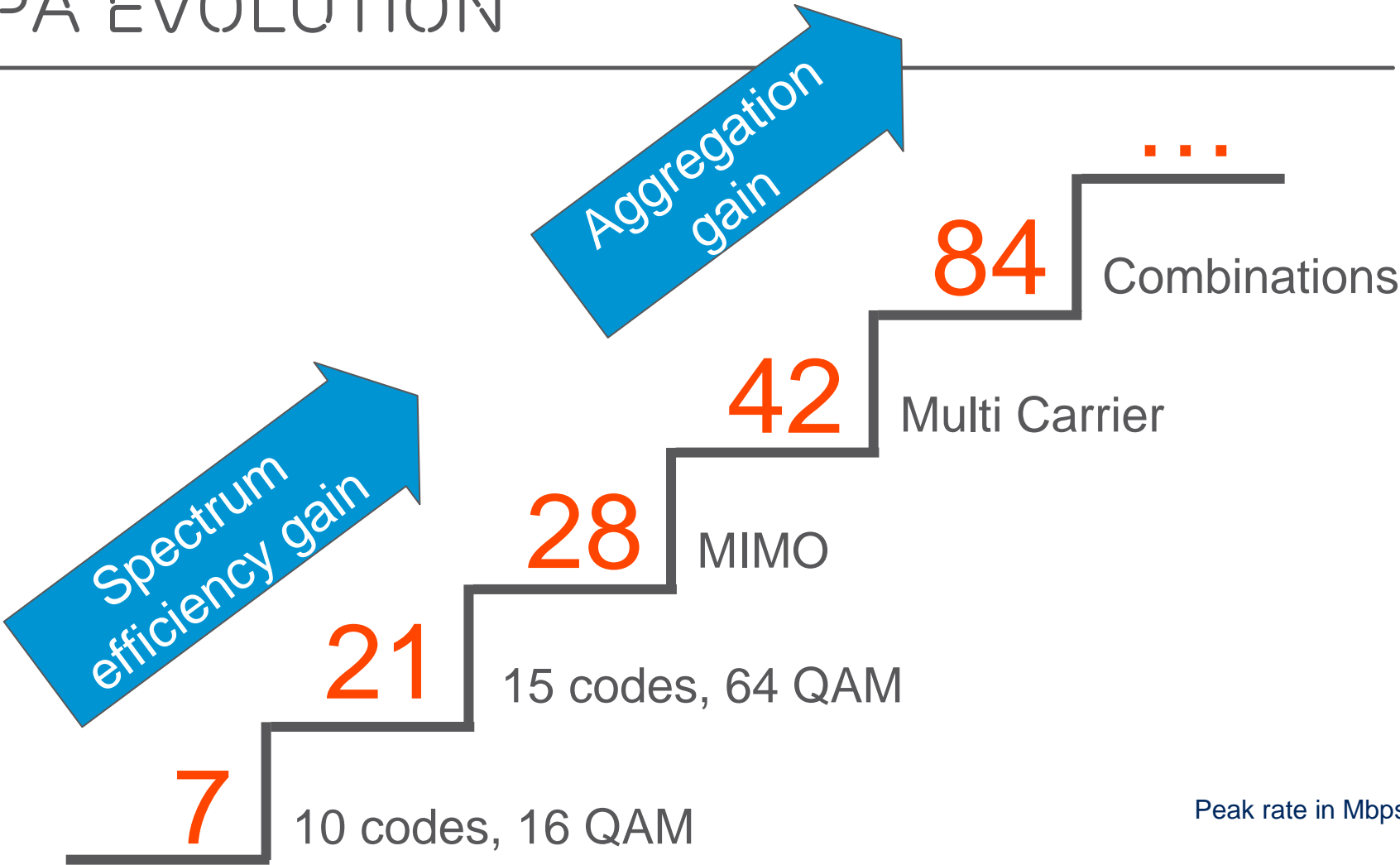
# MULTI CARRIER HSPA WITH MIMO

LIVE AT CTIA IN LAS VEGAS, APRIL 2009

**56**  
Mbps



# HSPA EVOLUTION

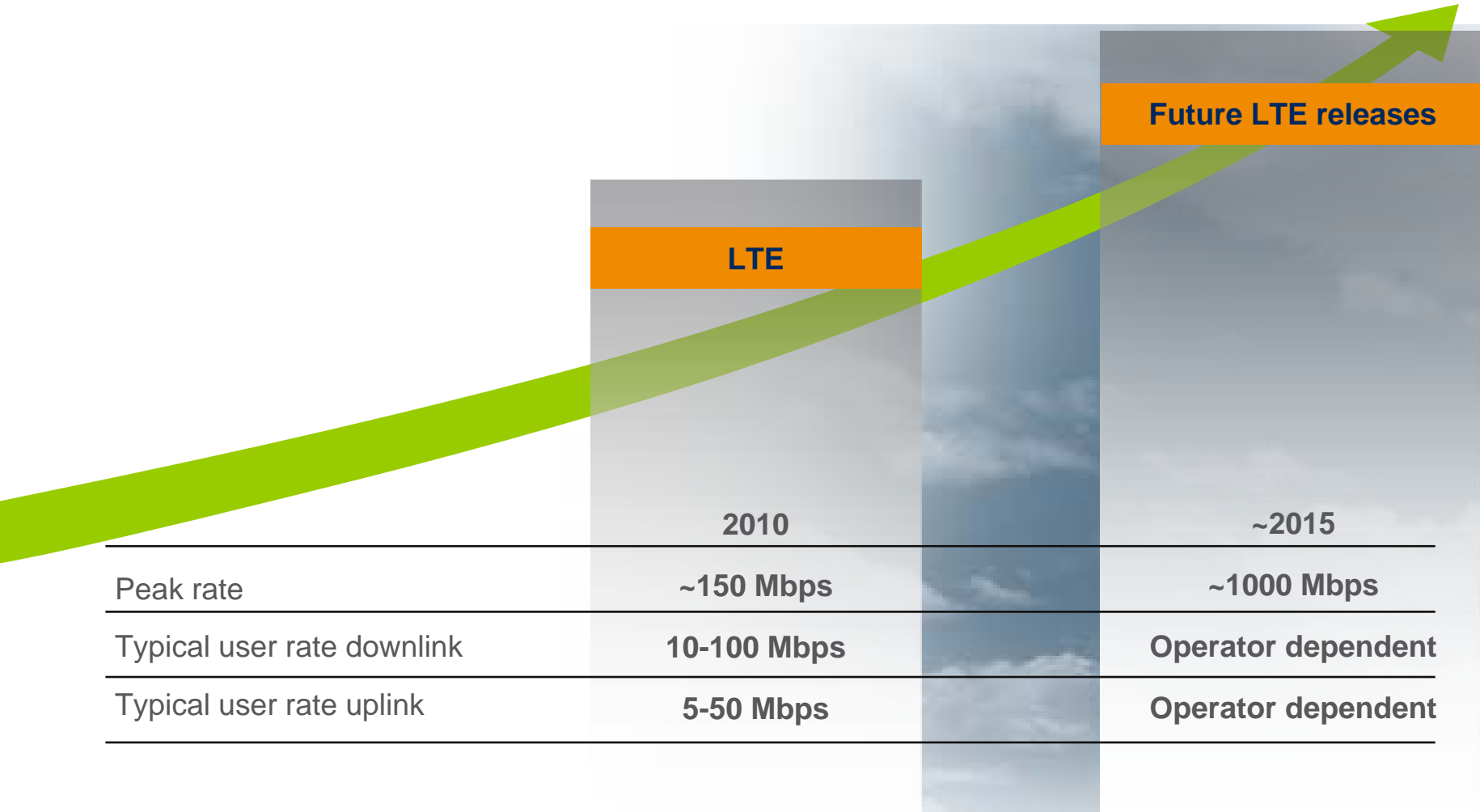


Peak rate in Mbps

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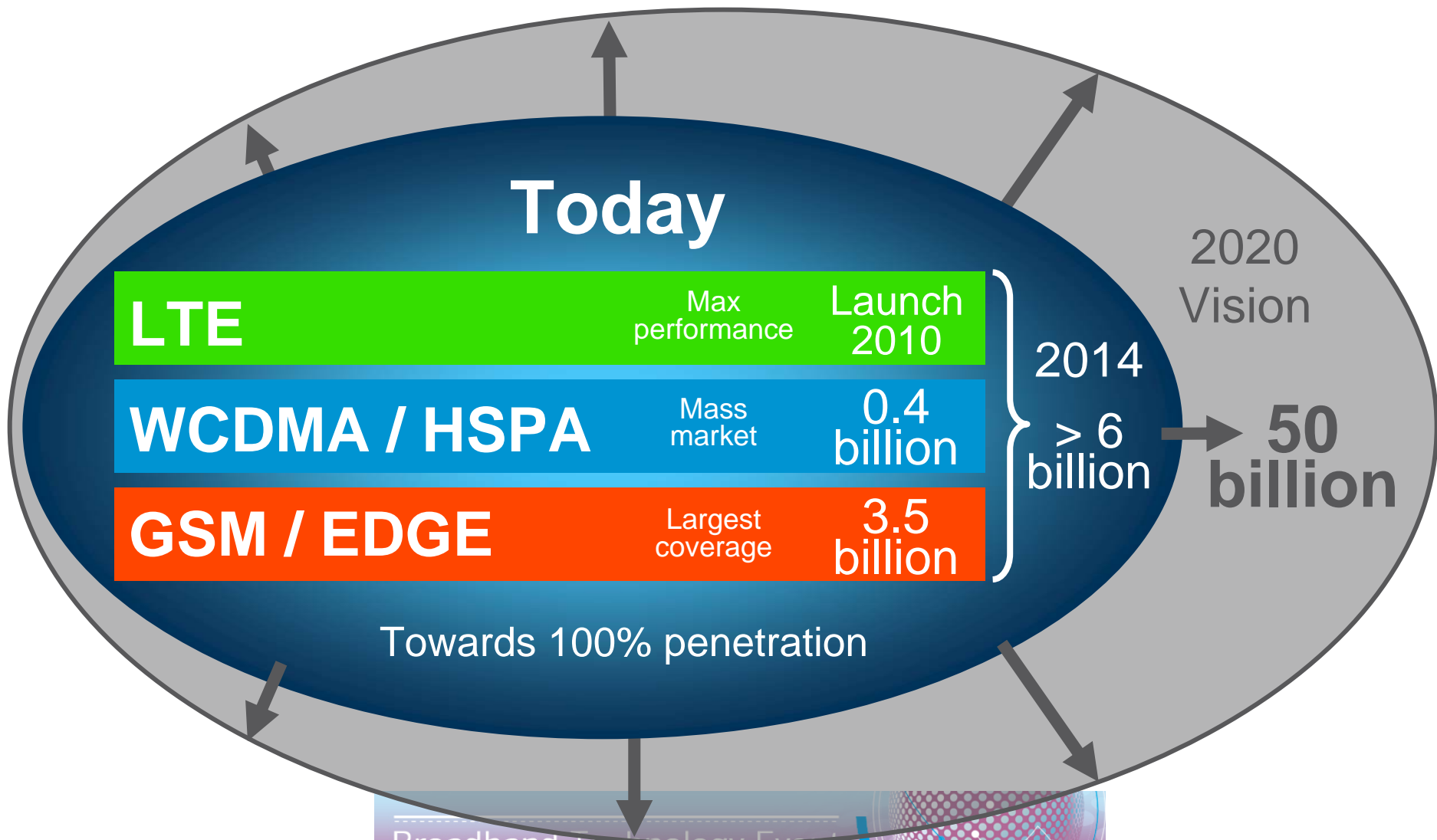
# LTE EVOLUTION



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# A WIDER VISION: EVERYTHING CONNECTED



Source: Informa & Ericsson

# QUESTIONS TO ANSWER

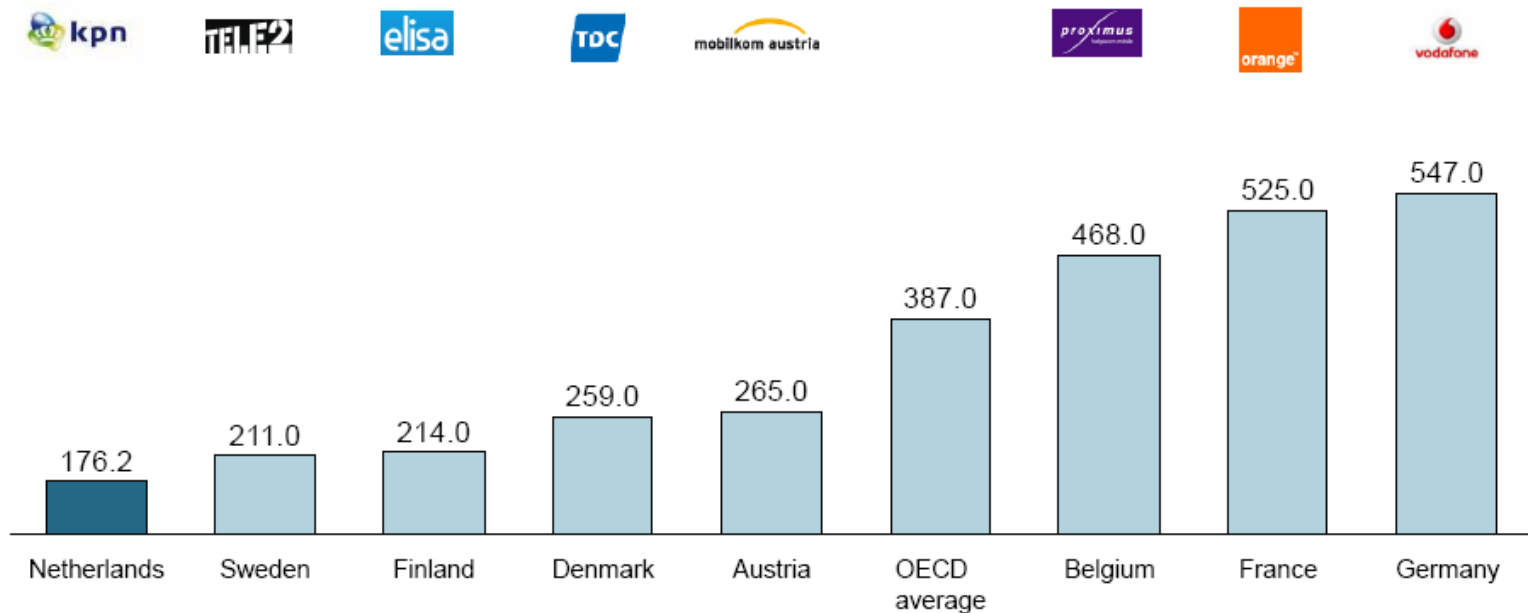
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# Mobile telephony costs for the average user in the Netherlands are among the lowest in the world

International comparison – baskets of mobile phone, medium use<sup>1)</sup> 2008



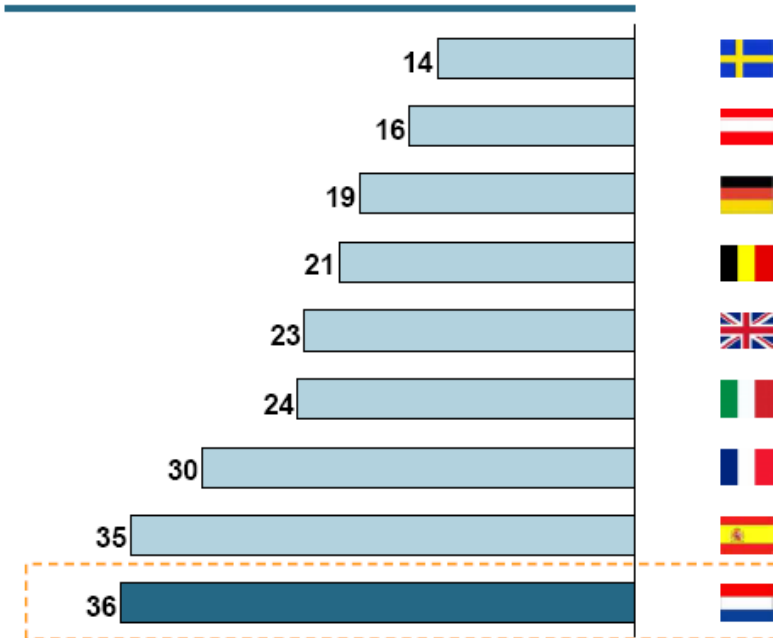
1) Based on key players, includes subscription and usage (780 minutes of voice calls, 600 SMS and 8 MMS), distributed between peak and off-peak over a one-year period

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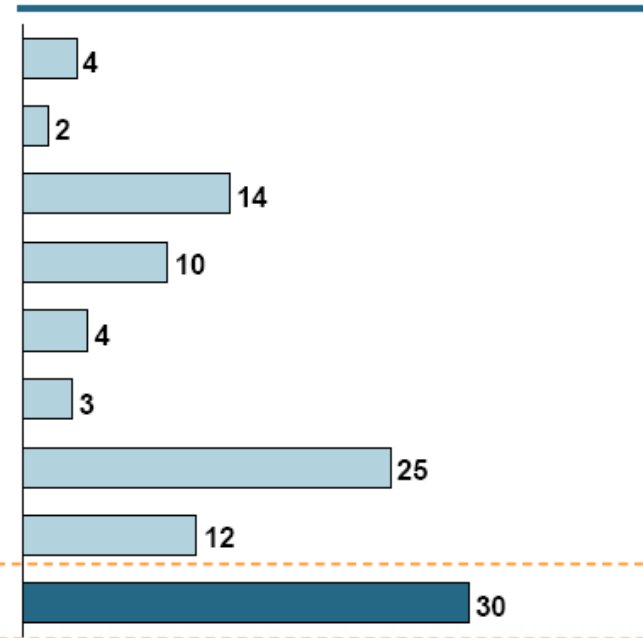
# However, mobile broadband is still very expensive in the Netherlands

## Mobile broadband 2008

AVERAGE MONTHLY RATE [EUR]<sup>1)</sup>



AVERAGE RATE PER GB [EUR]



1) Calculated average of available consumer and business mobile broadband packages of all mobile networks; excluding VAT



# MOBILE BROADBAND PENETRATION

- › Netherlands End 2008:
  - 300.000 MBB subs
  - 5.935M fixed BB subs
  - 4.8% penetration
- › Average EU23+2:
  - 11.6% penetration

Figure 6.8: Mobile broadband market data (EU23+2 2008)

Country	Fixed BB subs	Mobile BB	Share	MBB market value
Austria	1,746,000	940,000	35.0 %	€ 109 m
Belgium	2,868,000	120,000	3.9 %	€ 42 m
Czech Rep	1,770,000	280,000	13.5 %	€ 80 m
Denmark	2,035,000	240,000	10.5 %	€ 64 m
Estonia	325,000	30,000	9.5 %	€ 7 m
Finland	1,616,000	250,000	13.4 %	€ 63 m
France	17,008,000	1,010,000	5.6 %	€ 303 m
Germany	22,691,000	1,890,000	7.7 %	€ 460 m
Greece	1,412,000	100,000	6.6 %	€ 21 m
Hungary	1,592,000	420,000	23.9 %	€ 67 m
Ireland	856,000	270,000	23.6 %	€ 35 m
Italy	11,160,000	2,050,000	15.5 %	€ 476 m
Latvia	370,000	40,000	2.4 %	€ 2 m
Lithuania	568,000	120,000	16.8 %	€ 17 m
Luxembourg	130,000	10,000	7.2 %	€ 2 m
Netherlands	5,935,000	300,000	4.8 %	€ 153 m
Norway	1,555,000	260,000	14.3 %	€ 58 m
Poland	3,848,000	740,000	16.1 %	€ 109 m
Portugal	1,719,000	880,000	33.8 %	€ 256 m
Slovakia	569,000	220,000	27.4 %	€ 57 m
Slovenia	397,000	50,000	10.4 %	€ 6 m
Spain	8,807,000	1,150,000	11.5 %	€ 409 m
Sweden	2,806,000	770,000	21.5 %	€ 105 m
Switzerland	2,472,000	300,000	13.9 %	€ 99 m
UK	16,942,000	2,200,000	11.5 %	€ 384 m
<i>Total</i>	<i>111,198,000</i>	<i>14,640,000</i>	<i>11.6 %</i>	<i>€ 3,385 m</i>

Source: Berg insight

Source: Berg Insight (May 2009)

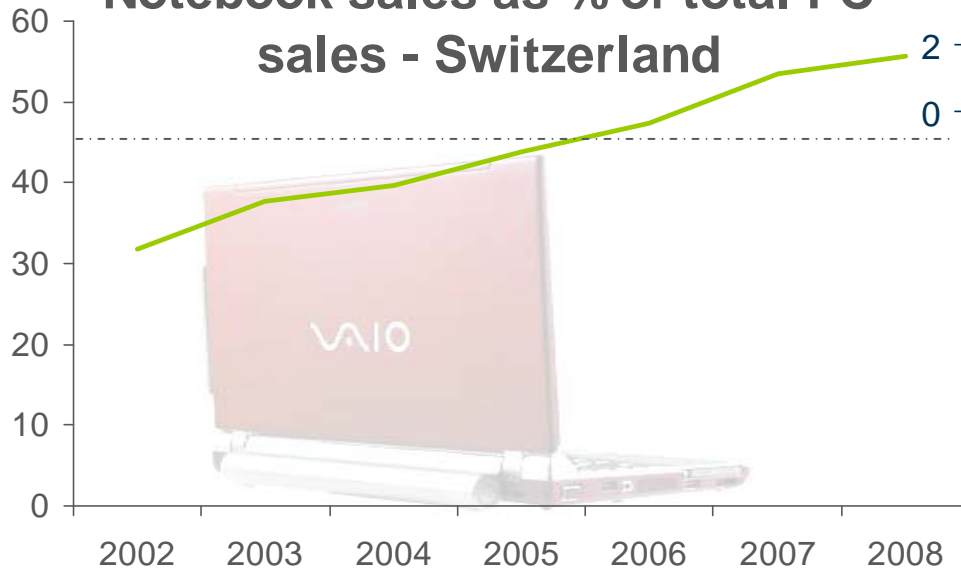
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# DEVICES PLAY A KEY ROLE AS WELL

- The sales of notebooks has exceeded those of desktops since 2007 in Switzerland
- In 2008, 60,000 netbooks were sold in Switzerland

**Notebook sales as % of total PC sales - Switzerland**



**Smartphone sales as % of total - worldwide**

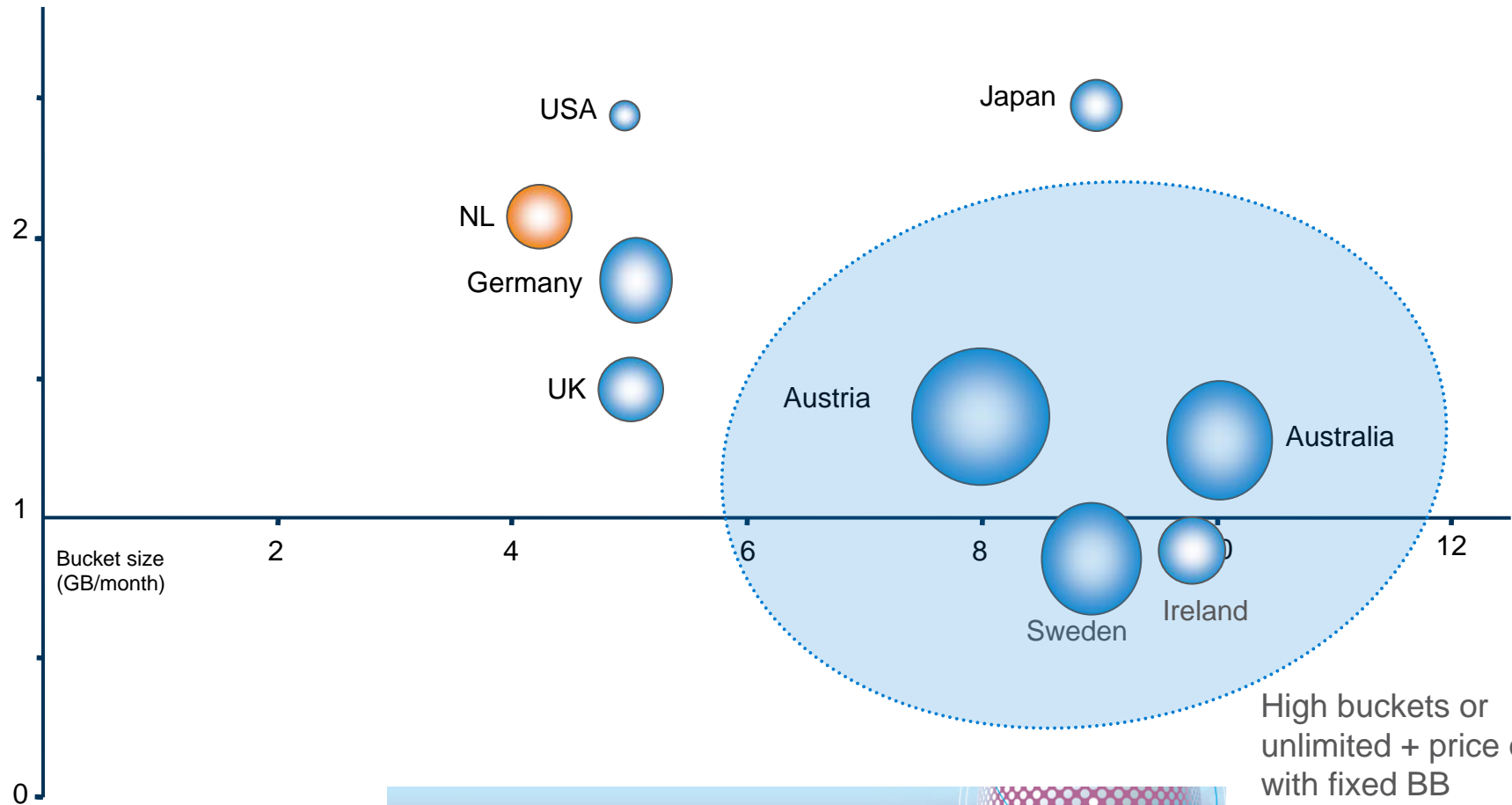


Q1 07 Q2 07 Q3 07 Q4 07 Q1 08 Q2 08 Q3 08 Q4 08

- Smartphones have continuously gained market share around the world
- They have been significantly driving mobile traffic due to their high consumer appeal

# LARGEST UPTAKE WHEN PRICE ON PAR WITH FIXED

Price Index  
(MBB/FBB)



High buckets or unlimited + price on par with fixed BB

Source: Ericsson

Commercial in confidence



# MOBILE BROADBAND

FROM HOUSEHOLDS TO INDIVIDUALS AND DEVICES

## Connected devices

### Smartphones

### Netbooks

### Notebooks

### Fixed Broadband

### Fixed Telephony

### Mobile Telephony



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# NEW MOBILE BROADBAND MODULE

C3607W



Mobile Broadband on any device

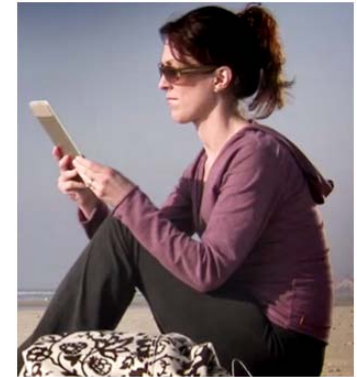
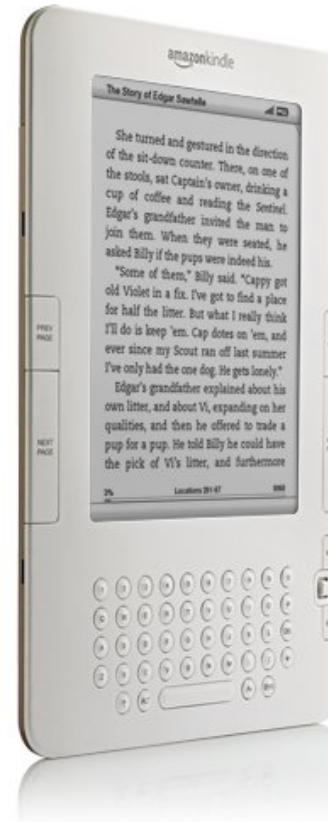
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# NEW BUSINESS MODELS HAVE ARRIVED



amazon.com



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# MBB SPECTRUM IN THE NETHERLANDS



 = currently licensed to KPN, Vodafone, T-Mobile

Digital dividend, currently used by DVB-T  
Expected availability in 2013



Technology neutral in 2010 (e.g. UMTS-900)  
Licenses valid until 2013



Technology neutral in 2010 (e.g. LTE-1800)  
Licenses valid until 2013  
Former Telfort license 2x15 MHz unused



Technology neutral in 2010 (e.g. LTE-2100)  
Licenses valid until 2017  
Former Telfort license 2x10MHz unused



Auction in Apr/May 2010 (Techn. neutral)  
Regulator wants 6 licenses !



# QUESTIONS TO ANSWER

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A globe is shown with various scenes and images overlaid on its surface. The scenes include a city at night, a traditional building with red lanterns, a field of yellow flowers, a field of green trees, and a blue landscape with water and buildings. The text "Vision 2020" is overlaid in the center of the globe.

# Vision 2020

# LIKELY THRUTHS IN 2020



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# LIFE IN 2020

ERICSSON 

LIFE IN 2020



**MINAKO ARAGAKI**  
AGE 86 RETIRED JAPAN



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# Virtual Cubicland

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# Living Table

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# Dr in a box





# Picture Tray

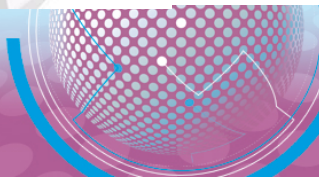




# e wall- paper



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# QUESTIONS ANSWERED

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- › 1. What is happening in the Mobile Broadband world?
  - The global mobile broadband market is driven by data, led by laptops and smart phones, but also M2M
- › 2. What is (not!) happening in the Netherlands?
  - The NL market seems lagging behind compared to rest of Europe
- › 3. Which role plays the Dutch government?
  - Upcoming spectrum auctions will increase competition and capabilities for mobile broadband
- › 4. What can you expect in 2020?
  - Several scenarios will be created by the market, as we see now based on the 9 likely truths
- › 5. And what to do for you, here in the audience?



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THE FUTURE BELONGS TO  
THOSE WHO PREPARE  
FOR IT TODAY

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# THANK YOU FOR YOUR ATTENTION !

## And, let's talk more Mobile Broadband !

- › Meet me afterwards !
- › Or, Hendrik.Werkman@Ericsson.com
- › Or, Meet us online

[www.ericsson.com/mobilebroadband](http://www.ericsson.com/mobilebroadband)

[www.ericsson.com/vision2020](http://www.ericsson.com/vision2020)





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