

**Session8**



# **Regional Seminar on Costs and Tariffs for Member Countries of the Regional Group for Asia and Oceania (SG3RG-AO)**

**International Mobile Roaming setting price:  
achievements and experiences**

**A presentation by David Bernal**

**March 2011**

**Phuket, Thailand**

# Contents



1. Introduction

2. Benchmark: international market overview

3. Roaming regulation: strategies

3. 1 Wholesale

3. 2 Retail

4. Adaptation to new market challenges

5. Conclusions & Recommendations

# Contents



1. Introduction

2. Benchmark: international market overview

3. Roaming regulation: strategies

3.1 Wholesale

3.2 Retail

4. Adaptation to new market challenges

5. Conclusions & Recommendations

During the last years, it has been a lot of measures from EU and different countries to act over roaming costs.

For example, **EU has launched several actions** to protect citizens against high price paid to operators:

- **Eurotariffs introduced:** caps on roaming prices (making a call cannot cost more than 35 cents and 11 for receiving a call)
- **Euro-SMS tariff introduced:** from 1 July 2009, sending an SMS from abroad costs no more than 11 cents (excluding VAT). Receiving an SMS in another EU country will remain free of charge.
- **Wholesale charges capped:** prices that operators charge each other (wholesale charges) are also capped until 2010.
- **More transparency of roaming charges for consumers**

In particular, **regulation of international Roaming** is more complicated than regulation of other telecom services mainly due to:

- **Mobile market structure** is different from fixed networks
- **Operators from different countries** are involved

In mobile markets there are more **mobile infrastructures on each market** ( unlike markets for fixed services that are dominated by incumbent operators)

- Taking into account that operators charge their retail customers a price covering the wholesale roaming costs plus a mark-up, regulatory policy applied to the setting of **wholesale prices** is a **key issue for guaranteeing the level playing field competition** in the different markets where the designated SMP operator is operating.
- In that sense, the incentive of Mobile operators to reduce wholesale costs depends on how price sensitive the retail customers are.
- The legislation on **regulation of international roaming made by the EU Commission** introduced **price caps in both retail and wholesale markets** for international roaming and this mechanism has allowed to reduce roaming prices more than 50%,
- The introduction of **price regulation at retail level is certainly more controversial** than price regulation at wholesale level because it is generally acknowledged within the EU that the best way to ensure competition and bring down retail prices is to ensure open access to network facilities provided at cost-based prices. So, EU Commission recommends applying price regulation mainly at wholesale level.

Acting at wholesale level could affect the investment decision, so

1. Should we apply a **bottom up** rather a **top down model**?
2. Should we recognize **symmetric** or **asymmetric** prices?

Which is the best regulatory model for this service?

# Contents



1. Introduction

2. Benchmark: international market overview

3. Roaming regulation: strategies

3. 1 Wholesale

3. 2 Retail

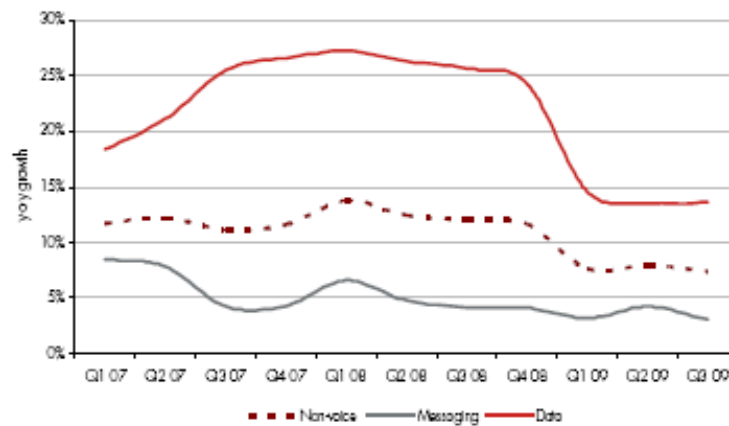
4. Adaptation to new market challenges

5. Conclusions & Recommendations

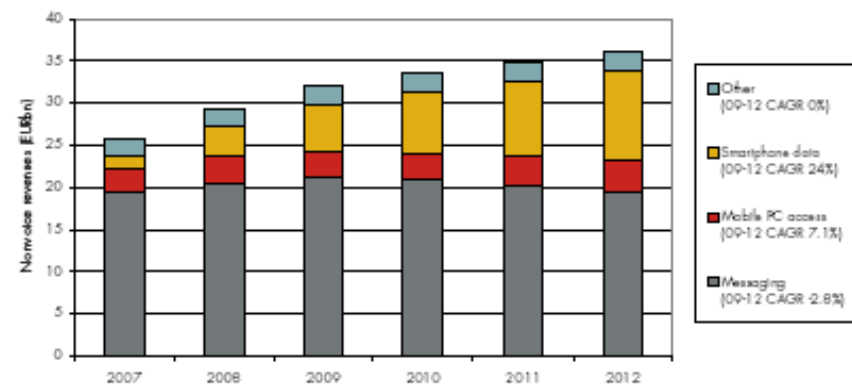
## Mobile data is changing the market structure

- **Volume growth will remain strong** and data pricing is now stabilizing
- Mixed signals on probably the **biggest risk due** to pressure on mobile capex
- **New mixed converged services** are changing the routing matrix of mobile operators
- **Mobile broadband, content and data services** are key to helping operators combat falling retail revenue in Western Europe.

Mobile data growth in large European markets



Forward growth rates for European mobile data



# Benchmark: international market overview

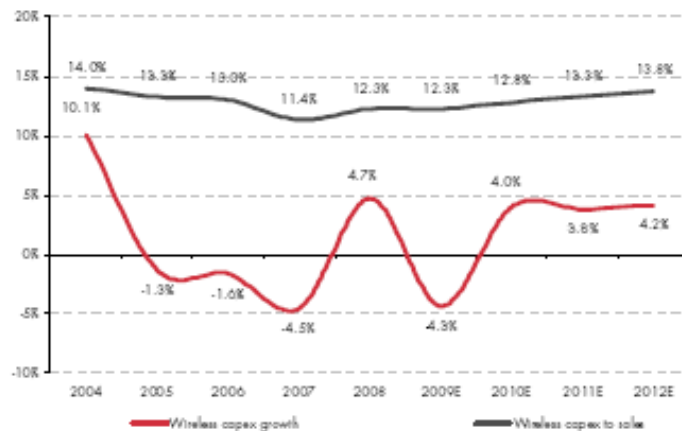


## Mobile spectrum will become a key player in the new cost structure

### • Several trends from EU:

- 1) **By 1 January 2012, the use of all spectrum already harmonised at EU level**, which means almost 1 GHz, should be effectively authorized to meet market demand.
- 2) **By 2013, the 800 MHz band resulting from the digital dividend** should be made available to cope with the mounting scarcity of spectrum (with limited exceptions).
- 3) **By 2020, wireless applications should help to guarantee access for all to broadband** at a minimum speed of 30 Mbps.
- 4) Authorization conditions conducive to the **roll-out of broadband in a competitive environment** should be applied in a coherent manner across Europe.

European wireless capex / sales



Spectrum timetable for Europe

Country	2.6 GHz award	800 MHz award
UK	H1 2011	H1 2011
Germany	Q2 2010	Q2 2010
France	Action plan by end 2009	Action plan by end 2009
Spain	H2 2010	2011/12
Italy	2010/11	2011/12
Netherlands	Q1 2010	2011/12
Portugal	Q3 2010	2011/12
Ireland	2011/12	2011/12
Greece	2011/12	2011/12
Poland	Q4 2009	2011/12
Austria	Q1 2010	2011/12
Czech Rep	Q2 2010	2011/12



# Benchmark: international market overview



## European roaming regulation

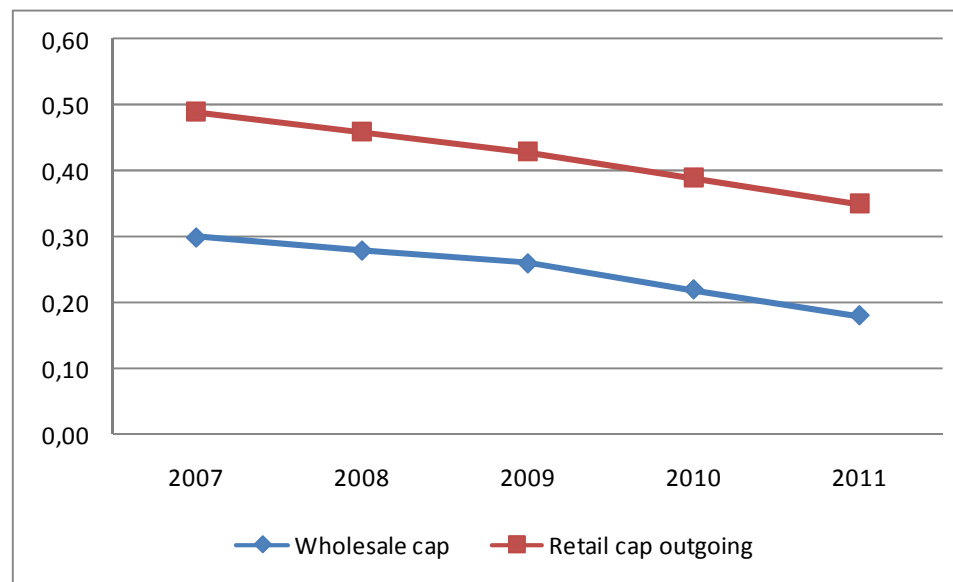
As of 1 July 2010, the Roaming Regulation foresees the following:

- Operators will have to impose a monthly **default cut-off for data roaming of €50**. Consumers can also select a different cut-off limit if offered by the operator or opt out of this bill shock safeguard entirely.
- Operators are obliged to **send users a warning** when they reach 80% of their data-roaming bill limit. The operator will have to cut off the mobile internet connection once the limit has been reached, unless the customer has indicated they want to continue data roaming.
- Prices for **mobile roaming calls** will be **reduced** further with a maximum tariff of €0.39 per minute for calls made and €0.15 per minute for calls received.
- The maximum **wholesale prices** for **data roaming** fall from €1 to €0.80 per MB.
- Receiving a voice **mail message** while roaming will become **free of charge**

The new rules had an important effect in European mobile operators. The following table shows the effect in Spain which was one of the countries with higher roaming tariffs.

	Sent calls	Received calls		Sent calls	Received calls
Vodafone	0,75 €/min	0,5 €/min	After regulation →	2007	0,49 €/min
Orange	0,75 €/min	0,51 €/min		2008	0,46 €/min
Movistar	0,79 €/min	0,5 €/min		2009	0,43 €/min

## EU Roaming



	2007	2008	2009	2010	2011
Wholesale cap	0,3	0,28	0,26	0,22	0,18
Retail cap outgoing	0,49	0,46	0,43	0,39	0,35

Retail prices (excluding VAT)

The European Commission has defined a **glide path for regulating the originating and receiving calls** when roaming as well as a **cap for the wholesale services** when the customer is roaming. The **aim** is to **decrease** the price of **voice** while roaming in **more than a 70%** and the price of **SMS** while roaming in a **62%**

# Contents



1. Introduction

2. Benchmark: international market overview

3. Roaming regulation: strategies

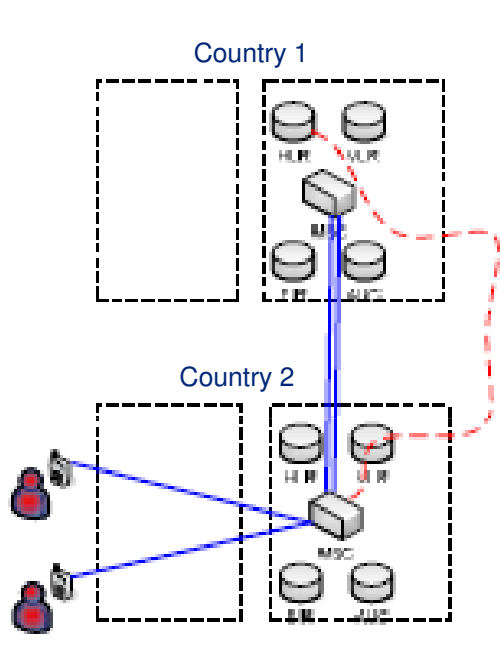
3. 1 Wholesale

3. 2 Retail

4. Adaptation to new market challenges

5. Conclusions & Recommendations

## Main principles in roaming



There are different routing modes that can be used for international roaming calls:

- Calls inside a visited country
- Calls from a visited country to the user's home country
- Calls from a visited country to a third country
- Calls received in a visited country.

In GSM, the most important components used when international roaming is required are:

- HLR, the Home Location Register,
- VLR, the Visiting Location Register,
- MSC, the Mobile Switching Center.

International roaming involves, mainly, the following services:

- **Mobile origination (MO)**, costs comparable to MT
- **Mobile/Fixed termination (MT/FT)**, Mobile termination rates are subject to regulation within the EU and are in principle cost-based
- **International Transit (IT)**, International transit costs depend on the inter-operator tariffs agreed between operators
- **Roaming specific costs (RSC)**

## Market structure

### Retail market

#### Demand:

- Most subscribers **use this service only occasionally**,
- **Level of roaming charges** is not used as a parameter in competition
- Roaming may therefore constitute a major share of the traffic and revenue **in tourist areas**.
- **Lack of transparency** will not lead to a higher demand

#### Offer:

- Suppliers at the retail market include **all mobile operators at the national market**
- The **retail market is more competitive than the wholesale market** as it includes network operators as well as virtual operators
- **Mark-ups demanded by mobile operators are higher** than ones on the other mobile services

### Wholesale market

#### Demand:

- **Demanded by all mobile operators** offering international roaming to their retail customers.
- **Only few operators with an international structure** are able to handle part of their roaming within their own network
- Operators will charge **their retail customers a price covering the wholesale roaming costs plus a mark-up** covering various retail costs

#### Offer:

- The number of suppliers of roaming services is the same as the suppliers of wholesale mobile services in the respective countries
- **In most countries all mobile network operators are required to provide roaming services to foreign operators** (3-4 in most of the EU countries)
- it is not always possible for the Home MNO to choose the Visited MNO **with lowest charges**.

## Which is the best option for regulating these services?

	REGULATION	NO REGULATION
RETAIL	<p>The imposition of price ceilings for roaming services at the retail level would be effective in ensuring price reductions. However the imposition of such a cap would require a corresponding reduction at wholesale level if all operators are to be in a position to offer the service without suffering a loss. Therefore, this solution could prevent even efficient smaller operators from being able to provide these services.</p> <p>Wholesale and retail regulation may be necessary if there is lack of competition at both levels. However, action to reduce the level of the wholesale charges is likely to have a positive effect on retail prices given that current levels of wholesale prices constrain market players (particularly smaller players) from competing at retail level.</p>	<p>The option of no regulatory intervention would mean allowing market forces to work.</p> <p>By taking these option the problems related to transparency and high wholesale charges would likely remain.</p> <p><b>Transparency measures</b> will help to address the problem of 'bill shock' by increasing consumer awareness of the retail charges and by giving consumers the tools to control expenditure.</p>
WHOLESALE	<p>High wholesale charges combined with traffic steering difficulties for roaming, are causing difficulties with providing transparent retail offers and clear information to consumers. The problem is caused by the ineffectiveness of traffic steering which results in operators having to pay exorbitant rates for the remaining traffic. A wholesale cap combined with transparency measures would eliminate these excessive charges</p>	

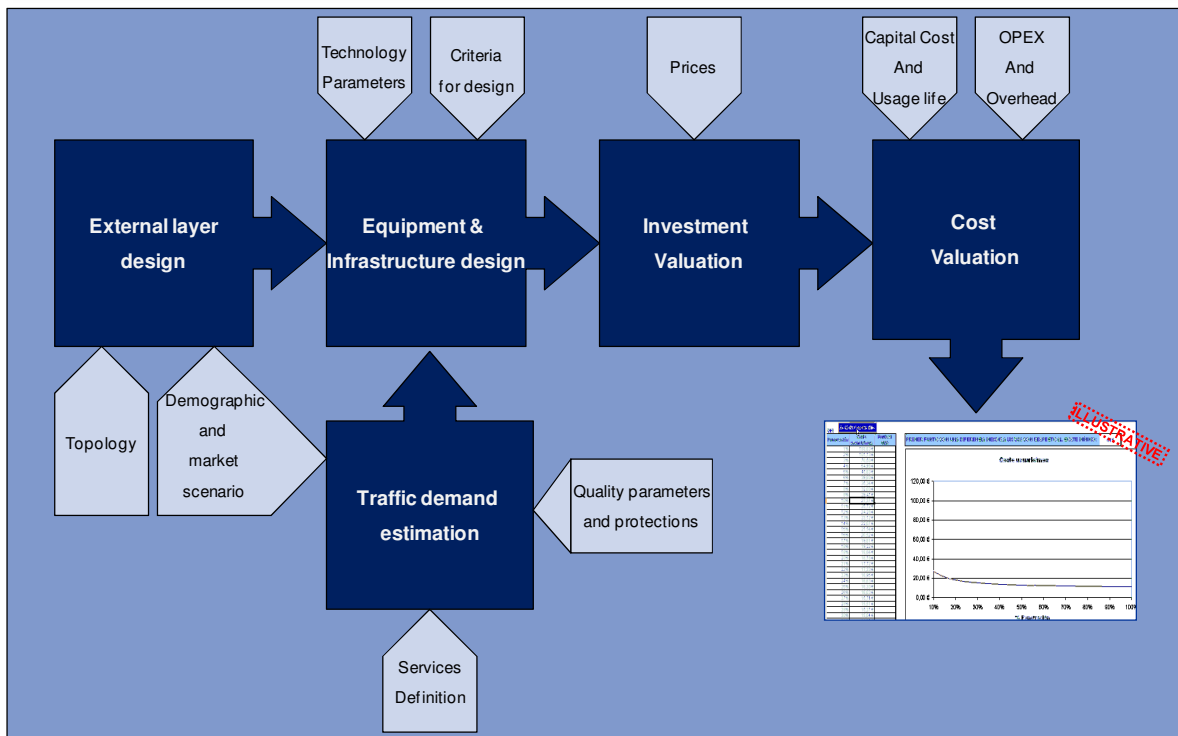
Following the three criteria test before regulating, it is necessary to analyze several issues:

- 1 **Define the relevant market** from a product and geographical point of view
- 2 **Identify SMP** in the market
- 3 **Valuation** of the conduct followed by SMP
- 4 **Impose obligations** (ex-ante /ex-post)

- The introduction of price regulation at retail level is certainly more controversial than price regulation at wholesale level. In this sense, options as price cost based or based on a reference offer could be the first step to equilibrate the market.
- It is necessary to simplify the tariffs so it makes it easier for people to understand what they are getting into

# Which costing models can be applied?

## Bottom up Model



## Key variables

- WACC
- Assets life span
- Assets valuation
- Routing factor matrix
- Demand profile
- Identification of the Network usage for the provision of the services

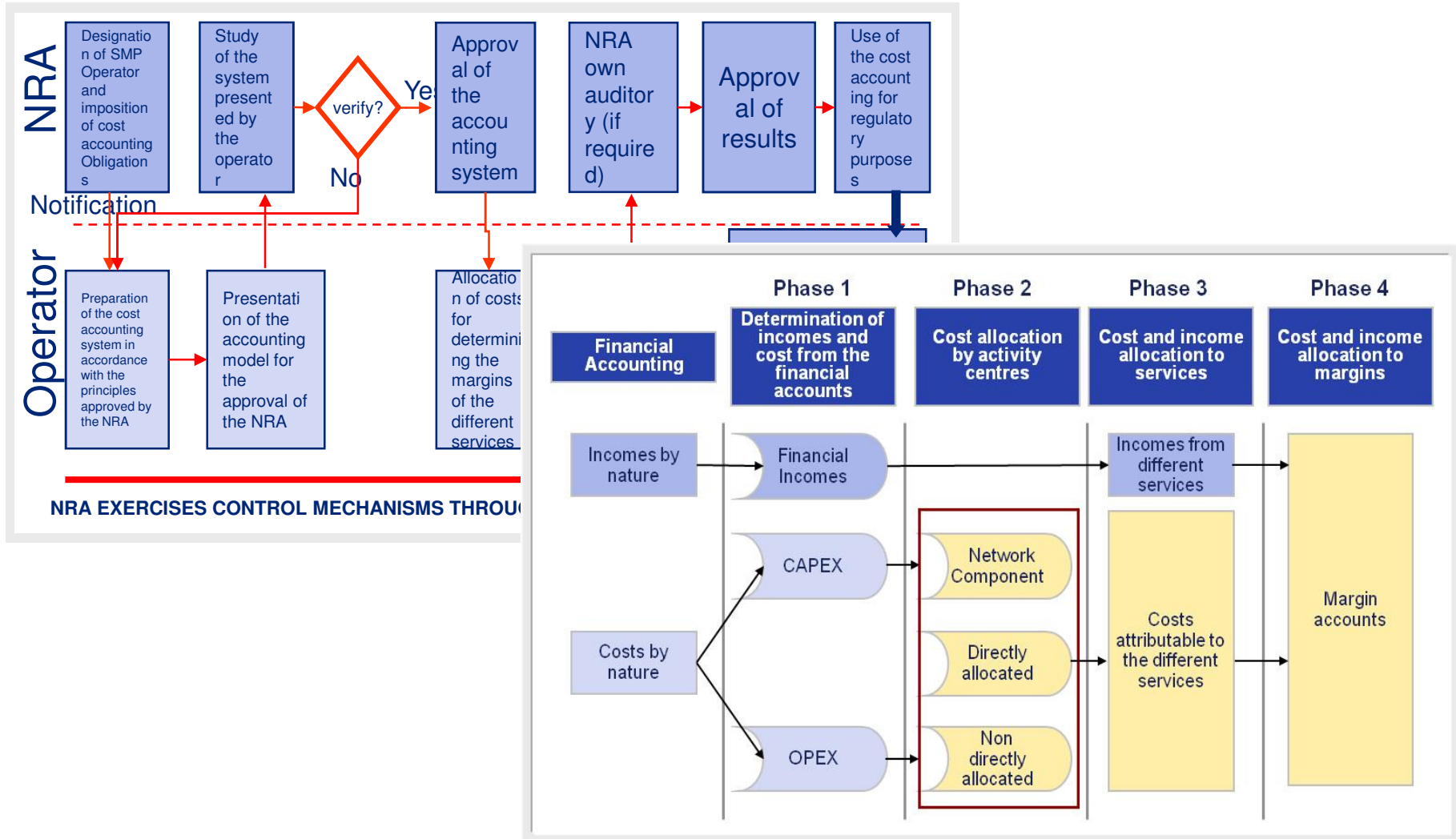
Taking in account the estimated costs obtained from the LRIC model, the NRAs eventually set the wholesale prices by summing a mark up which depends mainly on the playing level field competition



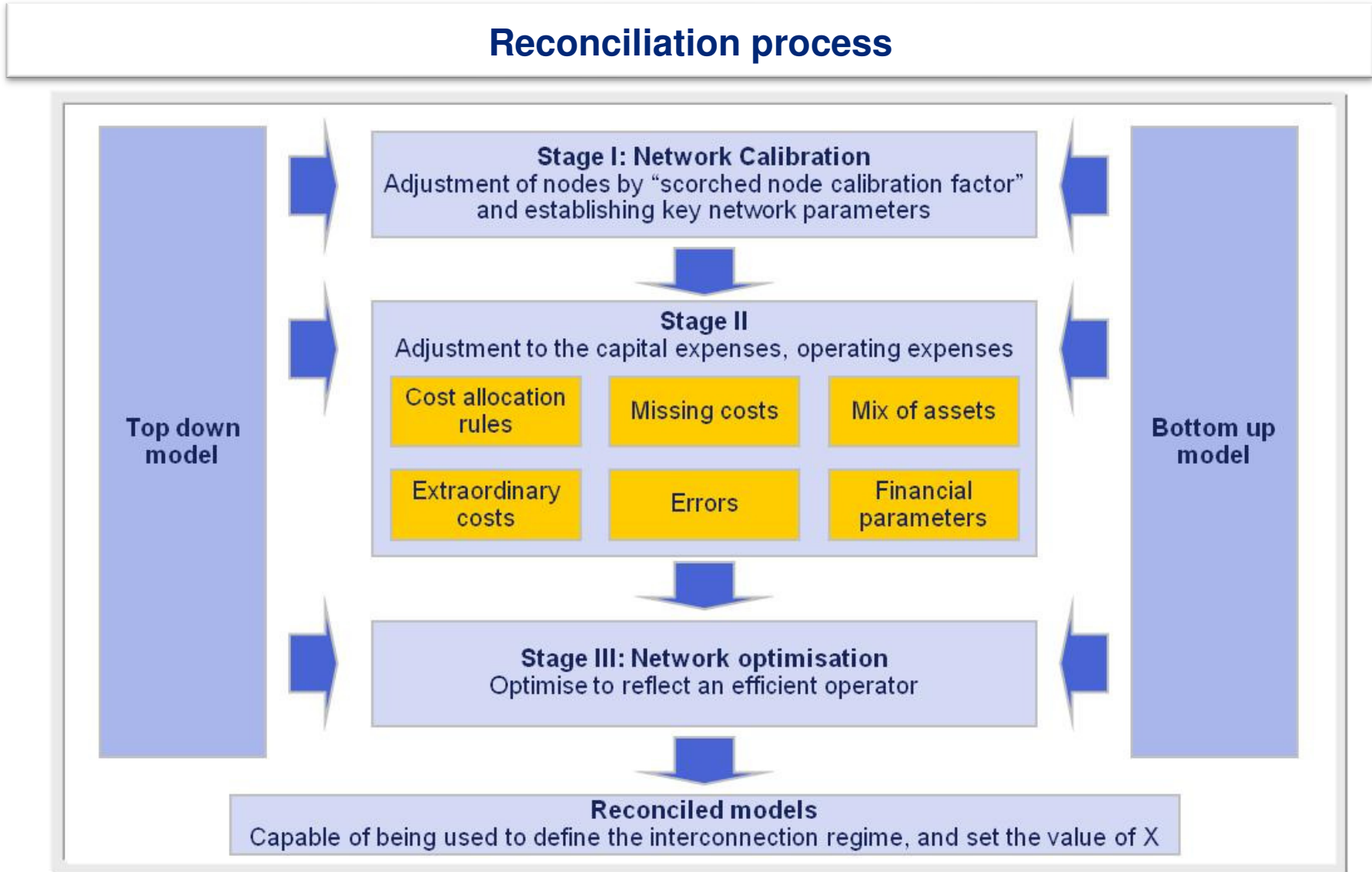
# Which costing models can be applied?



## Top down Model



# Which costing models can be applied?



## Some issues to be considered



### • Predation mechanism: symmetric or asymmetric prices?

- External factors

Spectrum bands  
Time to enter into the market

- Internal factors

Investment related to frequency bands  
Financial capacity  
Economies of scale /scope

- Other variables

Demand profile  
Barriers to enter  
Others.....

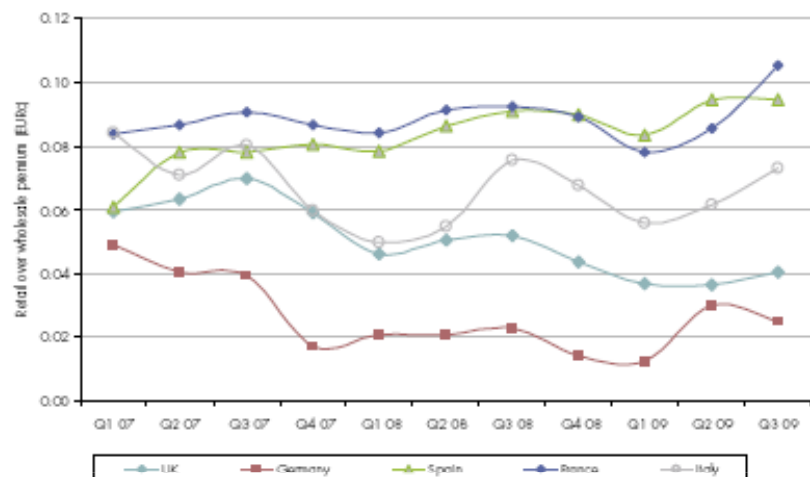
## Major unitary costs that could tend to a retail policy as a strategy for differentiation

**On/off-net differentials** appear as a result of competition between networks, in the presence of different cost termination charges and strategic effects due to call externalities

# Decrease of MTR in Europe

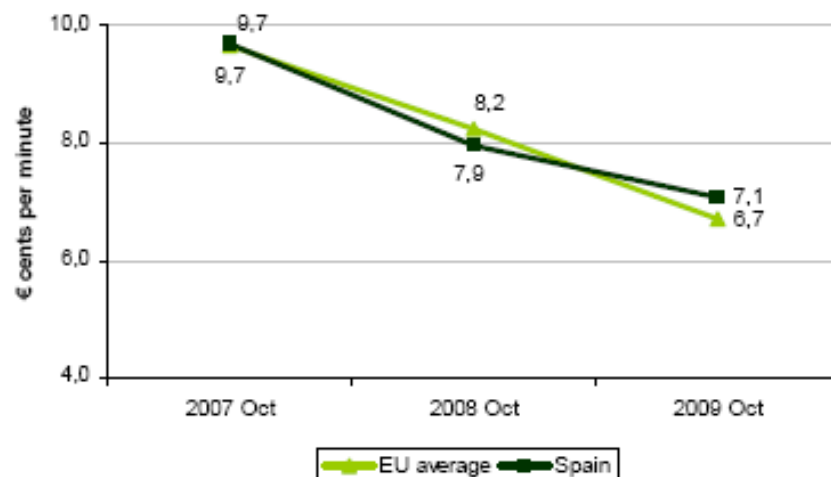


## Retail price premium over MTR in Europe's major markets



- Maybe there is a limited room for further price reductions in some countries and MTRs will now remain stable until a near future.
- There is no tendency of prices falling in response to the accelerating MTR pressure

## Evolution of mobile termination rates



- The MTRs of the four MNOs and nine 'full' MVNOs have decreased according to the established glide path (7.08 €-centson average) and are now above the EU average (6.70 €-cents)
- In July 2009, the CMT adopted the final measure on the mobile termination market establishing an asymmetric glide path that will reduce MTRs from 10.42 €-cents/7.00 €-cents to 4.98 €-cents/4.00 €-cents in October 2011
- The regulator is developing a LRIC bottom-up model, which should be applied as from 2012 in accordance with the Commission Recommendation on mobile ermination rates.

## Price cap

- It sets a maximum allowed inter-temporal path for the price of a specific product based **on the overall rate of inflation in the economy**, the ability of the operator **to gain efficiencies relative to the average firm in the economy**, and the **inflation in the operator's input prices relative to the average firm** in the economy
- Basic formula employed to set price caps takes the rate of inflation, measured by the Consumer Price Index and subtracts expected efficiency savings X.
- It provides **incentives for efficiency savings**, as any savings above the predicted rate X can be passed through to the operator at least until the price caps are next reviewed. Also, it allows to recover costs and facilitate investments.
- But...it's difficult to estimate "**X**" factor

## Glide path

- Instead of a **one-off price adjustment (a large discrete price change)**, the regulator may establish a prescribed price path over time, so companies are given proper signals for future cost containment and investments. So, regulators reset the starting price to define another price.
- Glide path is established to **maintain incentives for cost containment during the last stages of a price control**. Alternatively, a discrete price adjustment (or One-Off approach) is used to quickly re-set the price at a level where expected returns are not excessive (or inadequate).
- This model was mainly used for regulating MTR and wholesale Roaming services

# Contents



1. Introduction

2. Benchmark: international market overview

3. Roaming regulation: strategies

3. 1 Wholesale

3. 2 Retail

4. Adaptation to new market challenges

5. Conclusions & Recommendations

### Spectrum and new mobile networks

NRAs that have used mechanistic approaches (LRIC models) to calculating cost oriented prices face with increasing complexity, when compared to 2G networks with current and future mobile networks which delivered more complex products and services:

accounting for 3G /4G spectrum costs;

migration of customers and traffic to 3G networks which are multi-service platforms;

dual running of 2G 3G and 4G infrastructure;

future traffic growth –fixed to mobile substitution;

Fixed and mobile broadband networks;

### New structure of mobile markets around the world:

- Market consolidation
- Refarming of 900MHz and 1800MHz to UMTS
- Digital dividend 800Mhz;
- Other bands like 2600Mhz
- Femtocells/ picocells

NRAs, which have previously adopted cost-oriented regulation based on LRIC, have to consider the “near static” costs as well as the “ efficient operators concept” according to the new rules of the market.

# Contents



1. Introduction

2. Benchmark: international market overview

3. Roaming regulation: strategies

3. 1 Wholesale

3. 2 Retail

4. Adaptation to new market challenges

5. Conclusions & Recommendations



## Conclusions and recommendations

---



- **No easy way to regulate services** (roaming) involving several countries
- Roaming can be estimated as the sum of an **origination, a transit and a termination**. Regarding this equation, as a first cost estimation origination could be associated to termination rate but transit depends on commercial agreement between operators.
- Several **costing approach (bottom up, top down, price cap,...)** to calculate the price charged in order to benefit the end user
- **Sometimes NRAs**, as it has happened in the case of the European Commission, have designed and **implemented retail and wholesale caps** and also a particular **glide path** for setting the evolution of both, retail and wholesale throughout the regulatory period. The major argument for such heavy-handed regulation is that at present international roaming prices are much higher than cost-based prices, and that roaming charges represent a major barrier towards growth in international mobile communication within the EU.<sup>4</sup>
- The EU intervention is a **compromise between those asking for cost based roaming charges and the interests of operators** – particular those operating in major tourist destinations

# **Regional Seminar on Costs and Tariffs for Member Countries of the Regional Group for Asia and Oceania (SG3RG-AO)**

**David Bernal Cantero**

david.bernalc@gmail.com