



# SHAPING IRELAND'S FUTURE

COMMUNICATIONS FOR  
THE SMART ECONOMY

The Conrad Hotel  
Tuesday 13 October, 2009

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Ericsson



# The new communication world

- a platform for innovations



**Torbjörn Nilsson**

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# Topics

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The changing face of communications

New business models

The new media landscape

Internet/Media goes mobile

Summary





# The changing face of communications

Hundreds of millions of videos watched on **YouTube** every day. Every minute, 10 hours of video is uploaded. 14 billion videos viewed monthly in the U.S. alone. 363 million users.



Hulu, BBC etc makes TV available on internet

**Facebook** has over 300 million active users worldwide. 850 million photos and 8 million videos are uploaded monthly. 60 million+ mobiles.

facebook

**MySpace** dominates the U.S. market with 76 million unique users. Facebook is expected to surpass MySpace also in U.S by 2010.

myspace

**Mobile Internet** from occasional activities to daily part of peoples lives. 63 millions of US mobile phone users connected. Mobile Internet usage i Japan matches PC usage.



>10 million songs, 40 000 TV episodes and 5 000 movies available on **iTunes/iPone, 85 K apps**



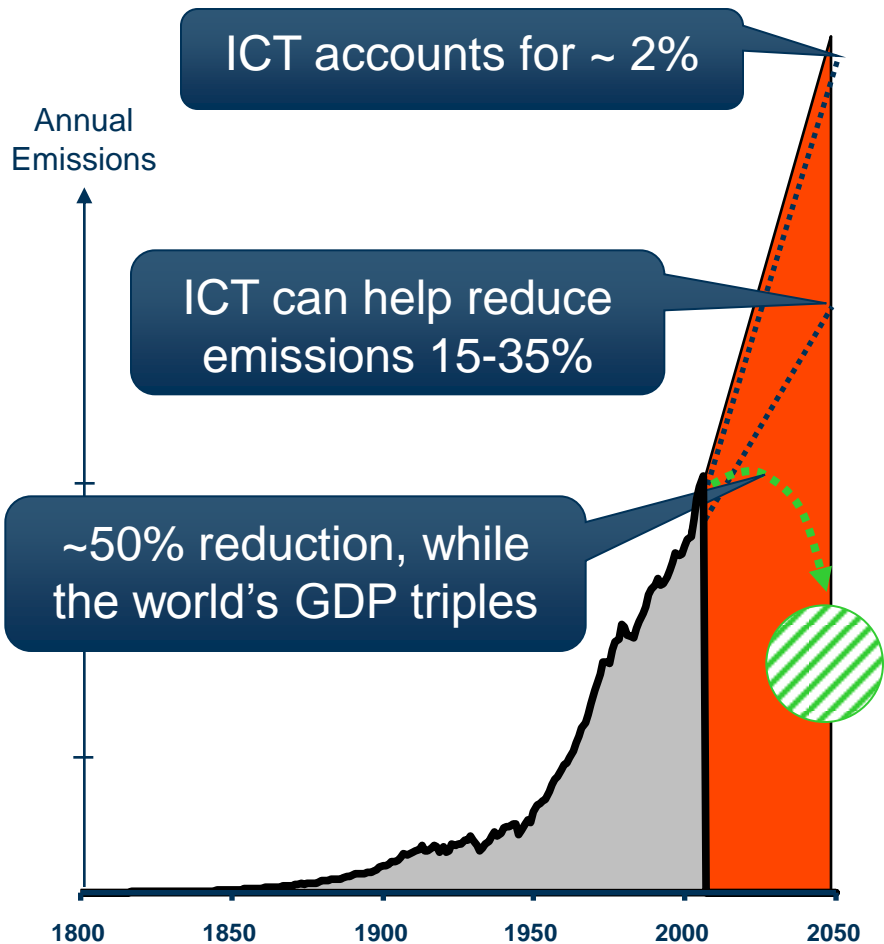
World of Warcraft, the subscription-based online game, has more than 11.5 million players. Wrath of the Lich King sold 2.8 million copies in 24h



**Barbie Girls** world, designed for 7-12 year old girls, is the fastest growing virtual community in history. 3 million registered users after 60 days and now over 18 million users.

New behaviors and user patterns driven mainly by "Digital natives"

# Sustainability potential of ICT



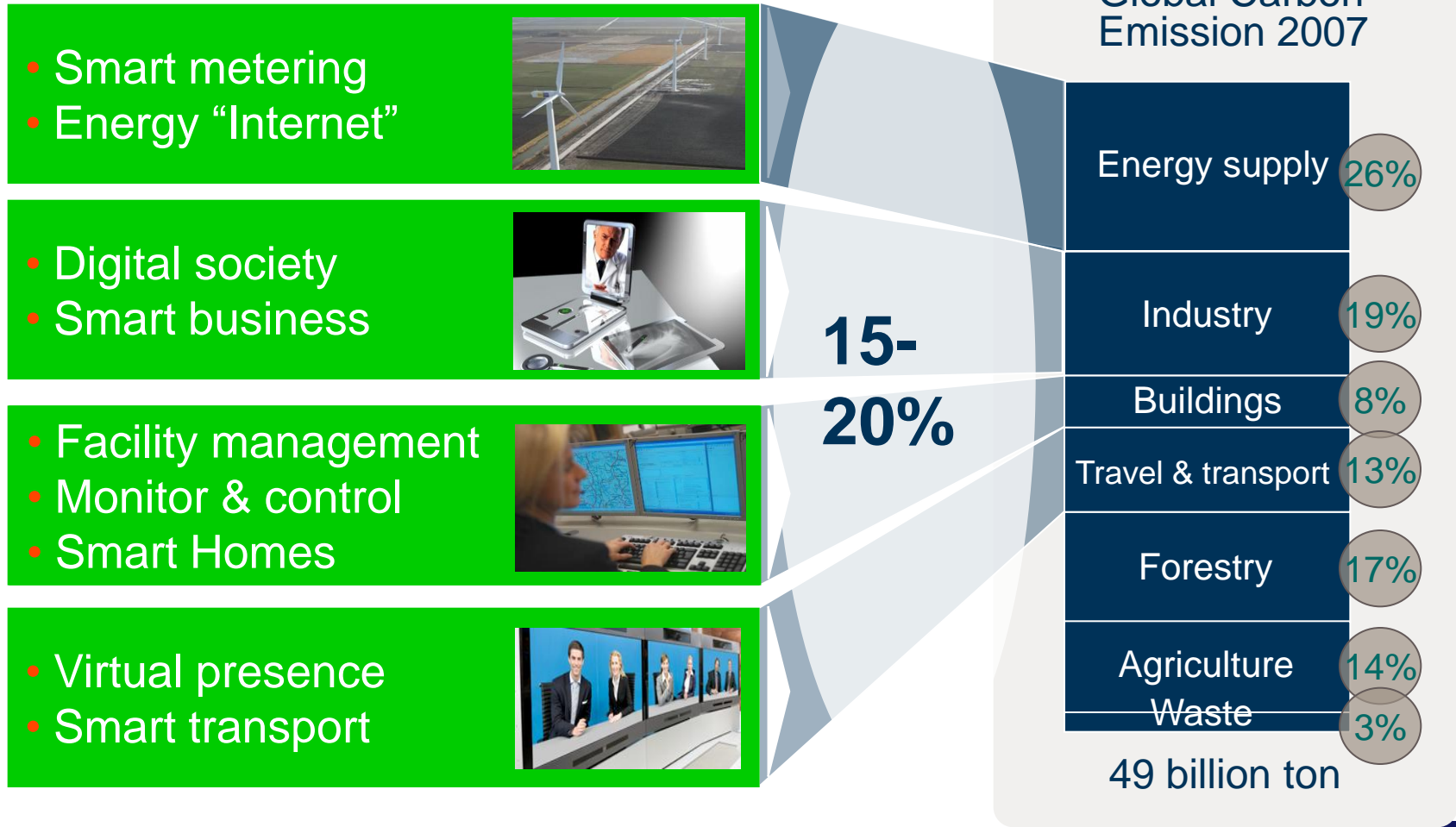
1 year



1 hour

# ICT contribution potential

- Verticals as business opportunity



Source: IPCC





# The broadband networks will be the backbone of the economy and sustainable society

Widespread use of broadband would increase Australian GDP with 1.4 % after 5 years (AUD 15 billion)

10% of British Telecom employees work from home or offices with remote access, which has reduced travel with ~69 million miles per year

A 4% broadband growth could give 1.8 million jobs and \$132 billion in payroll over 10 years in

Reduce US greenhouse gas emission by 1 billion tons over 10 years (11% of US oil import converted into energy saved)

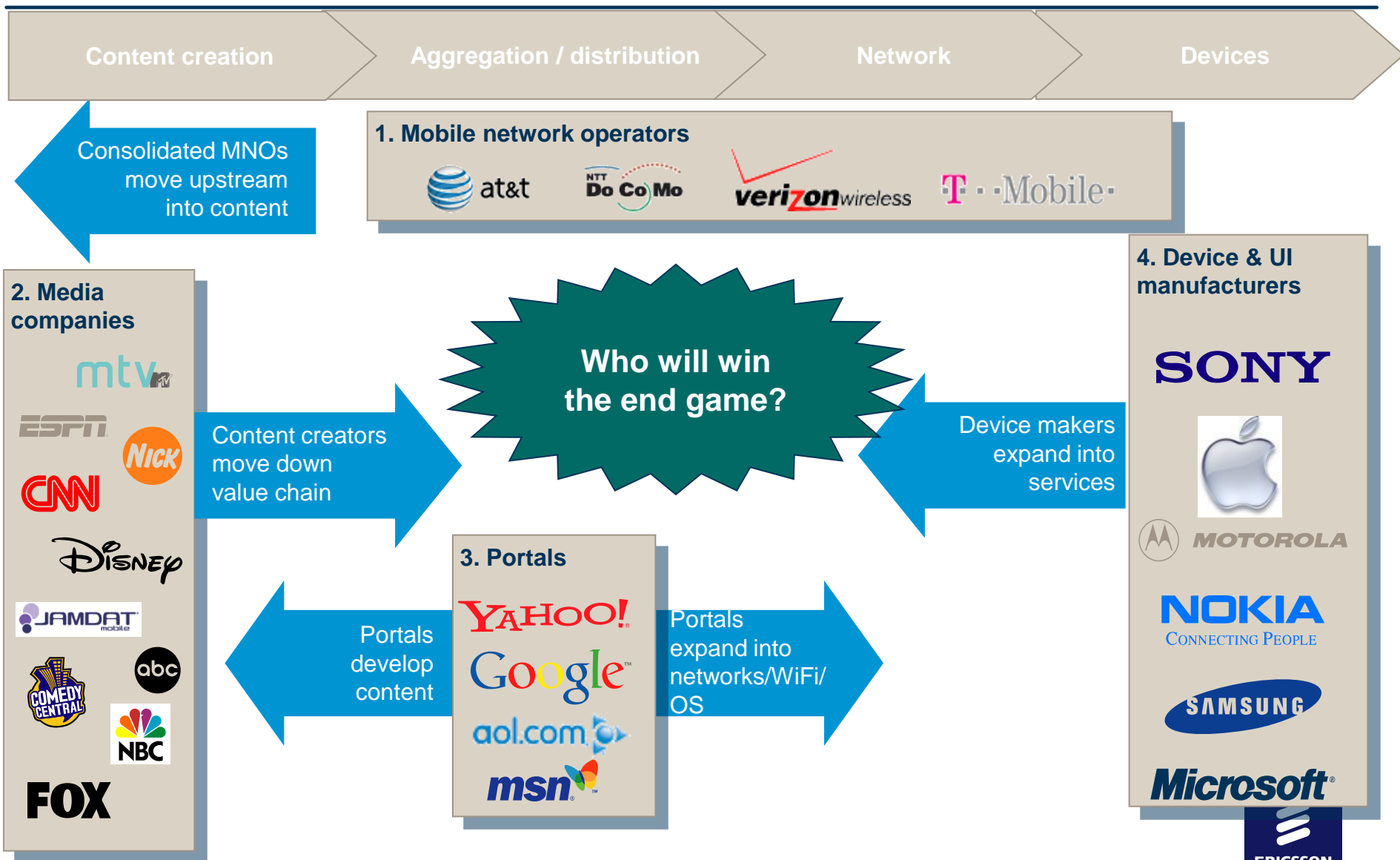
Telstra's mobile broadband enables productivity gains of 9-27%

US productivity gains from mobile broadband will generate USD 860 billion in additional GDP over next decade

Emergency rooms in Arizona connects rural doctors with urban specialists

# Industry boundaries are beginning to blur...

-creates new business models and eco-systems



# Traditional vs internet operators

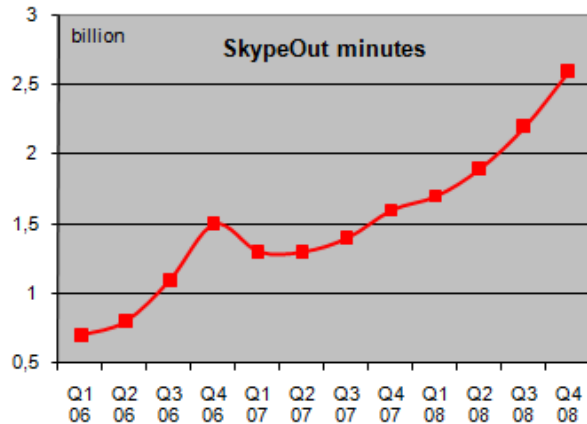
Unregulated world vs regulated world

## Internet Players-OTT

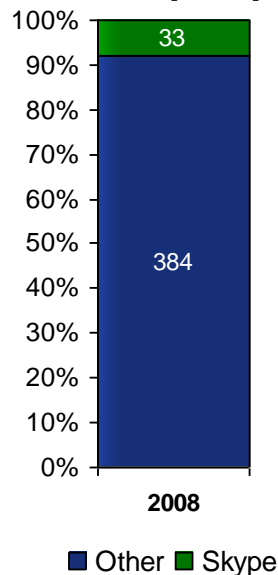
## Traditional Operators



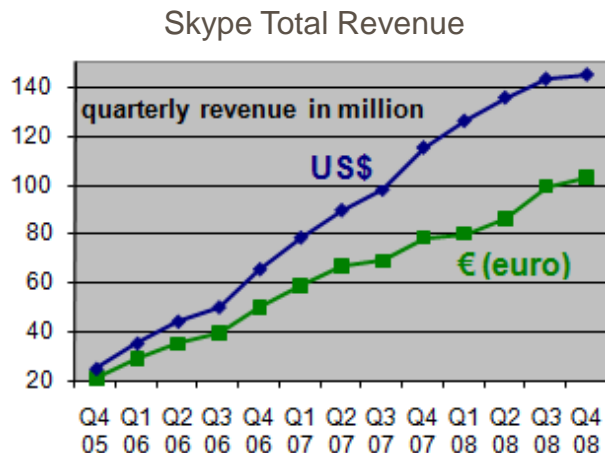
# Skype become the largest long distance phone company in 2008



**International Telephone Traffic**  
Minutes [billion]



- International telephone traffic grew from 71.7 billion minutes in 1997 to 417 billion minutes in 2008
- The average for an international call has fallen by over 80% in the last 15 years.
- By contrast, international Skype traffic grew 41% last year to 33 billion minutes, delivering 8% of all international traffic
- 481 million registered users



Source: TeleGeography, Skype Numerology

# Internet goes to TV – New MediaWorld

Example: Yahoo! TV Widgets on Sony, Samsung, LG



Broadcast, Over the top services (open Internet) and IPTV(25 Mill subs) in the same TV set

TV Widgets provides the Internet in good harmony with the simplicity and reliability of the television.

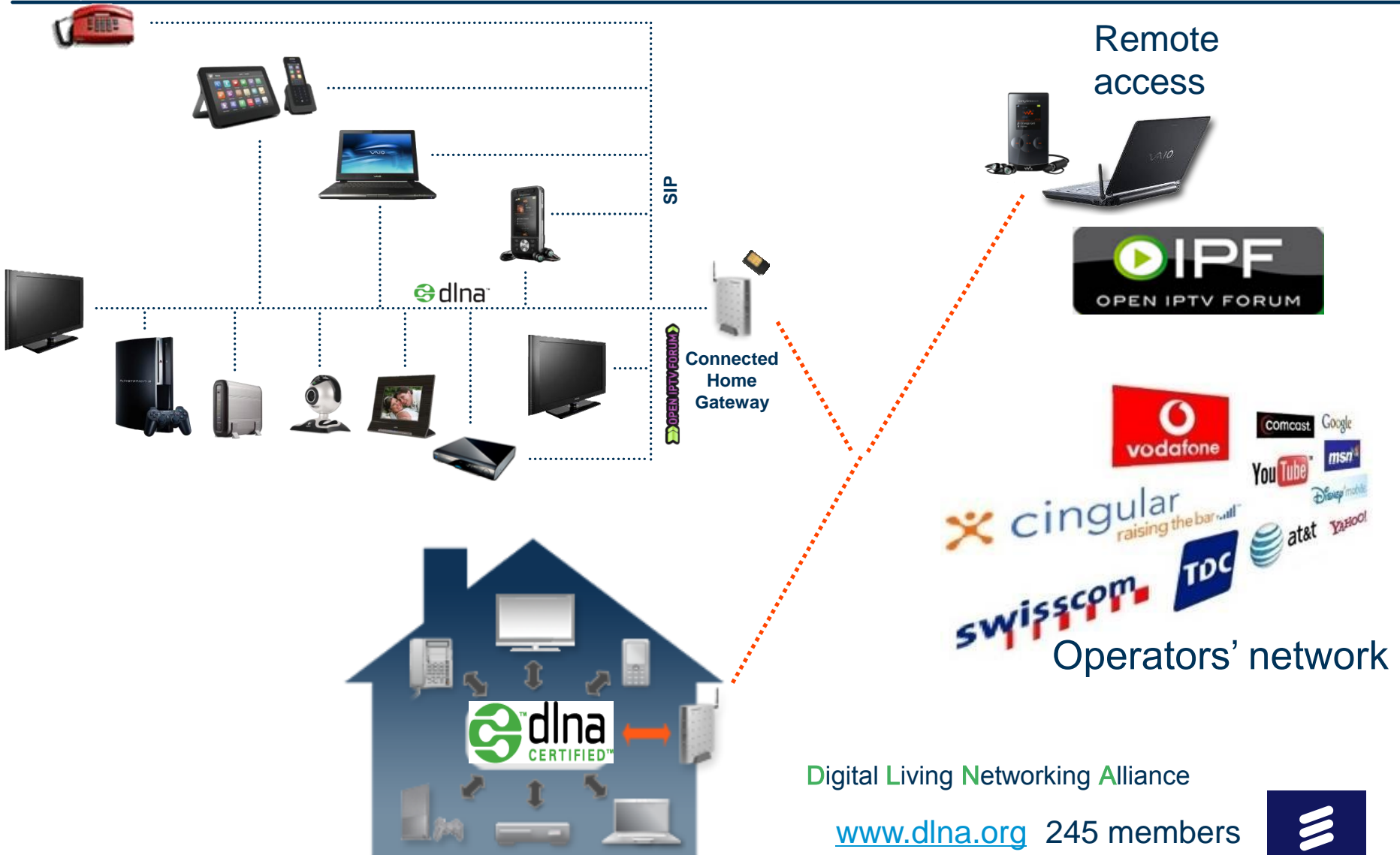
TV Widgets deliver a Cinematic Internet experience by converting Web services like Yahoo!® Finance, eBay®, CBS, Flickr®, USA Today®, and Twitter®, for the TV.

Regulated and unregulated access in same device



# Digital Home/Connected Home

- Fast growth of home networks, from 4.7 B-devices to 11.7 in 2013 (In-Stat)



Digital Living Networking Alliance

[www.dlna.org](http://www.dlna.org) 245 members



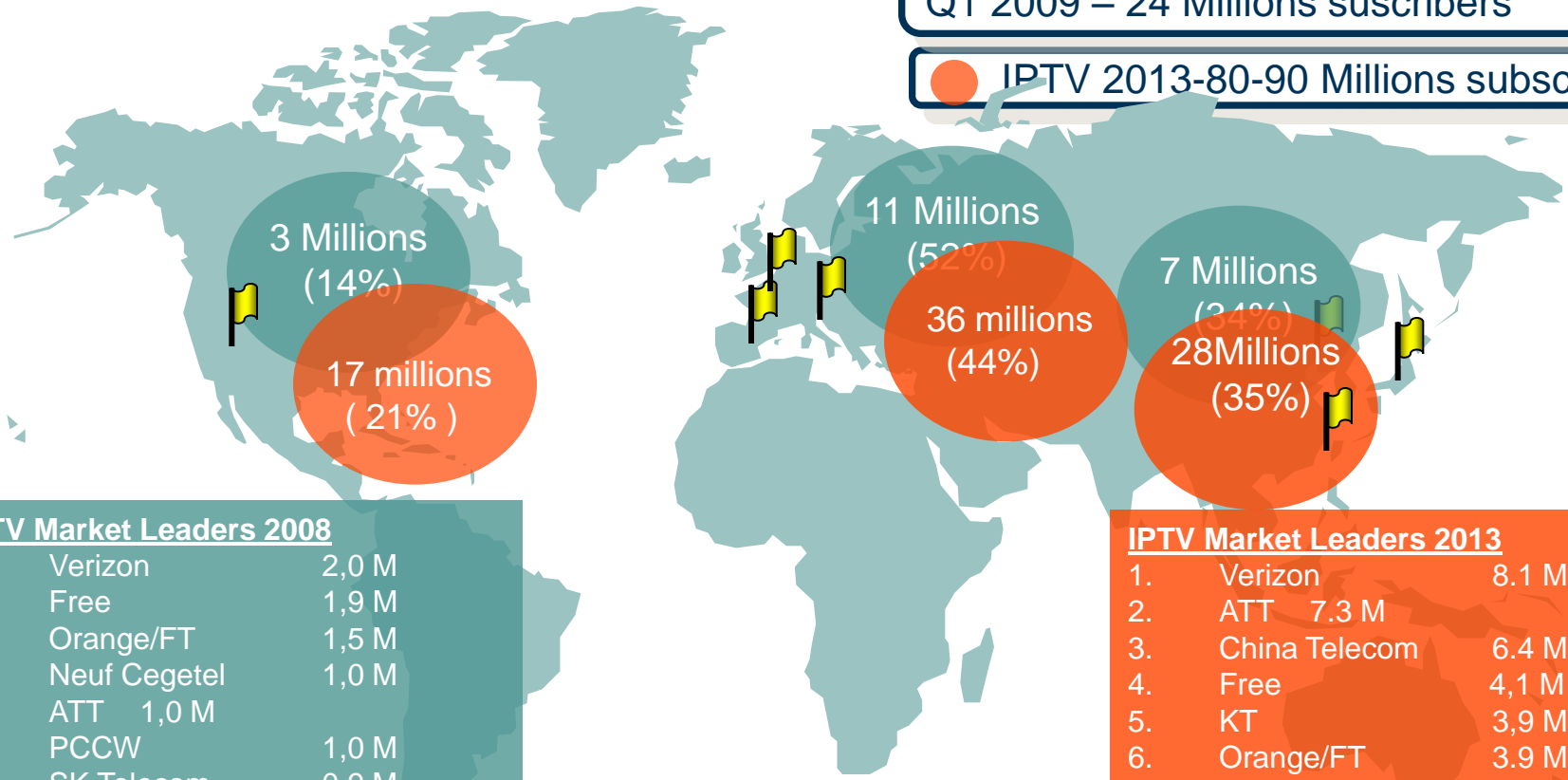


# Rapid growth in the IPTV market

- in especially US and China

● IPTV 2008 - 21 Millions subscribers  
Q1 2009 – 24 Millions subscribers

● IPTV 2013-80-90 Millions subscribers



**IPTV Market Leaders 2008**

1.	Verizon	2,0 M
2.	Free	1,9 M
3.	Orange/FT	1,5 M
4.	Neuf Cegetel	1,0 M
5.	ATT	1,0 M
6.	PCCW	1,0 M
7.	SK Telecom	0,9 M
<b>Total</b>		<b>9,3 M (44%)</b>

**IPTV Market Leaders 2013**

1.	Verizon	8.1 M
2.	ATT	7.3 M
3.	China Telecom	6.4 M
4.	Free	4,1 M
5.	KT	3,9 M
6.	Orange/FT	3,9 M
7.	PCCW	3,3 M
<b>Total</b>		<b>37 M (45%)</b>

🚩 **Fast growing countries**

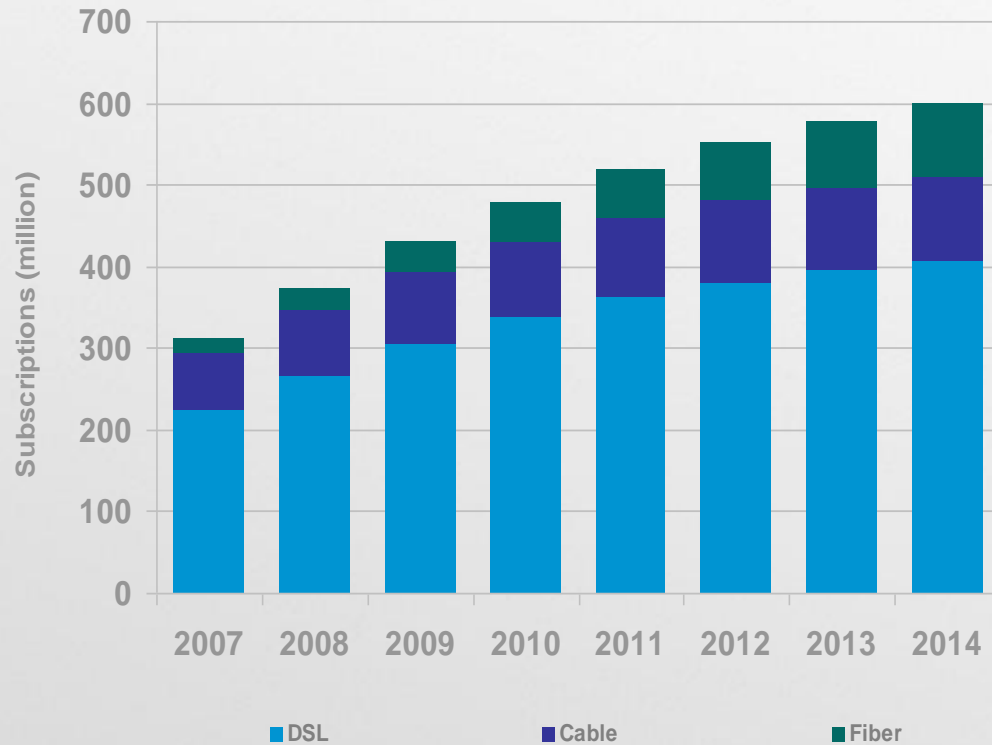
Source: MRG, Ericsson 2008



# Fixed broadband subscriptions

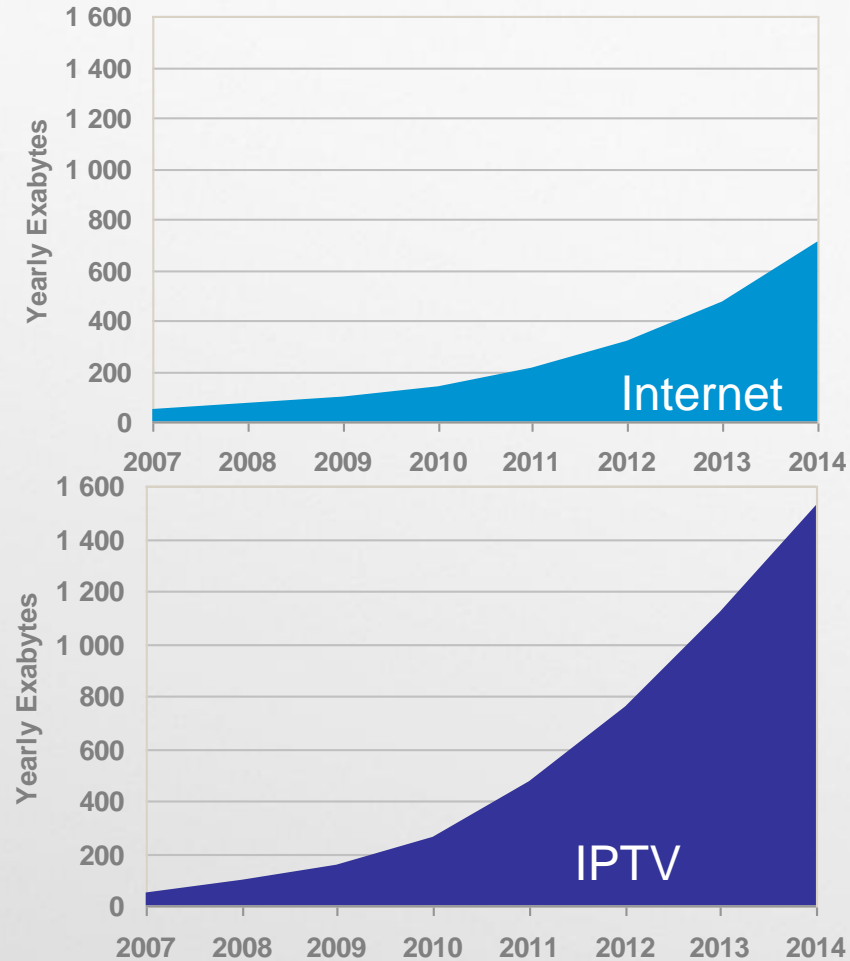
-twofold subscriptions and over tenfold traffic growth

Fixed broadband subscription forecast



- FTTx fast growing-towards 100Mb/s
- Largest markets;China,US,Japan – Regulation key
- Video/TV from 60-70% to 90% of Internet in 2014
- 120 million IPTV subs 2014

Traffic growth-last mile



Source: Ericsson,Dittberner,



# Internet & TV experience going mobile

“ I want my Internet everywhere “

## 1. The Notebook

- Already here
- Bundled offerings with notebook and mobile broadband



## 2. The Consumer PC/ Smartphones

- Netbooks
- Smartphone's/Internet
- VoIP? / OTT services
- Cloud computing model



## 3. Other devices

- MIDs, navigation, gaming, cameras, cars, M2M,
- Transactions
- Start to see volumes 2010

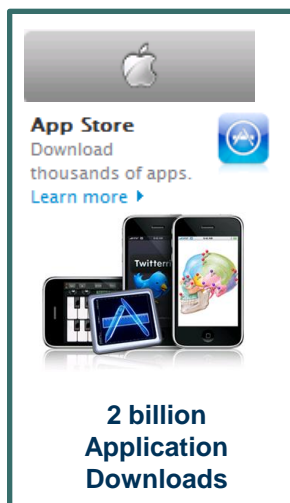


2008 the tipping point – gone from niche to mass market

# New competing Mobile business models

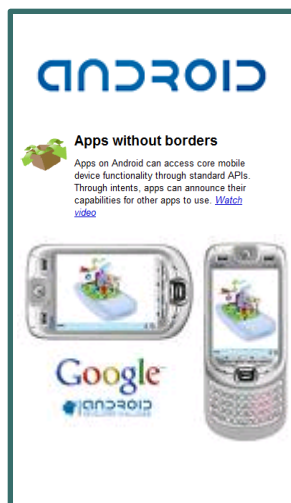
## Apple model

- Apple keep X% revenue from apps and music
- Apple own the billing relationship with the customer
- All handset vendors started to duplicate the Apps store model



App Store  
Download  
thousands of apps.  
[Learn more >](#)

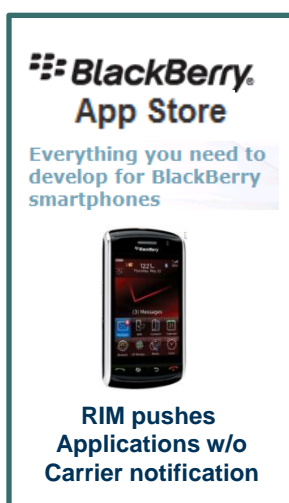
2 billion  
Application  
Downloads



ANDROID

Apps without borders  
Apps on Android can access core mobile device functionality through standard APIs. Through intents, apps can announce their capabilities for other apps to use. [Watch video](#)

Google  
android



BlackBerry  
App Store

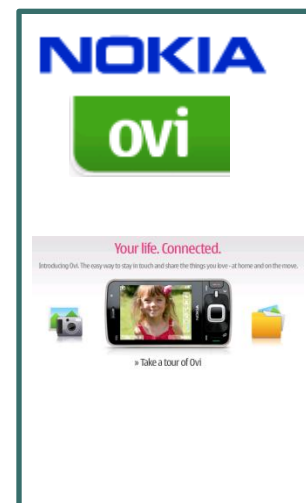
Everything you need to  
develop for BlackBerry  
smartphones

RIM pushes  
Applications w/o  
Carrier notification



Windows  
Mobile  
"Skymarket"

Leverage existing  
XBOX Live and Zune  
Market place



NOKIA  
ovi

Your life. Connected.  
Introducing Ovi. The easy way to stay in touch and share the things you love - at home and on the move.  
» Take a tour of Ovi

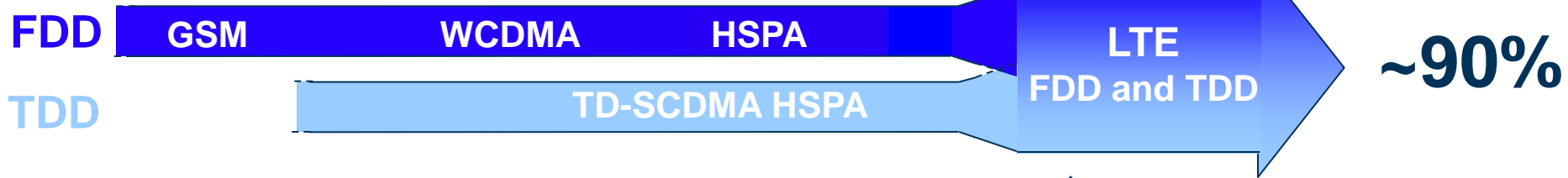
⇒ Mobile Operators vs Over the Top providers  
Battle for brands and all inclusive

# Common LTE Evolution

Alignment for WCDMA/HSPA, TD-SCDMA (China) and CDMA

**2014**

## GSM Track (3GPP)



## CDMA Track (3GPP2)



## WiMax Track (IEEE)



39 operators already committed in 19 countries to LTE  
14 going commercial 2010

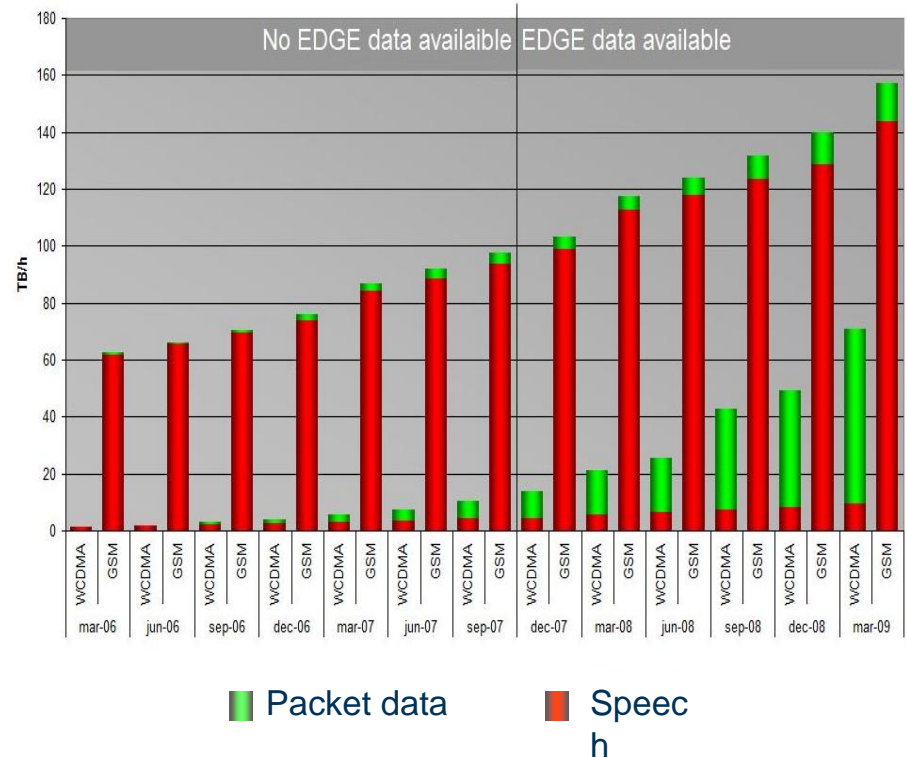
# Strong growth in mobile broadband

- Over tenfold traffic growth to 2014 driven by Internet/data

## Rapid subscriber uptake

- 410 million WCDMA/HSPA subscribers
- 10 million new HSPA subscribers per month, 150 million in total in 274 nets
- 90% of the traffic in WCDMA/HSPA networks is data
- Smartphones and PC,s drives traffic out of 1739 devices
- 30 % of mobile broadband users in UK do not have fixed (The Guardian/3 UK)
- Attractive pricing on par with DSL

## Exceptional traffic growth

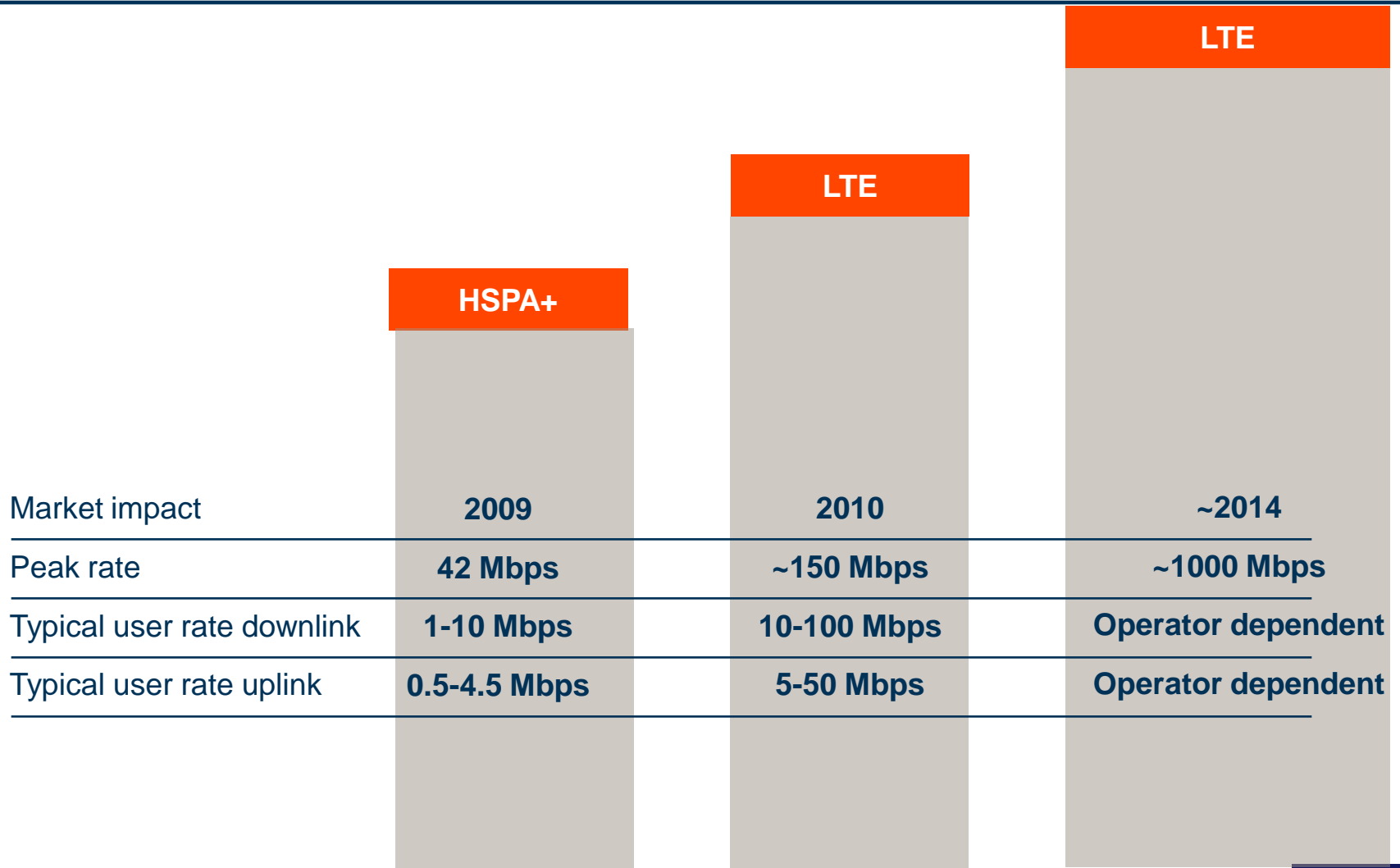


Source: GSMA, GSA, and Ericsson NetQB, March-2009

LTE from 2010 will accelerate this trend further – more spectrum needed!



# Mobile Broadband speed evolution



# More than 1739 HSPA-devices

In 850/900/1900/2100 Mhz ,from around 190 suppliers

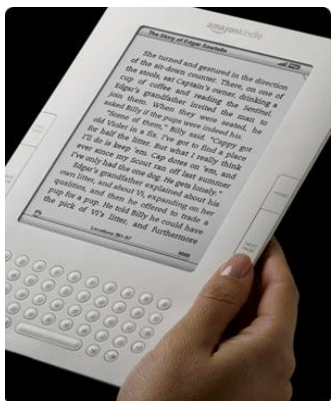
- › 726 HSPA phones (~42%)
- › 10 Personal Media, 7 Cameras, 2 E-book readers
- › 815 PC with embedded HSPA, PC cards, USB modems ,etc (~47%)
- › 179 wireless routers/Femtocells (~10%)



Source: GSA – Global mobile Suppliers Association: September, 2008

# More 3G Enabled Devices

- E-Device: E-Book/E-Newspaper



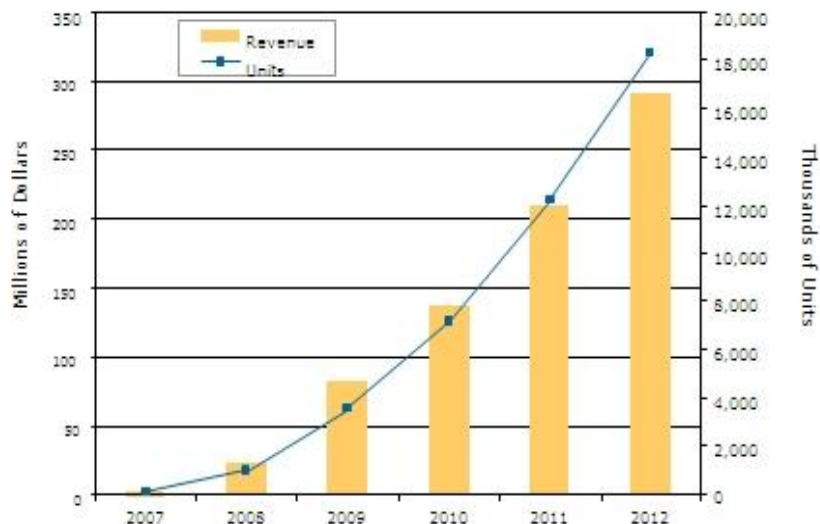
6 inch screen



9.7 inch screen  
- on the way

- › Simple to use, no computer required, no setup, no cables.
- › No wireless bills. Amazon pays for its 3G connectivity (Sprint)
- › Fast 3G network, get books in under 60 seconds
- › New competition like: AT&T/Sony/Plastic Logic/Barnes&Noble

2007-2012 E-books reader shipment forecast  
Source: iSuppli, 2008



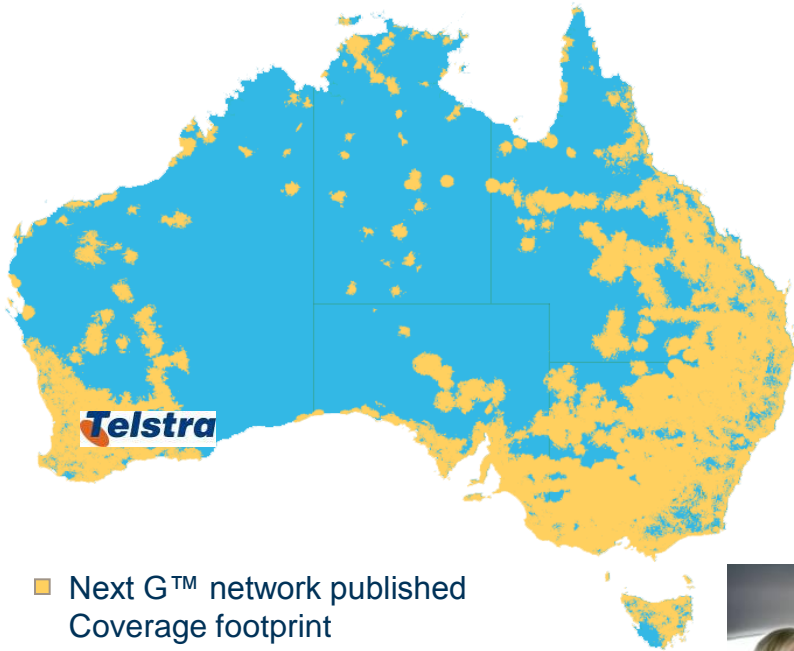
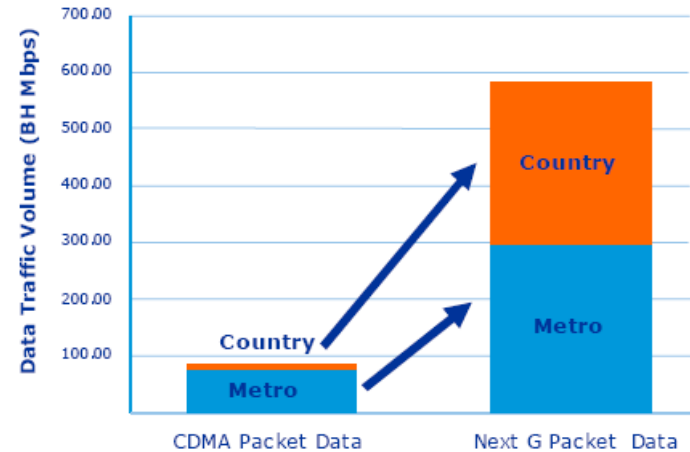
来源: iSuppli公司, 2008年7月



# 99% population coverage

HSPA 21/ 5.9 Mbps nation-wide, up to 200 km cell range

## Data traffic volume, cdma vs HSPA Metro vs Rural



Source: Telstra



## Mobile broadband the rural choice?



# Mobile broadband redefines the market

- EU end 2008, globally 10 million HSPA subs/month

Austria		
	Mobile HSPA	Fixed DSL/Cable
Subscribers	0.94 million	1.74 million
Market share	35%	65%

Slovakia		
	Mobile HSPA	Fixed DSL/Cable
Subscribers	0.22 million	0.57 million
Market share	28%	72%

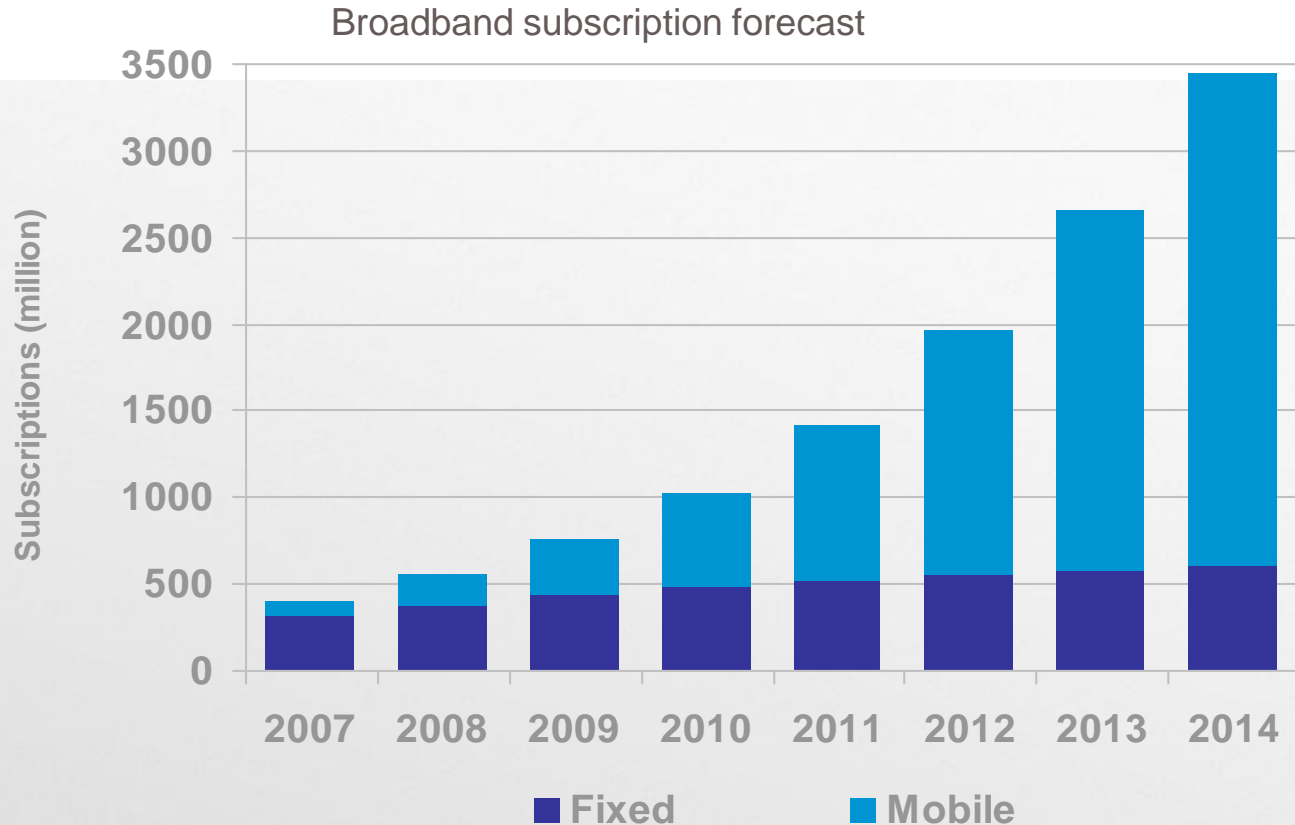
Ireland		
	Mobile HSPA	Fixed DSL/Cable
Subscribers	0.3 million	0.9 million
Market share	25%	75%

EU23+2		
	Mobile HSPA	Fixed DSL/Cable
Subscribers	14.7 million	111.2 million
Market share	11.6%	88.4%

The broadband market is coming rapidly to an inflexion point

# The high speed broadband networks facilitate new innovations

- 80 % mobile megabit broadband, 2014
- 90 % of mobile broadband The 3GPP standard 2014
- More and harmonized spectrum
- More high speed access, FTTx
- Fixed Internet/IPTV traffic dominates-ten times higher
- Internet goes mobile
- About half of revenues coming from broadband services in 2014



Mobile Broadband includes: CDMA2000 EV-DO, HSPA, LTE, Mobile WiMAX & TDSCDMA. It includes handsets, USB dongles, embedded modules etc. The vast majority is handsets.

Fixed broadband includes: DSL, FTTx, Cable modem

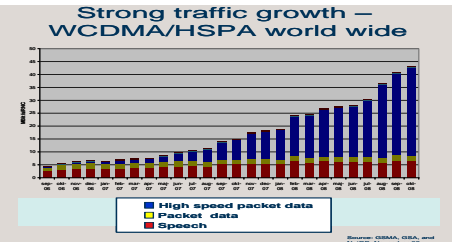
Source: Internal Ericsson



# New important regulatory issues

## Stimulation and Harmonized Spectrum

- Drives lowest cost to consumers
- Support rapid broadband growth
- Drives and supports investment



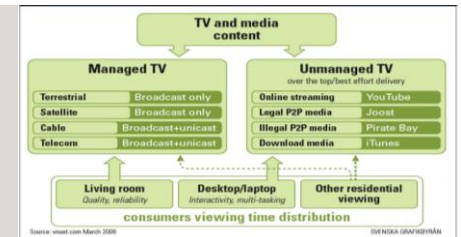
## Closed vs Open Networks & Services

- Fragmentation / Interoperability ?
- Exclusivity ? DRM ?
- Net Neutrality & Internet freedom?VoIP first?



## Holistic regulation in converged market

- NGA (Next Generation Access) broader definition
- TV/Internet/Telecom
- Geographic definition



## Sharing passive and active

- Mainly commercial decision but
- In general passive should be allowed
- Active also in rural areas ( support USO)



For NGA Fiber Most markets currently fit into one of five clusters which seem to be evolving towards two

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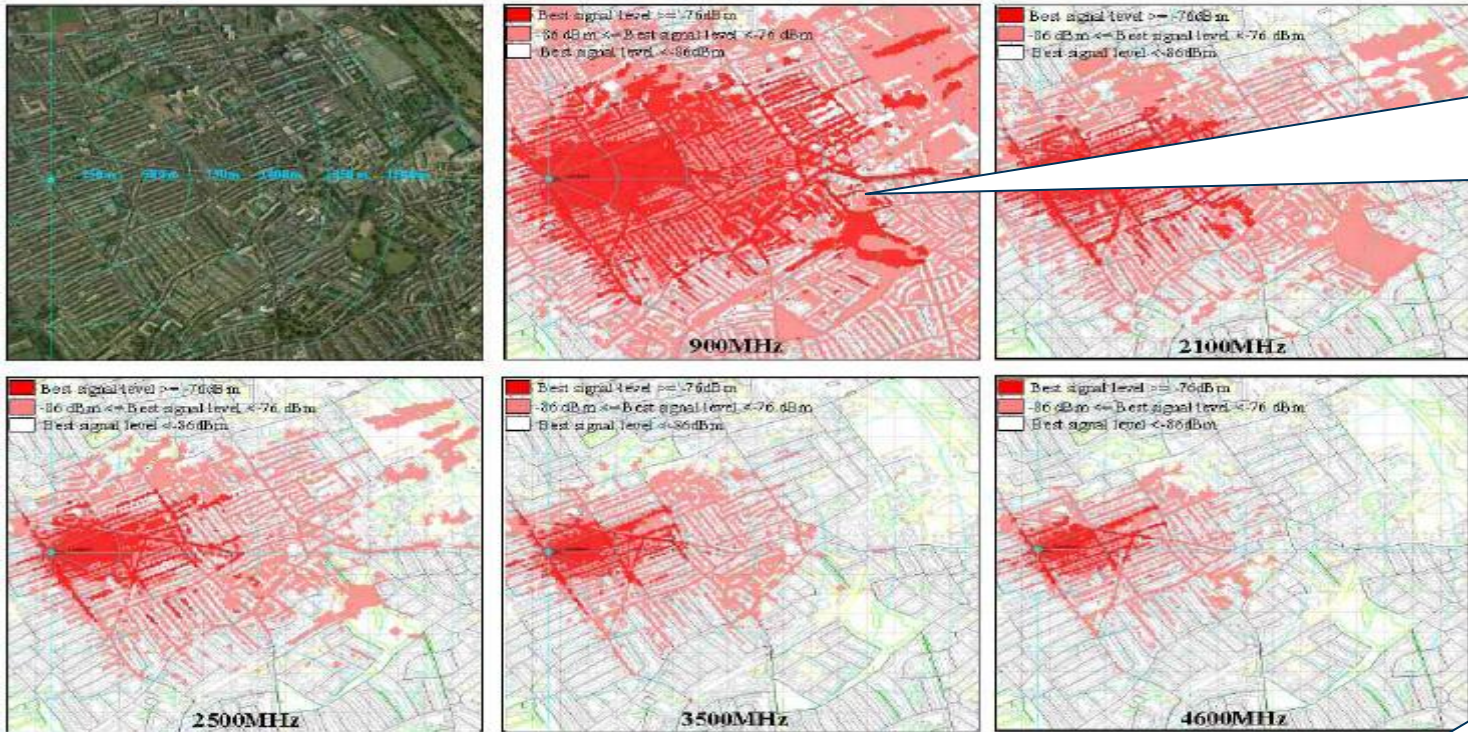
- 1** Uncertain environment with little incentives to invest
- 2** Operators investing very very slowly in NGA deployment with regulator/Govt waiting and watching
- 3** Regulatory certainty & strong competition incentivising large investment & rollout
- 4** Direct government NGFA investment
- 5** Advanced deployment with incumbent under pressure by regulator





# Spectrum key to cost effective 4g LTE/LTE-Advanced deployments

$20 \times \log Kxf$  = Double the frequency and you loose 6 dB



Spectrum sub 1Ghz- Important for cost effective rural and indoor coverage.

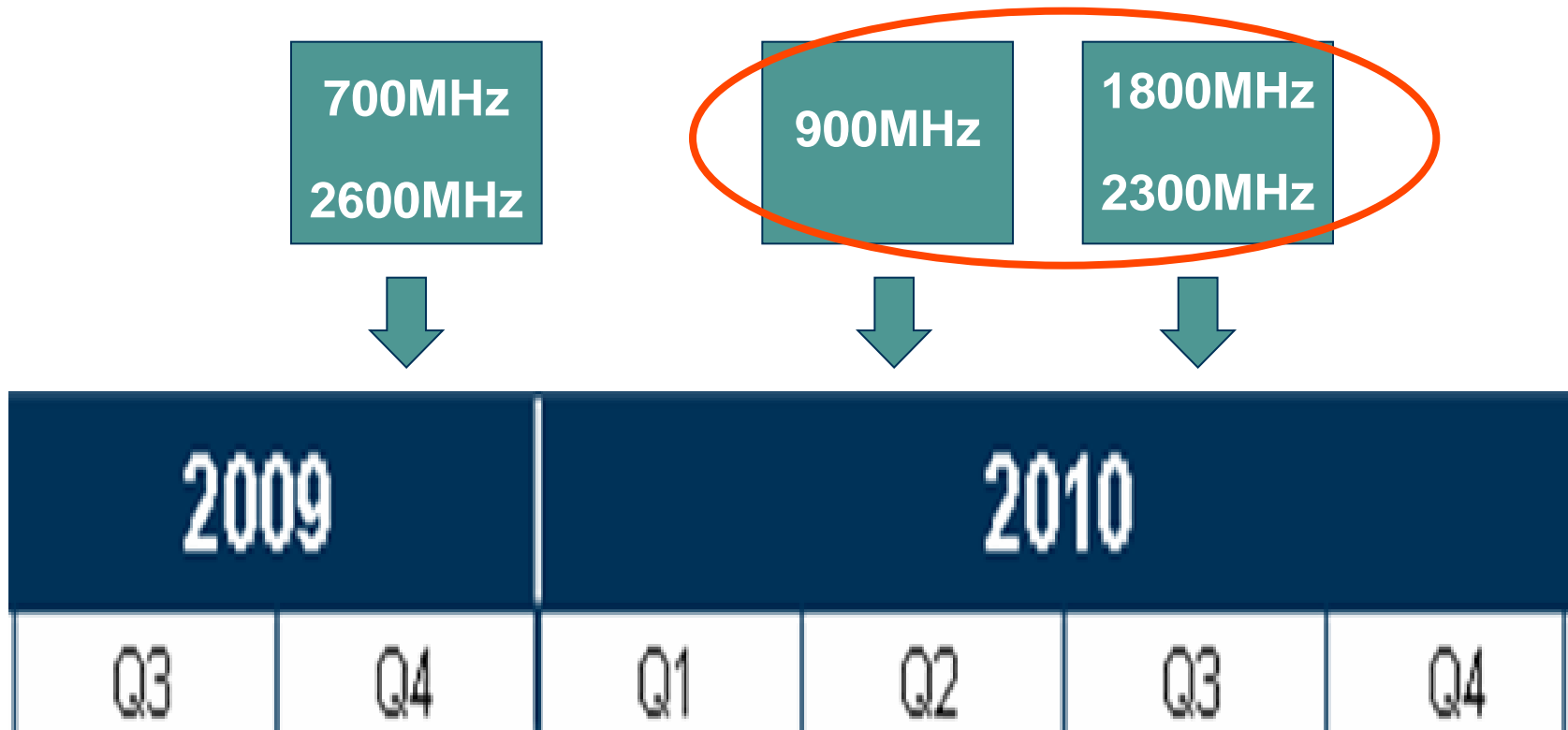
Channels are getting wider to support higher bit rates.



LTE/LTE-Advanced key to lowering the cost/Mb delivery



# Planned LTE Band Support – Early 4G



Mobile broadband 10x the speeds of Today

# Spectrum & Innovation – Test & Trial Licences

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## Research

- New Modulation schemes
- New Encoding schemes
- New Antenna design
- Autonomics/SON

## Product development & testing

- Terminal Verification Testing
- Interoperability Testing

## Services testing over wireless

- New IMS services
- Web 2.0 & 3.0

# Present insights changing the industry

## Consumers

Internet everywhere/Everything connected  
 Communications over the top  
 New business models (Free/Ads/Bundle)  
 Convenience and Trust



## Networks & architecture

All IP and broadband (Fiber/Wireless)  
 Video/TV driving traffic  
 Service/Software/Licensing as business  
 Cloud computing/Data paradigm



## The world around us

Emerging markets/Asia growing in importance  
 Consolidations  
 OTT and Internet services leading change  
 Sustainability improved by ICT







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