



# **New Communications Policies in the European Union**

Korea Communications Conference  
Seoul, 11 May 2011

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Cullen International

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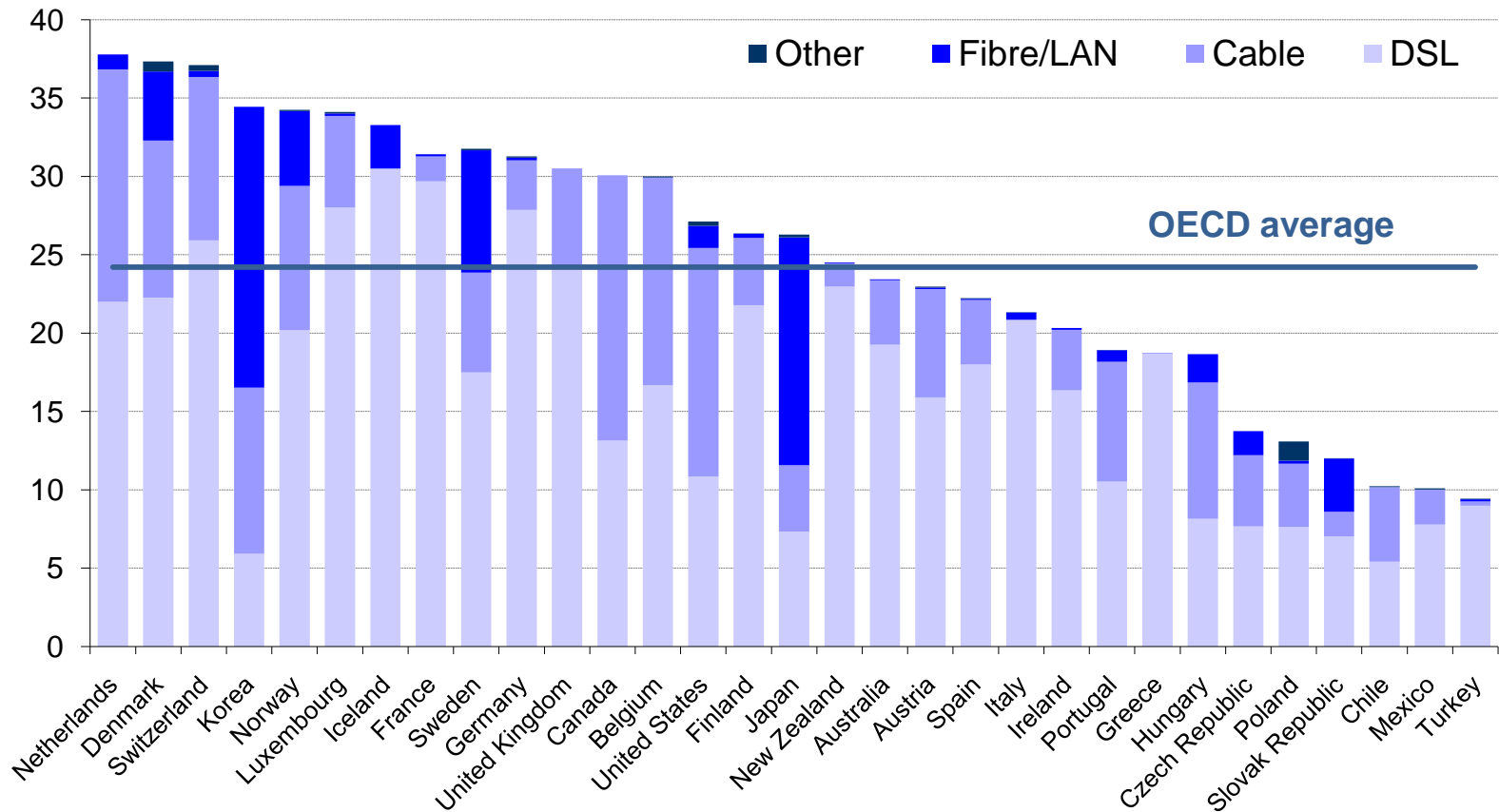
# Outline



- Net neutrality
- High-speed broadband
- Spectrum for 4G mobile broadband
- Data roaming prices

# Fixed broadband penetration

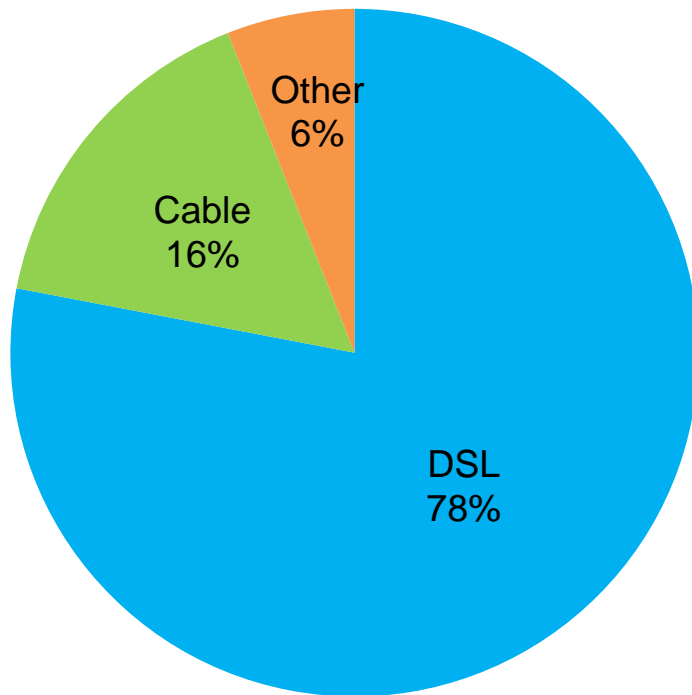
Per 100 inhabitants, June 2010



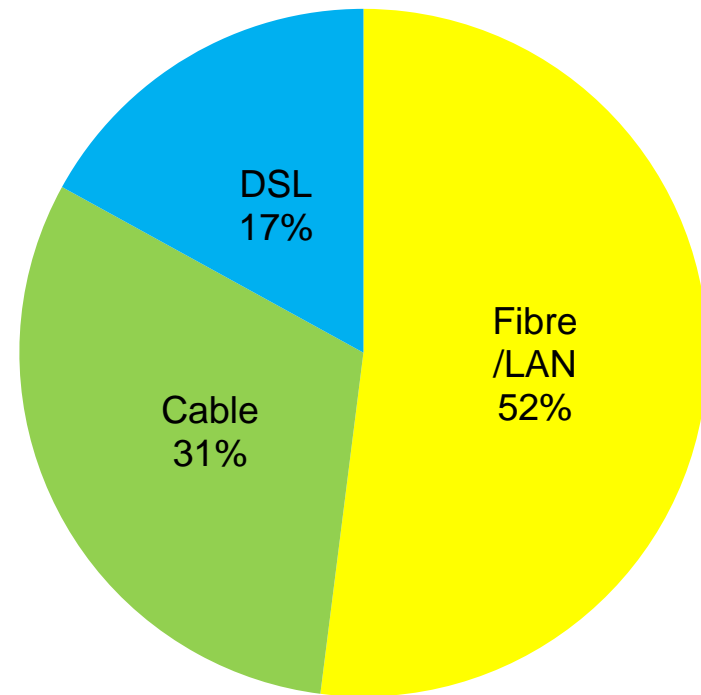
Source: OECD

# Fixed broadband lines

**EU**  
July 2010

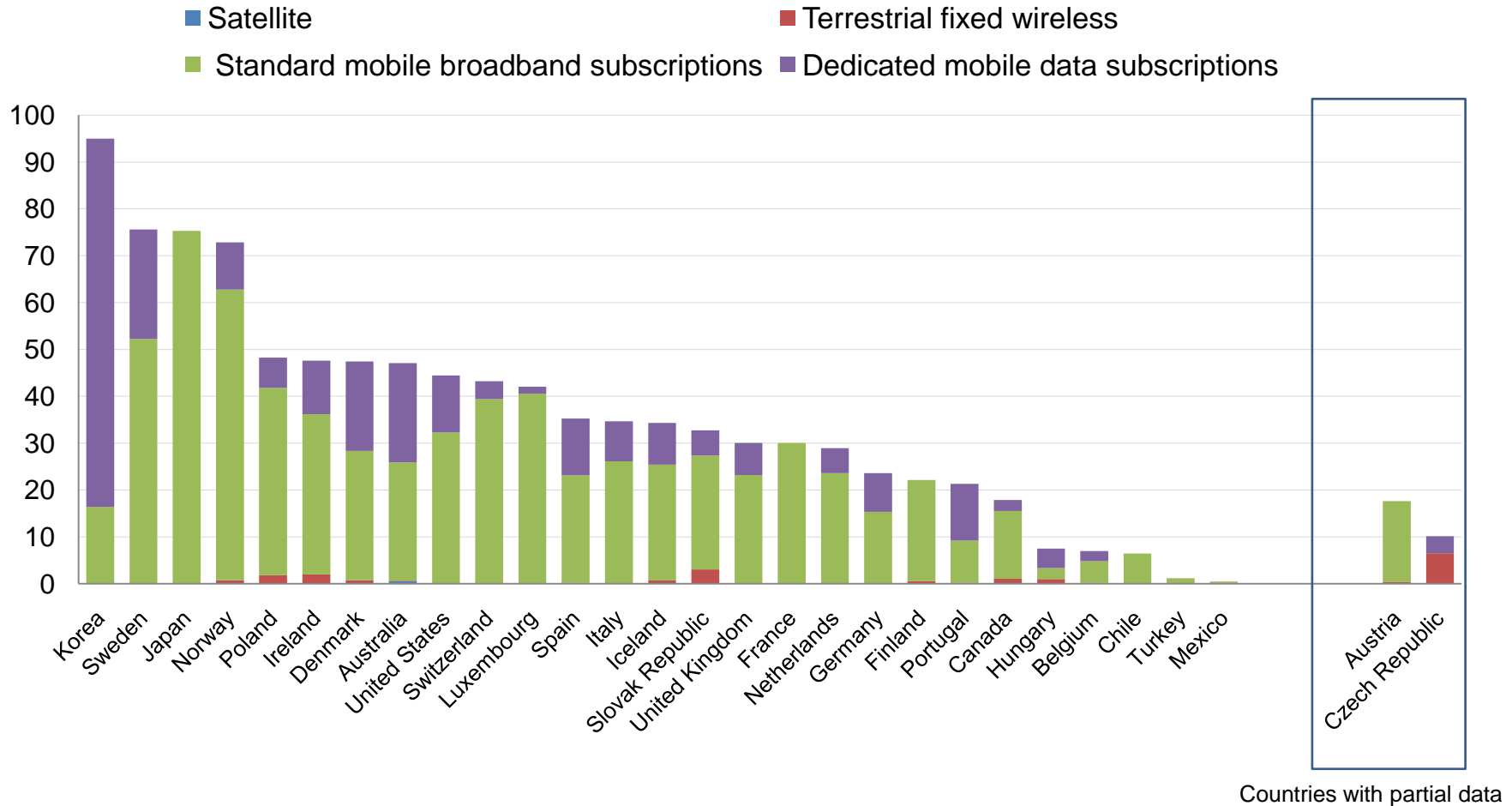


**Korea**  
June 2010



# Wireless broadband penetration

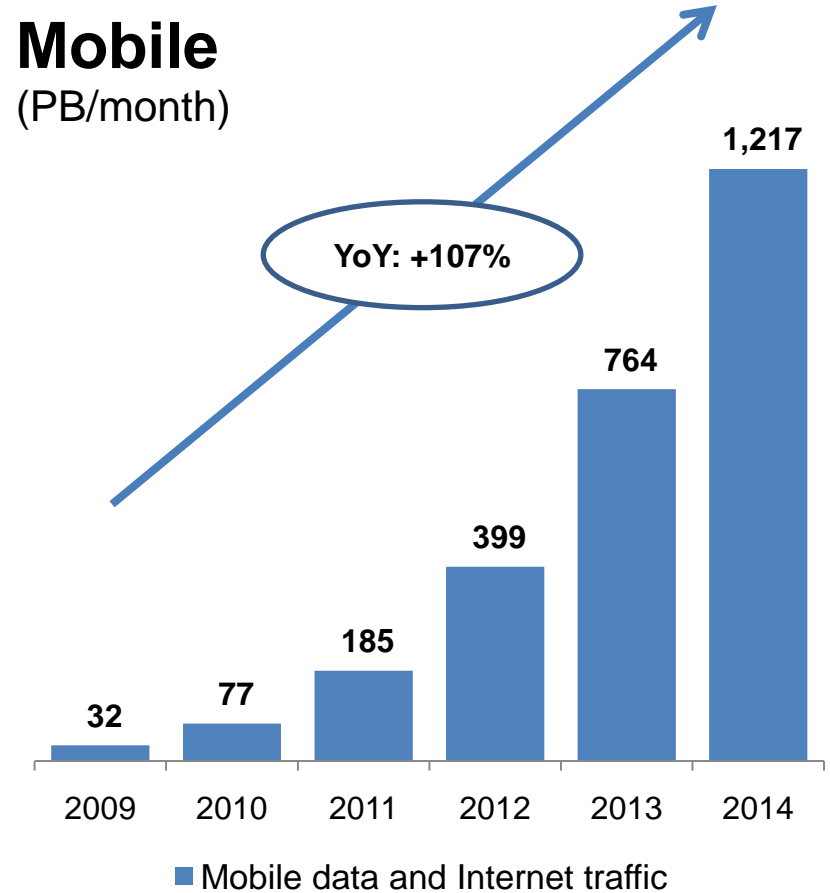
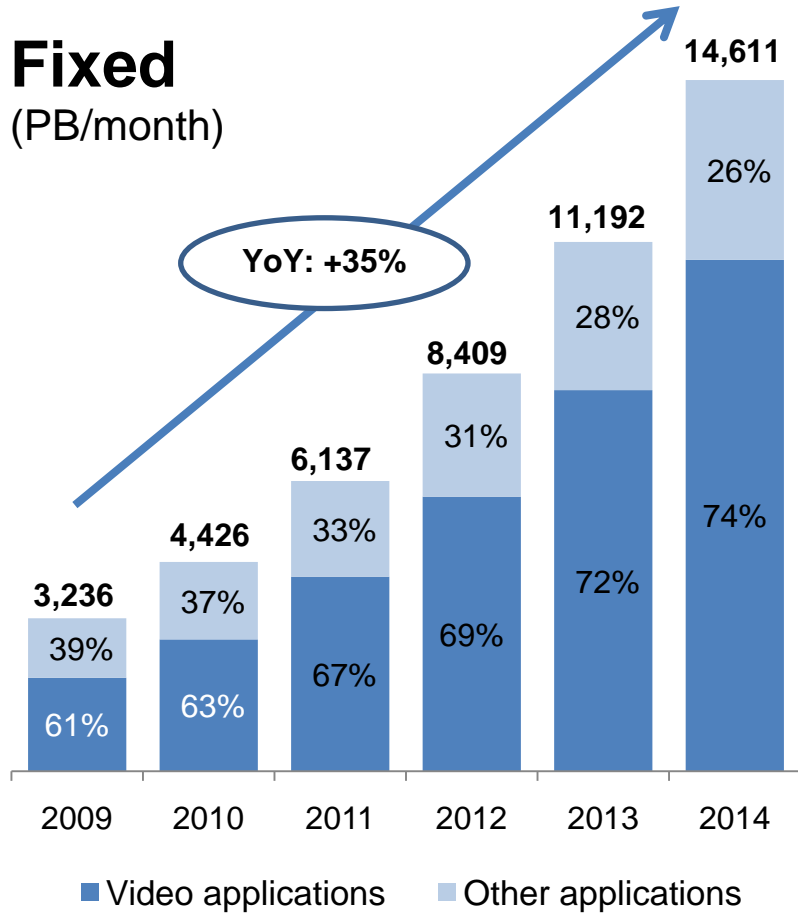
Per 100 inhabitants, June 2010



Countries with partial data

Source: OECD

# Europe total Internet traffic projection



# European Union targets for high-speed broadband



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	<b>Universal coverage</b>	<b>Subscriptions</b>
	<b>All EU citizens should have access to:</b>	<b>% of EU households having subscriptions with speeds above 100 Mbps:</b>
<b>2013</b>	Basic broadband (speed not defined)	No target
<b>2020</b>	Fast broadband with speeds of at least 30 Mbps	50% households

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# New network investments



## Capacity upgrades

Increasing capacity  
of existing networks

### Fixed networks

Incremental capacity upgrades  
to core and backhaul networks

### Mobile networks

Upgrade existing and deploy new sites  
(with associated backhaul)

## Technology upgrades

Deployment of new technologies  
in order to deliver new services

### Fibre roll-out

Deployment of Fibre to Cabinet and Home  
to deliver high-speed access speeds  
and services (30-100 Mbps)

### LTE

New radio access technology to enable  
higher speed mobile access services



# New network investments

## Capacity upgrades

Increasing capacity  
of existing networks

### Fixed networks

EUR 9.8 billion  
KRW 15.6 trillion

### Mobile networks

EUR 21 billion  
KRW 33.4 trillion

## Technology upgrades

Deployment of new technologies  
in order to deliver new services

### Fibre roll-out

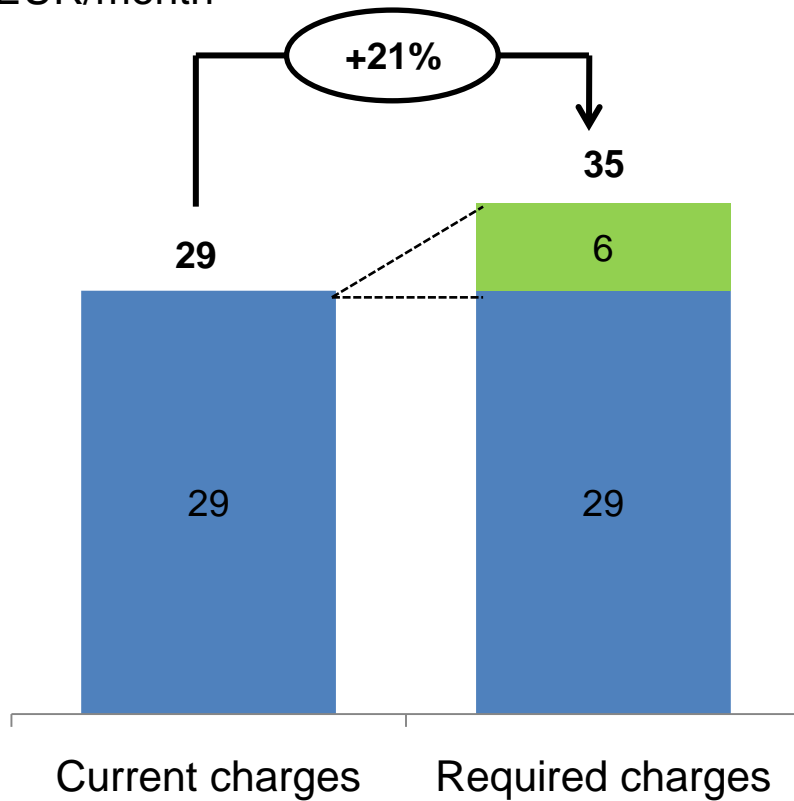
30 Mbps:	100 Mbps:
EUR 60 billion	EUR 270 billion
KRW 90 trillion	KRW 420 trillion

LTE  
?

# ARPU increases needed to fund capacity upgrades to existing networks

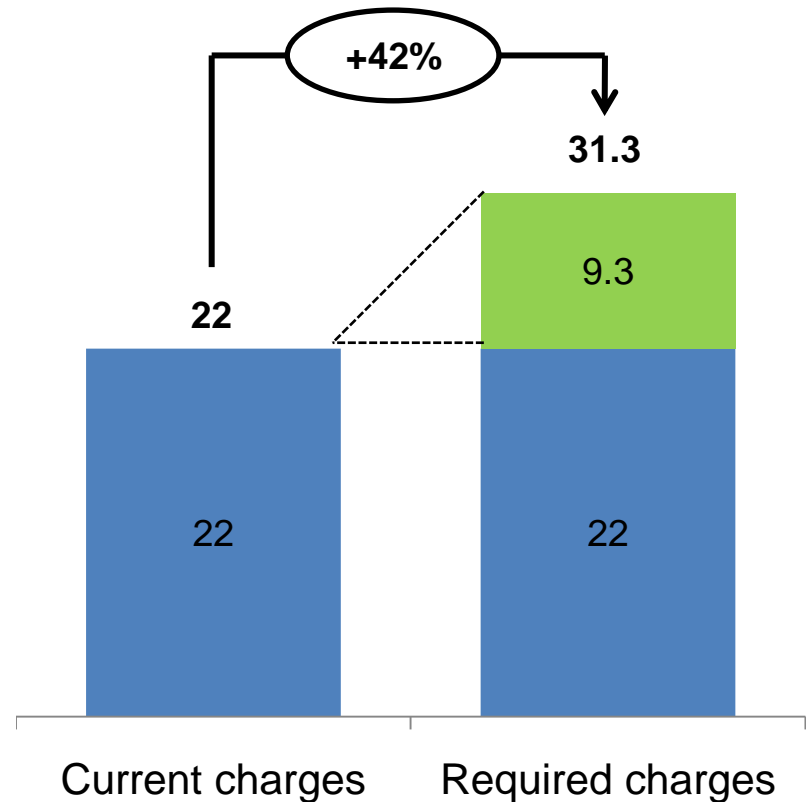
## Fixed

EUR/month



## Mobile

EUR/month

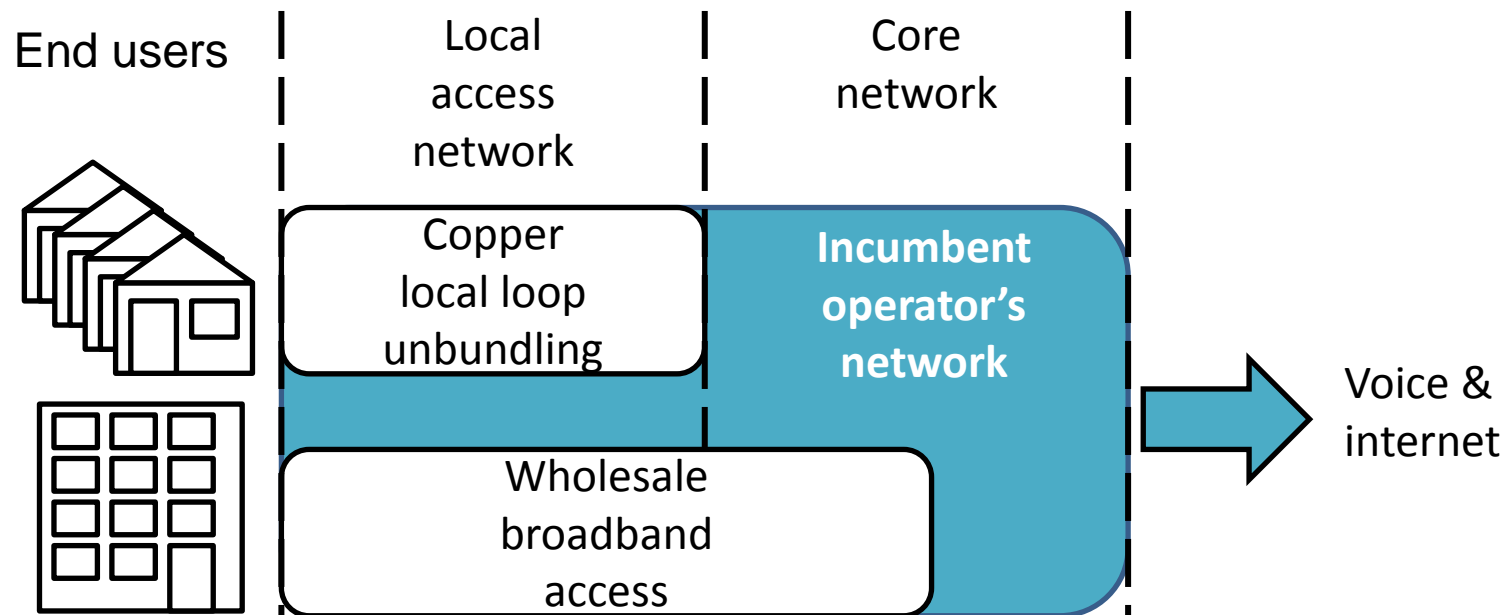


# Net neutrality

- Blocking
- Throttling
- “Wait and see” approach
  - Competition in retail broadband markets
  - New transparency measures

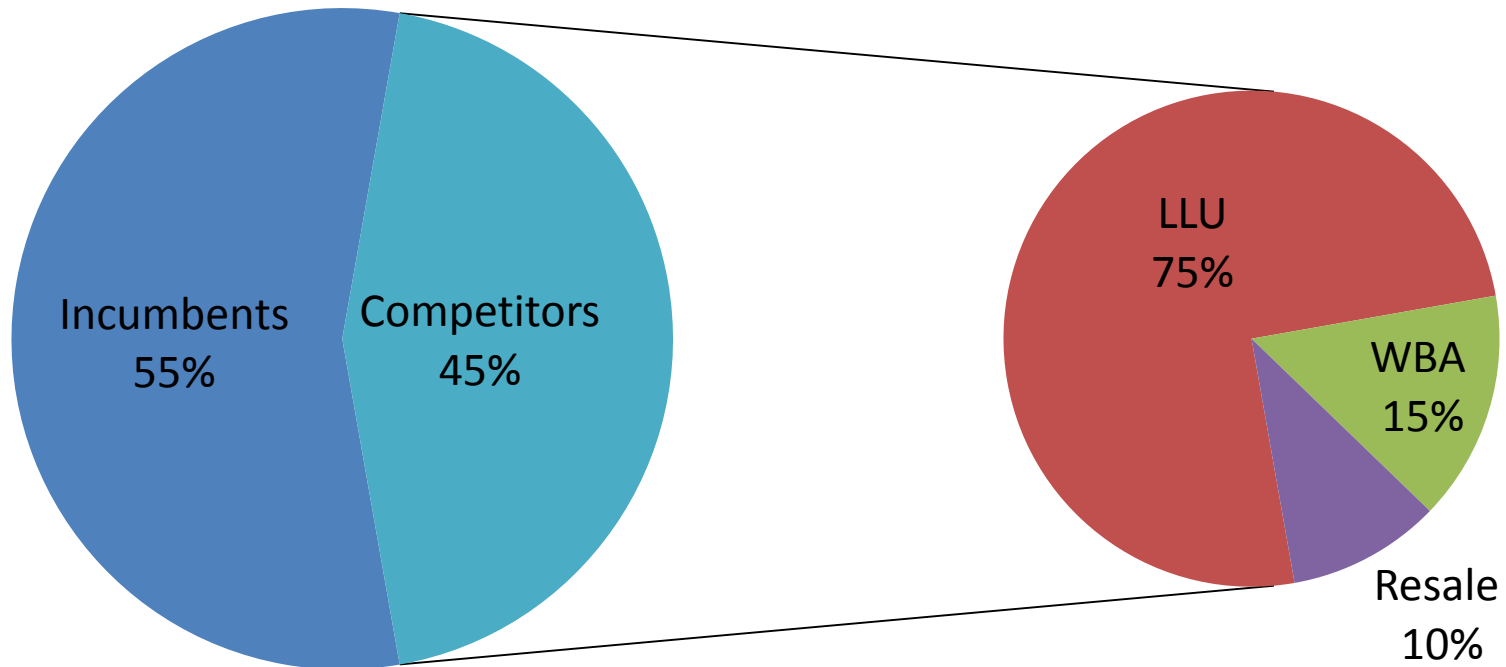
# Regulated network access

## Copper / ADSL networks



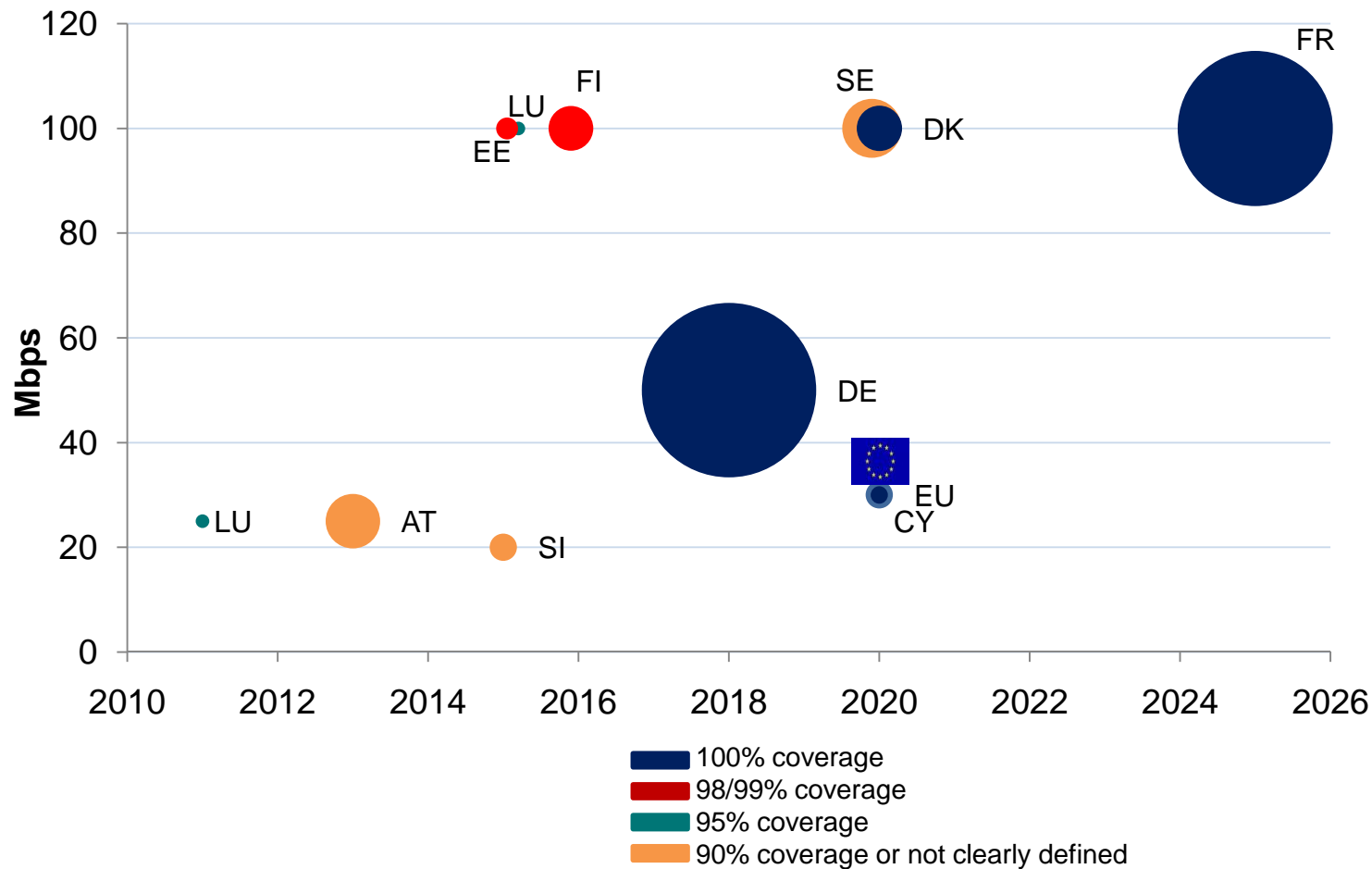
# DSL lines at EU level

July 2010



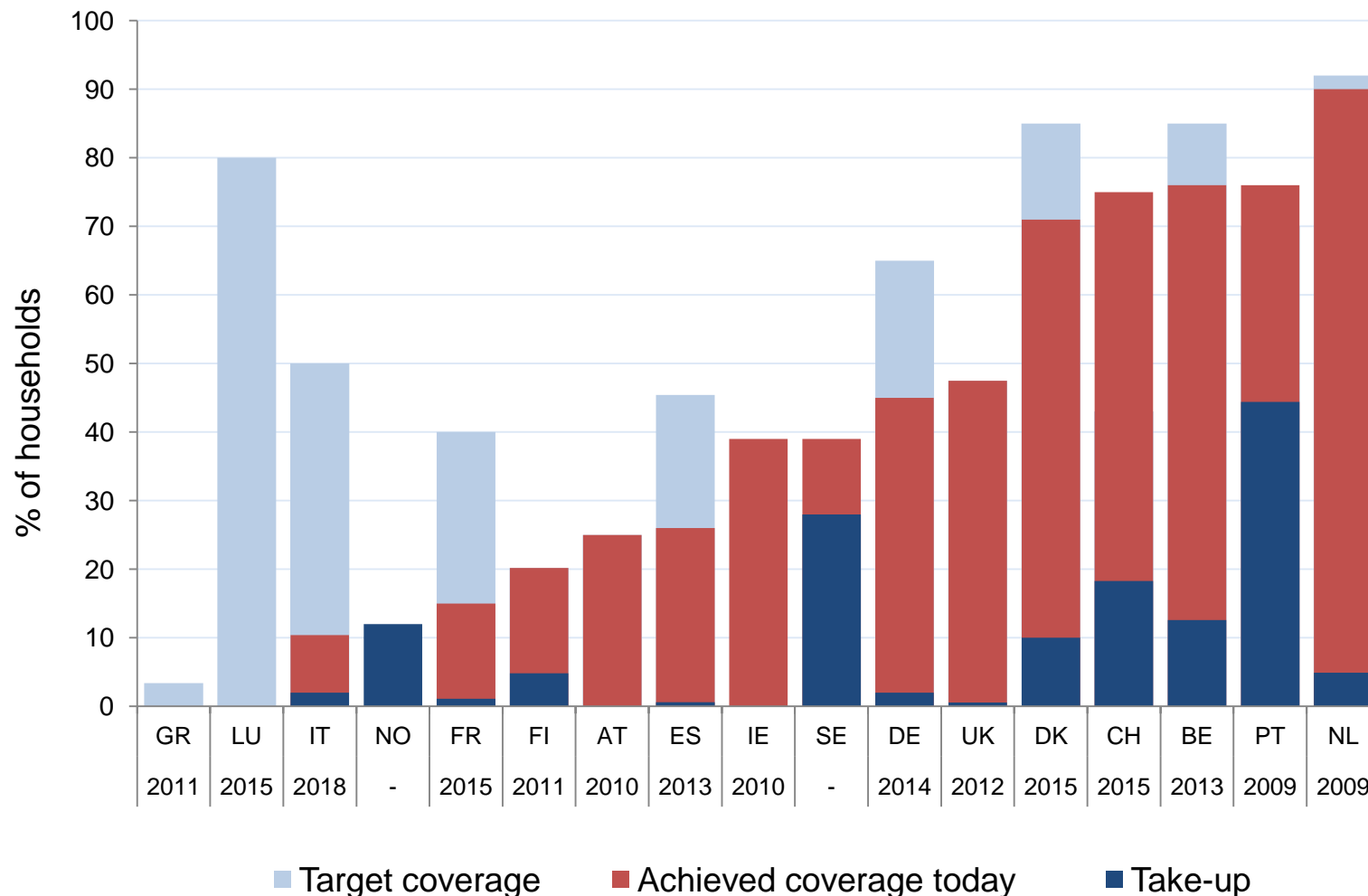
Source: European Commission

# National targets for fast (>20 Mbps) broadband covering at least 90% of population



Source: Cullen International

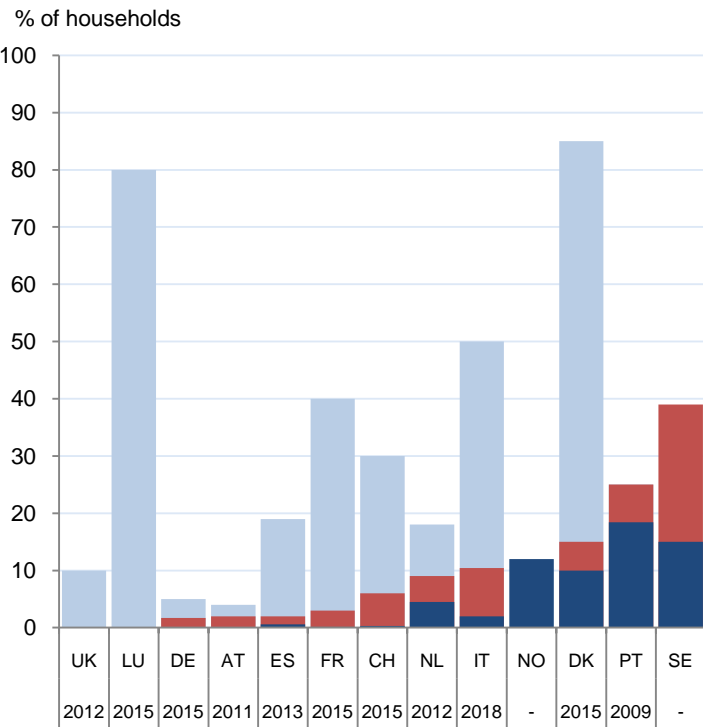
# NGA deployment in Western Europe



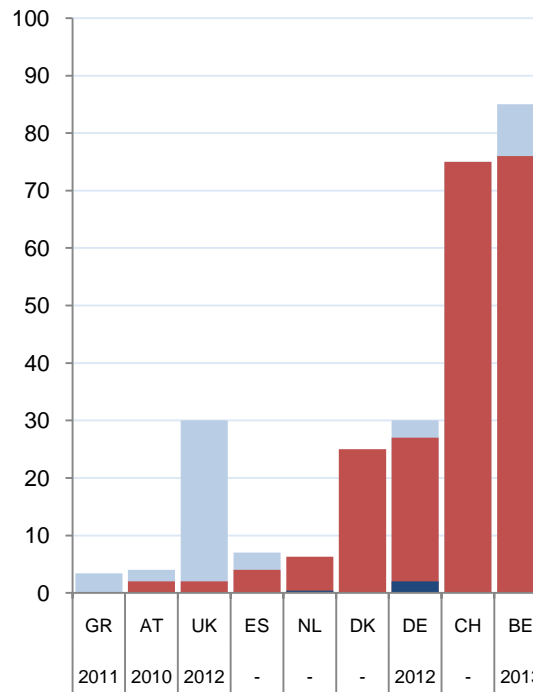
Source: Cullen International

# NGA deployment in Western Europe

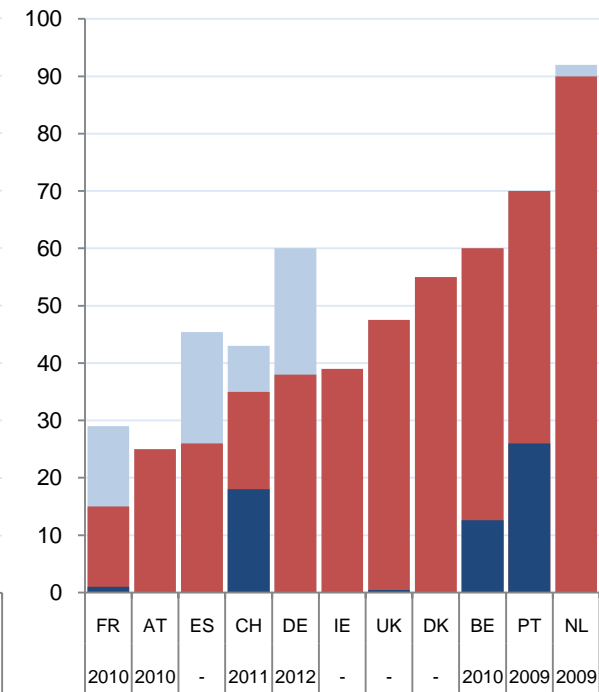
## FTTH/B



## FTTC/VDSL



## Cable DOCSIS 3.0



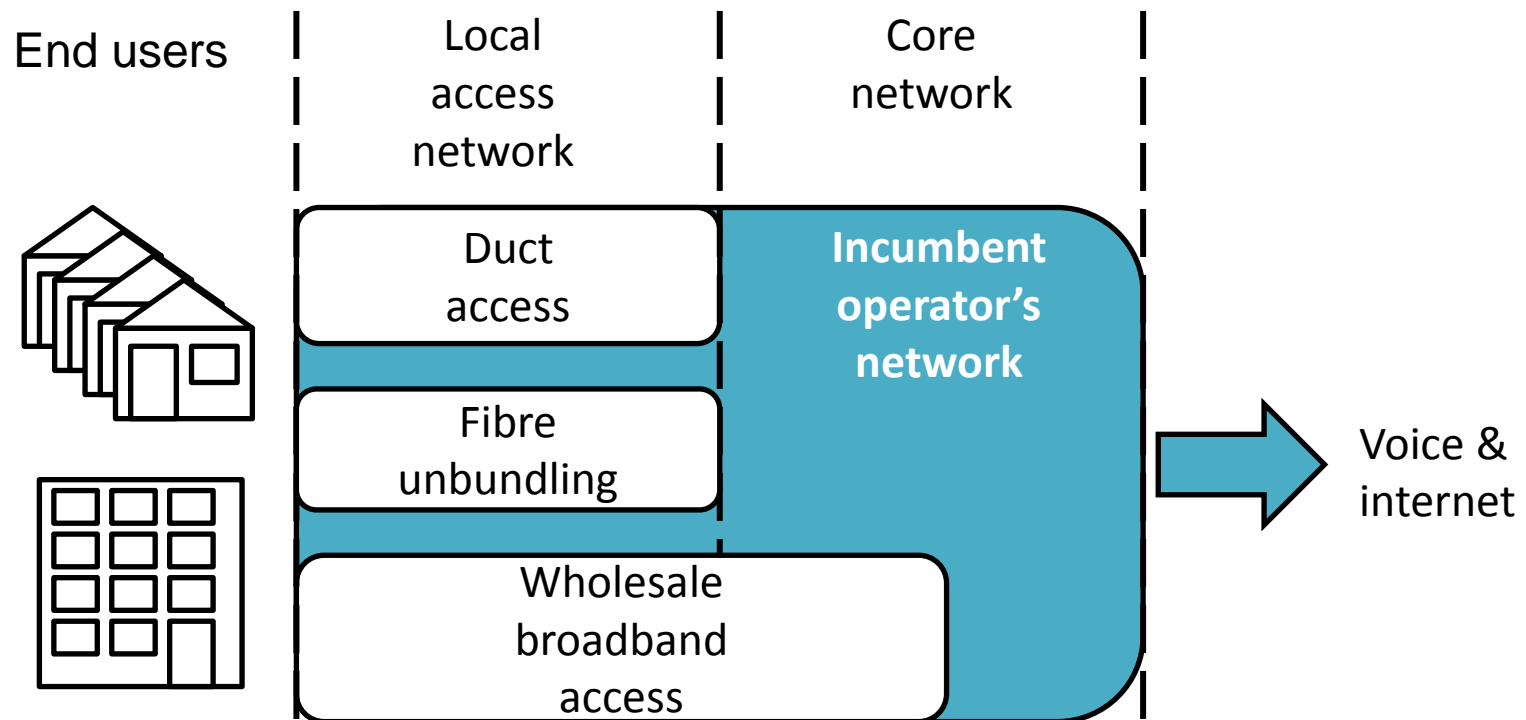
- Target coverage
- Achieved coverage today
- Take-up

Source: Cullen International



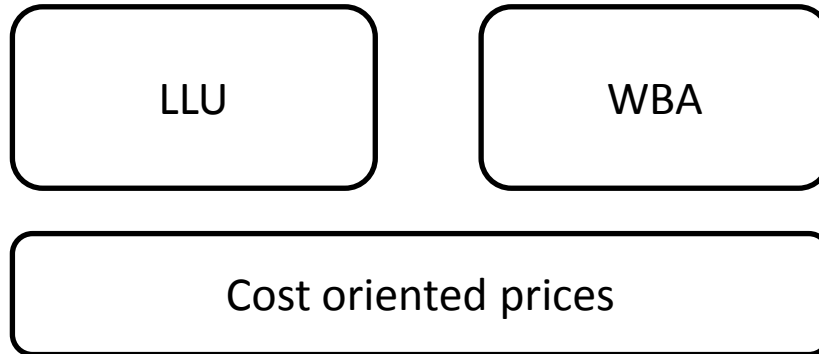
# Regulated network access

## NGA fibre networks

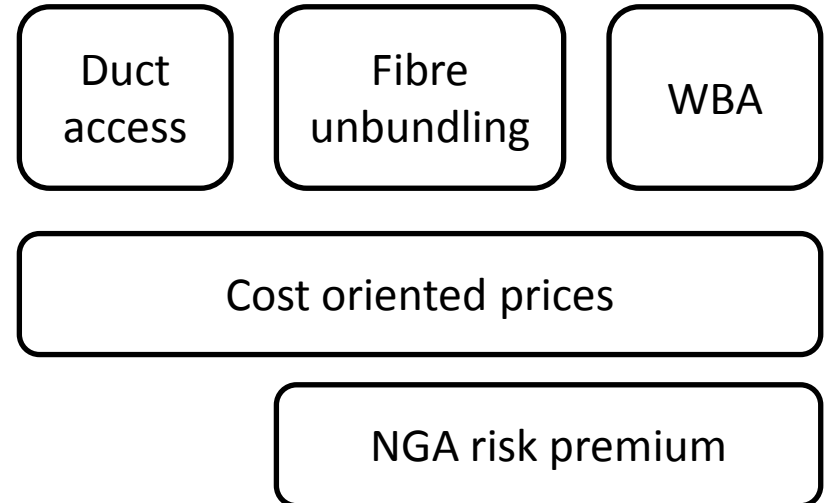


# Regulated access prices

## Copper



## NGA

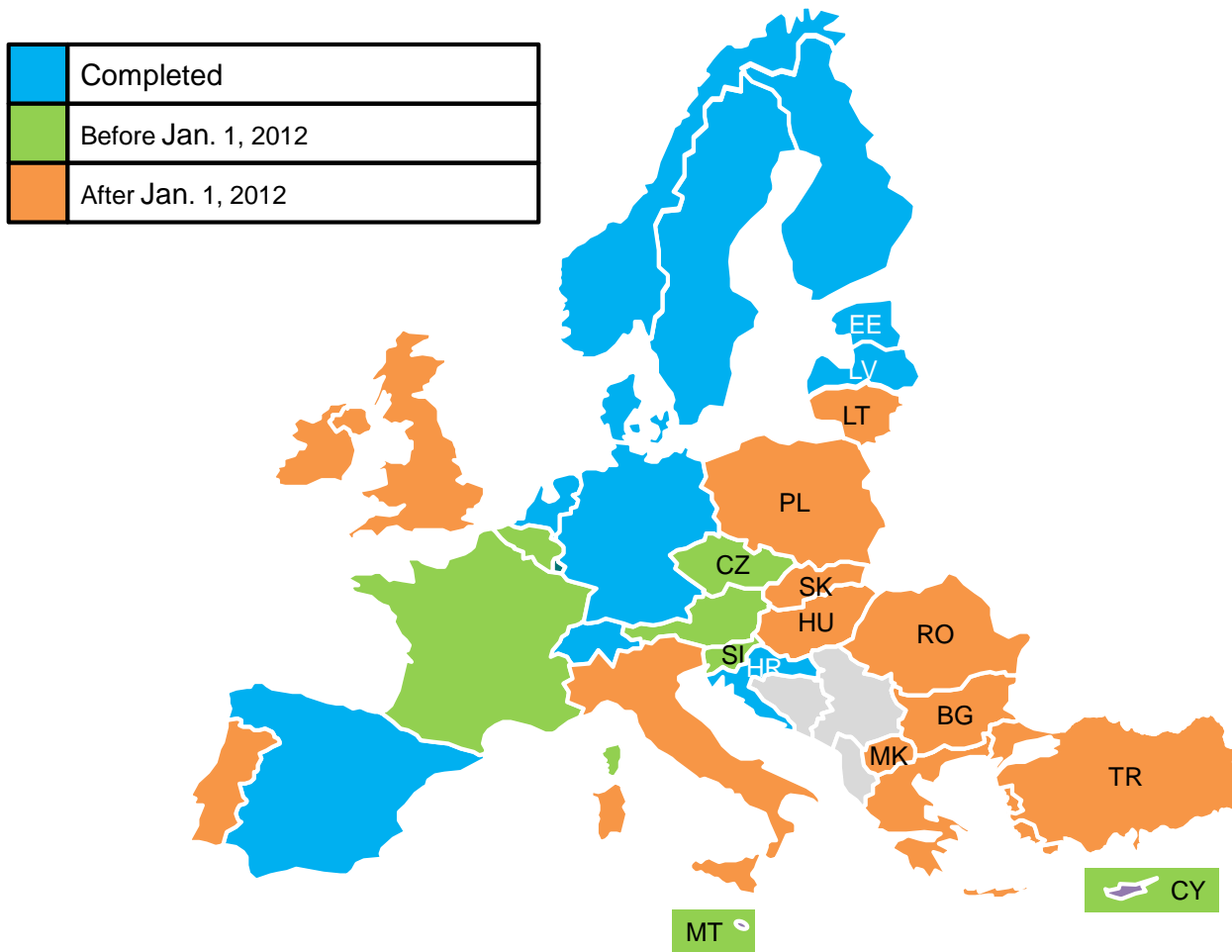


# Spectrum for 3G and 4G mobile broadband






	2.1 GHz	900 MHz	1800 MHz	800 MHz	2.6 GHz	700 MHz
	Original 3G band	Liberalisation of use of 2G bands		Digital dividend		Digital dividend 2
<b>Paired</b>	2x60 MHz	2x35 MHz	2x70 MHz	2x30 MHz	2x70 MHz	?
<b>Unpaired</b>	35 MHz				50 MHz	?
<b>EU deadlines</b>		<b>3G: 2010</b> <b>4G: 2012</b>		<b>2013</b> <b>(proposal)</b>	<b>2012</b> <b>(proposal)</b>	?

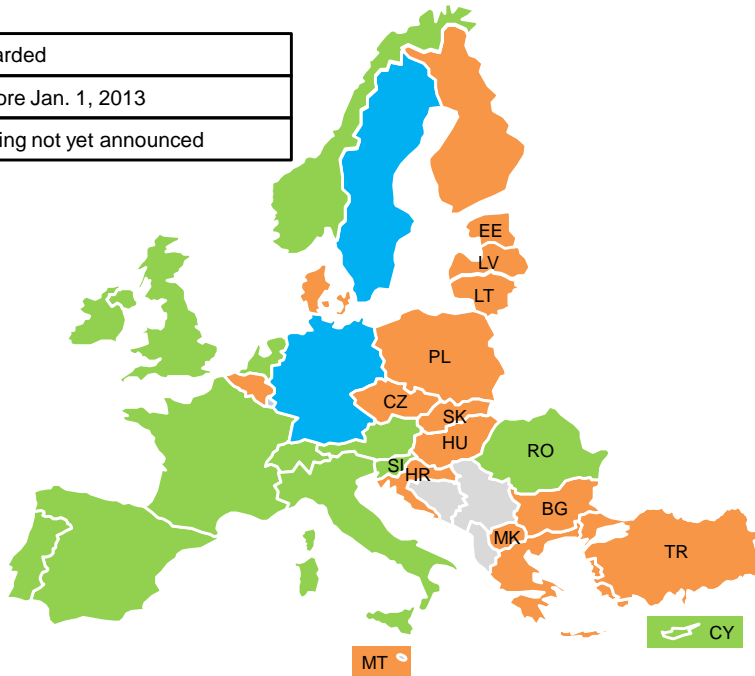
# Digital terrestrial television switchover






# Award of spectrum for 4G (LTE)

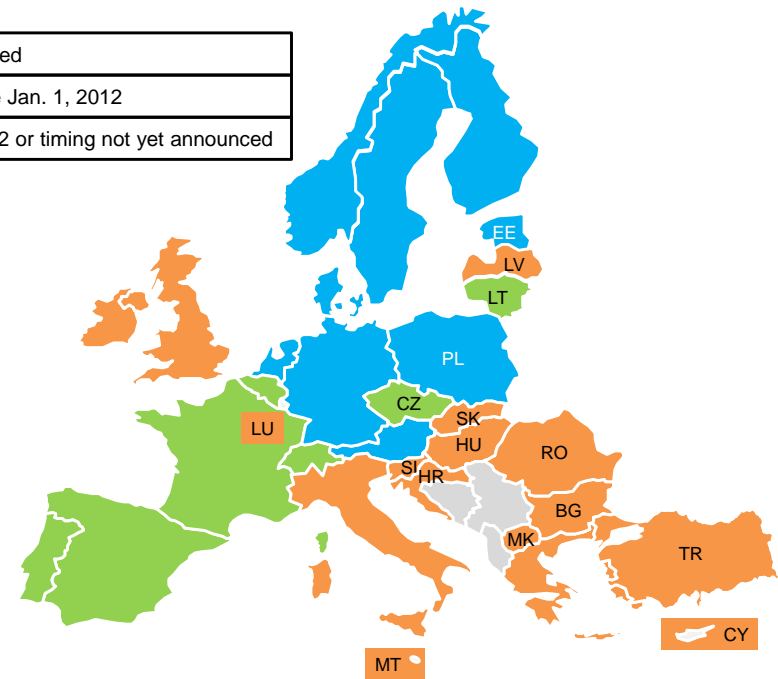
## 800 MHz

	Awarded
	Before Jan. 1, 2013
	Timing not yet announced



## 2.6 GHz

	Awarded
	Before Jan. 1, 2012
	In 2012 or timing not yet announced



# International roaming (inside the EU) for 3G data services



Retail regulation	Wholesale regulation		
Automatic cut-off when expenditure reaches:	Price caps per MB of data sent/received:		
EUR 50 per month KRW 78,000	2009	EUR 1.0	KRW 1600
	2010	EUR 0.8	KRW 1300
To protect users from “bill shocks”	2011	EUR 0.5	KRW 800

# EU average price per MB for retail and wholesale data roaming

