

# **Séminaire régional de l'UIT sur les coûts et les tarifs en coordination avec la réunion du Groupe régional de la Commission d'études 3 de l'UIT-T pour l'Afrique (SG3RG-AFR)**

## **Short Message Service (SMS)** *Analysis, problems and opportunities*

**A presentation by Dr. Antonio G. Zaballos  
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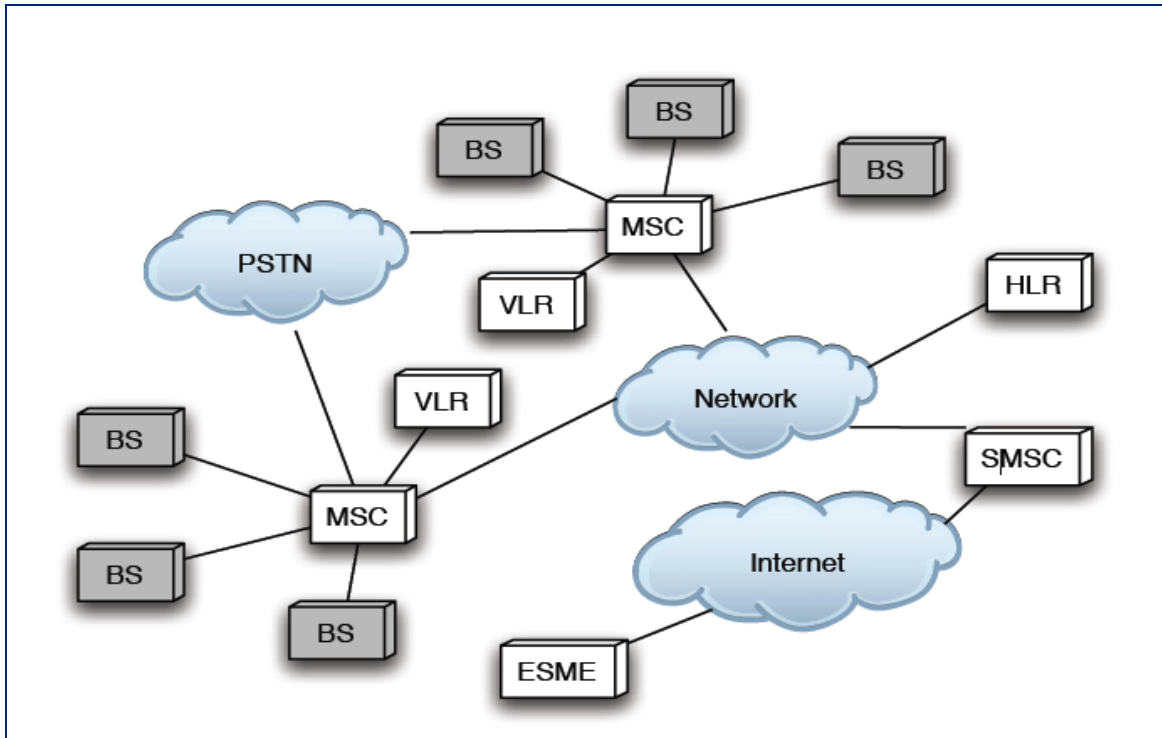
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# 1. SMS Network overview

# SMS network overview



## Glossary:

- ESME: External Short Messaging Entity
- SMSC: Short Messaging Service Center
- HLR: Home Location Register
- BS: Base station
- MSC: Mobile Switching Center
- VLR: Visitor Location Register

[www.smsanalysis.org](http://www.smsanalysis.org)

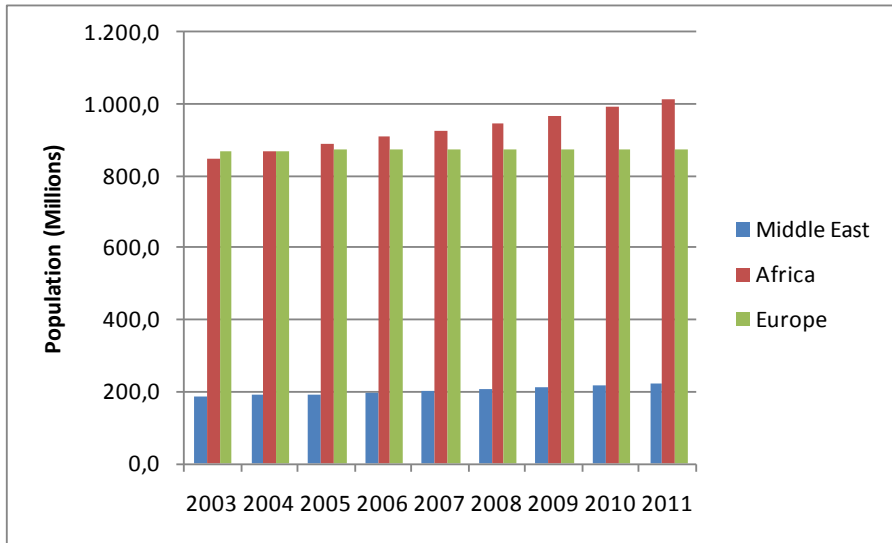
Messages are delivered (from Internet via ESME or other user) to a server that handles SMS traffic known as the **Short Messaging Service Center (SMSC)**. Upon receiving a message, the contents of incoming packets are examined and, if necessary, converted and copied into SMS format. Messages are then placed into an SMSC queue for forwarding.

The **SMSC** needs to determine how to route messages to their targeted mobile devices. The SMSC queries a **Home Location Register (HLR)** database, which serves as the permanent repository of user data and includes subscriber information (e.g. call waiting and text messaging), billing data, availability of the targeted user and their current location.

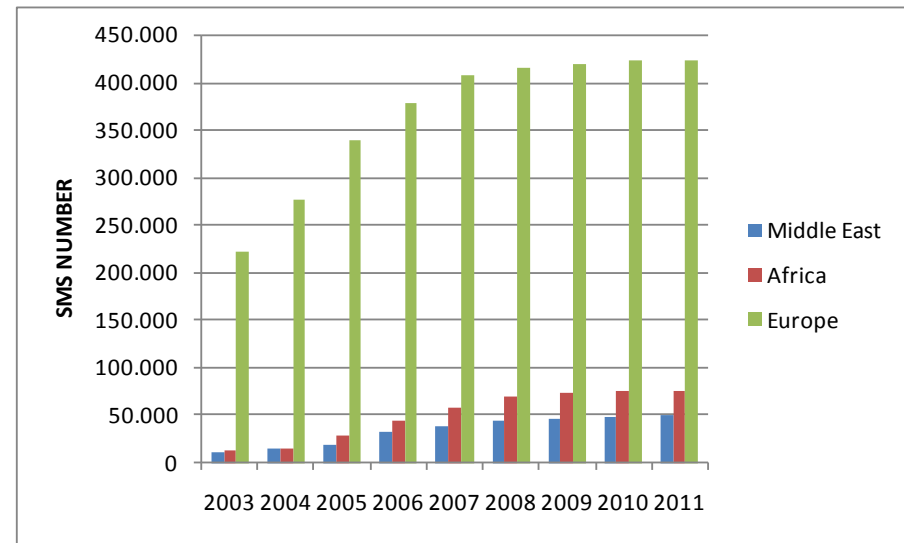
The response will contain the address of the **Mobile Switching Center (MSC)** currently providing service. In addition to call routing, MSCs are responsible for facilitating mobile device authentication, location management for attached base stations (BS).

## **2. Evolution of the mobile market in EMEA**

# Population vs number of SMS



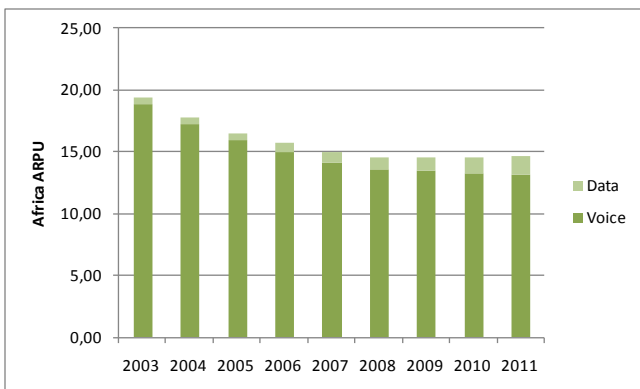
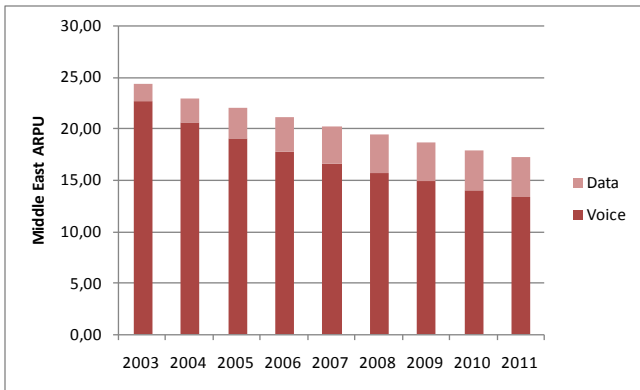
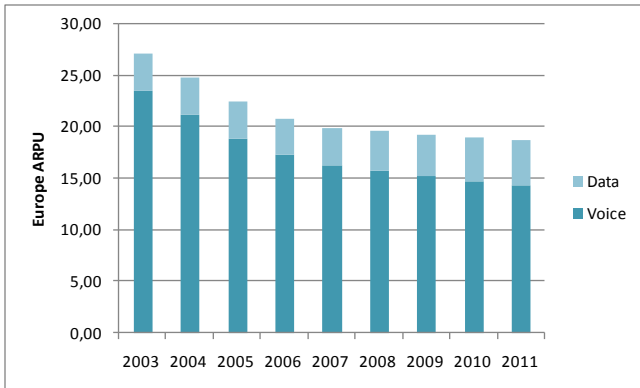
Source: www.yankeegroup.org



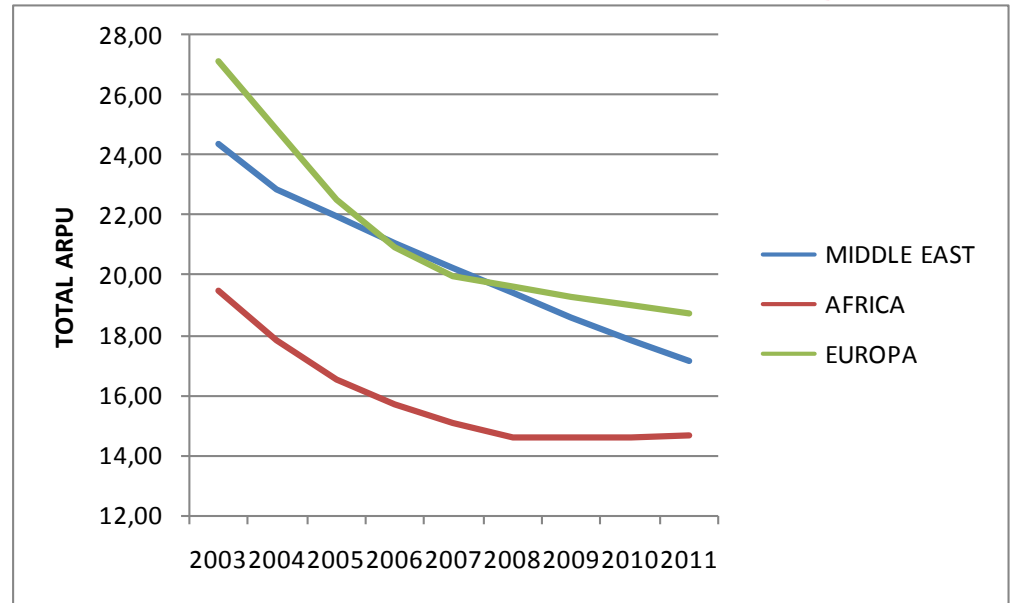
Source: www.yankeegroup.org

- The number of SMS sent has sharply increased from 2003 to 2007 in EMEAs Countries. However, this number has remained fairly constant over the past 3 years in Europe. In Africa the increase during 2007-2010 was 28% and Middle East was 25%
- Nevertheless, the aforementioned figures show that the rate of SMS sent per person is six times and three times greater in Europe and Middle East respectively, than in Africa. Thus, the Africa SMS market will have a huge potential in the following years.
- Unlike Europe where the population is remained constant and Middle East where is growing slowly, the increase of population in Africa will lead to an increased use of those SMS services.

# ARPU analysis



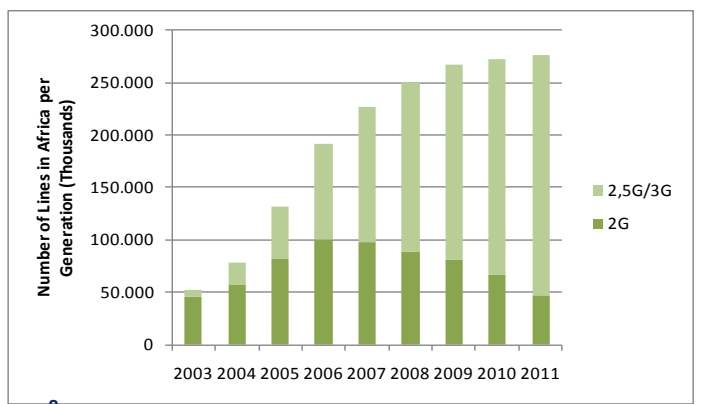
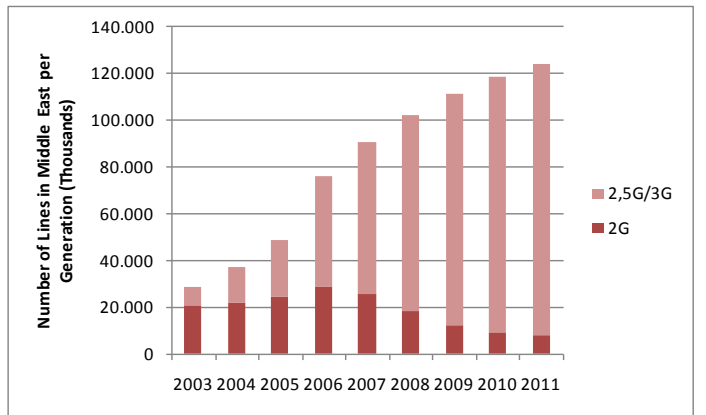
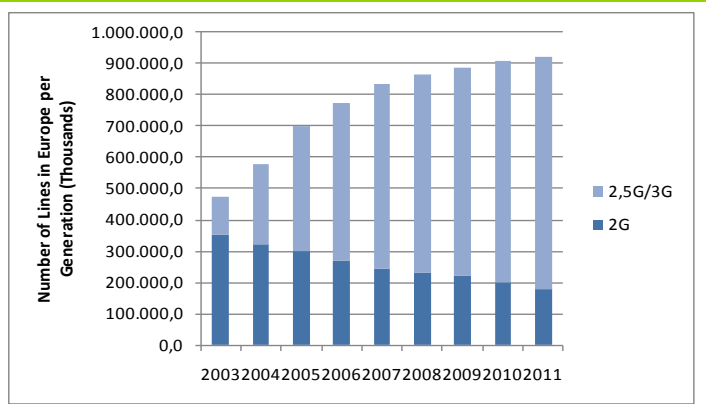
Source: www.yankeegroup.org



Source: www.yankeegroup.org

- European and Middle East mobile Arpu will decrease in the following years due to the increased competition. Nevertheless, African countries are the only whose Arpu is increasing and will be expected to increase in the following years.
- Besides it is shown that Data ARPU in Africa is increasing mainly caused by SMS premiums.
- Due to those data, it is clearly understood that a proper SMS and SMS premium regulation is needed in African countries.

# Technological analysis...



• The following data, show the and number of lines behavior by technology:

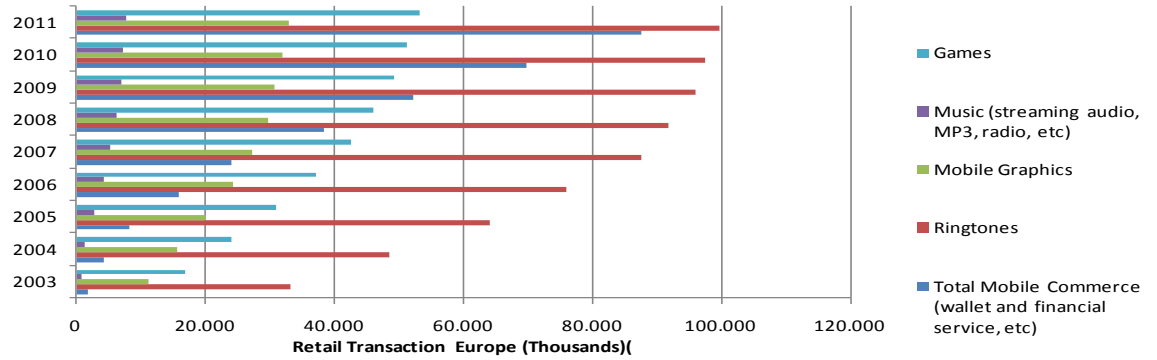
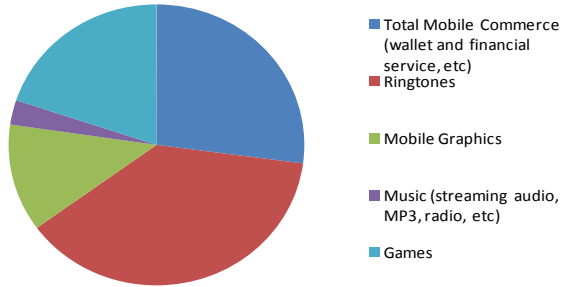
- In Europe, the number of lines has increased in the last two years a 4,9 %. Nevertheless, the number of 2.5G/3G lines have increased an 11%.
- In Middle East, the number of lines has increased in the last two years a 15,71 %. Besides, the number of 2.5G/3G lines have increased an 30%.
- In Africa, the number of lines have increased in the last two years a 8,66 %. Futhermore, the number of 2.5G/3G lines have increased an 28%.

**That increase on 2.5G / 3G lines provides to users a new catalogue of mobile applications, mainly based in SMS premiums**

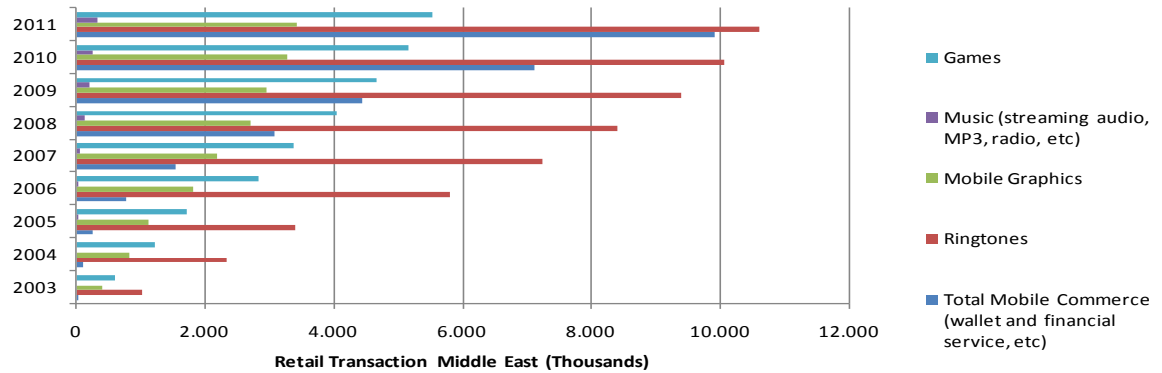
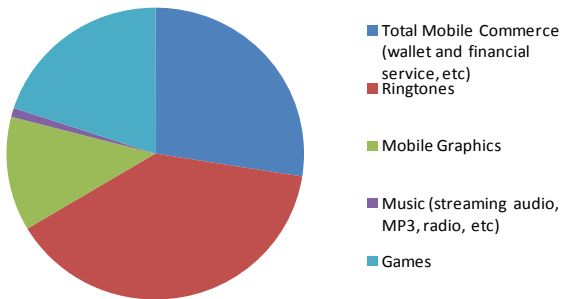


# ...and new services analysis

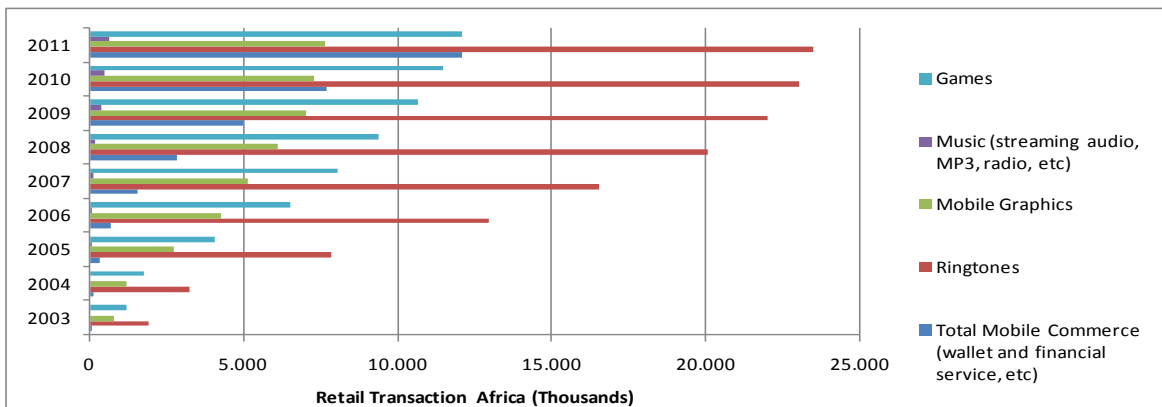
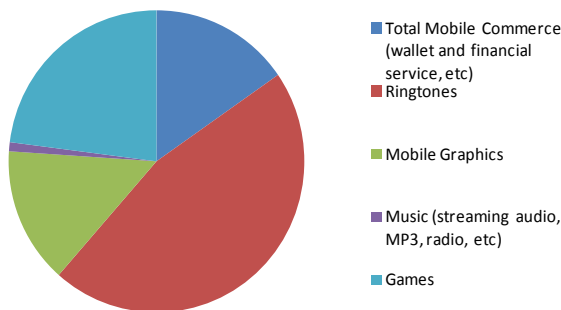
### Retail Transaction Europe 2010



### Retail Transaction Middle East 2010



### Retail Transaction Africa 2010



# 3. Steps for market analysis

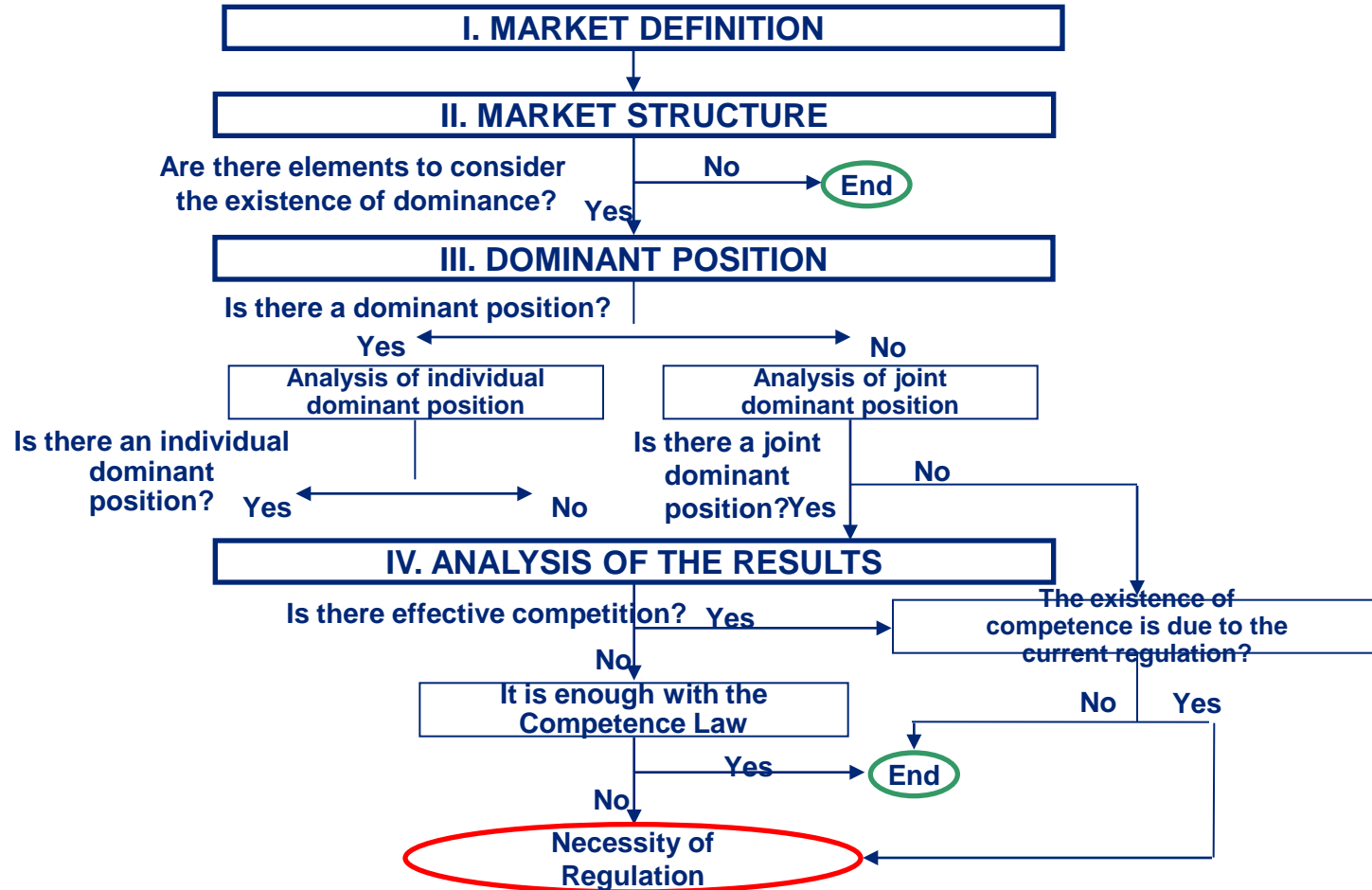
NRAs could only propose to regulate the market of SMS termination if it can show that it fulfils the three criteria test covering:

1. Existence of high and non-transitory barriers to market entry,
2. No tendency towards effective competition over time and
3. Insufficiency of competition law alone.



Market analysis implies to study the market conditions under two different standpoints:

1. Scope of the products and services that are included in the market
2. Geographic scope where those services are provided



The debate nowadays is whether ex ante obligations should be imposed to the SMS termination

When, as a result of a market analysis carried out by NRAs, a relevant market is considered not effectively competitive; regulators may impose on SMP operators the next obligations:

- Transparency – RIO & RUO
- Non-discrimination
- Accounting separation – Avoid margin squeezes and unfair cross-subsidies
- Mandatory access to and use of specific network facilities
- Price control, including cost orientation

## The case of France

ARCEP has proposed to carry over current regulation of SMS termination rates due to the lack of competition at the wholesale level. ARCEP would also introduce a stricter SMS termination price cap and to apply it symmetrically to all MNOs.

In July 2006 ARCEP became the first NRA to regulate the wholesale market for SMS termination by imposing, among other things, the following asymmetric price caps:

- 3.5 eurocents per SMS for Bouygues Télécom; and
- 3 eurocents per SMS for Orange and SFR.



## The case of France

ARCEP considered that current regulation has had a positive impact on the retail market, as it has led to a significant increase in the use of SMS at no additional cost for heavy SMS users.

But ARCEP noted that competition did not develop between MNOs at the wholesale level. Wholesale charges stayed at the level set by the regulator in 2006, while the volume of SMS increased and the average cost of SMS termination decreased.

ARCEP proposed to impose on each MNO the same set of obligations as in the first round analysis.

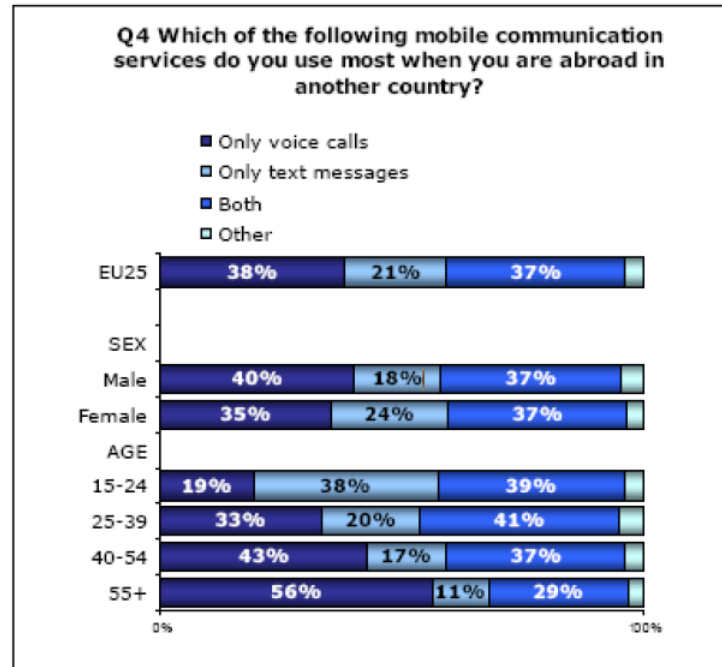
- **Access and interconnection:** meet all reasonable requests for access and interconnection.
- **Non-discrimination:** terms and conditions must be the same irrespective of the type of customer (own business, other mobile operator or SMS aggregator) or the origin of the SMS (national or from abroad).
- **Transparency:** ARCEP intends to extend the scope of this obligation to the publication of a reference offer from the sole obligation to publish SMS termination charges.
- **Price control:** cost oriented SMS termination charges with a price cap. The level will be set based on the costs of an efficient operator (fully distributed cost model based on historic costs). Charges would be symmetric.
- **Cost accounting and accounting separation**

In addition, ARCEP considered that the higher SMS termination rate in favour of Bouygues Télécom is not justified anymore, because:

- no longer justified by cost differences; and
- the success of unlimited tariff plans should prevent the emergence of 'club effects'.

# **4. European situation and regulatory policy in place**

The following graphic represents the use of the mobile in roaming transit divided in voice and short messages:



The 21% of the EU25 user mostly use SMS while they are abroad. That pattern of use moved the European Commission to introduce regulatory actions



## EU Roaming I

Both wholesale and retail prices not justified by the underlying costs.

**Average retail charge for a roamed call: €1.15 per minute** (residential), more than five times higher than the actual cost of providing wholesale service.

Retail roaming charges are roughly four times higher than domestic tariffs. EU market for international roaming **estimated at around €8.5 billion**, which is **5.7% of total mobile industry revenues** estimated at around €150 billion.

**147 million EU citizens affected**, of whom 110m are business customers.

- Lack of retail price transparency; many **consumers are not aware** of the high charges for receiving calls
- Situation cannot be solved using existing regulatory tools

## EU Roaming II

### • Voice calls

- Charging on a per-second basis, with possible initial charge not exceeding 30 seconds
- Switching requests within 1 working day and free of charge

### • SMS

- Retail cap introduced at €0.11 per message sent
- Received SMS free of charge
- Wholesale cap at €0.04 per message

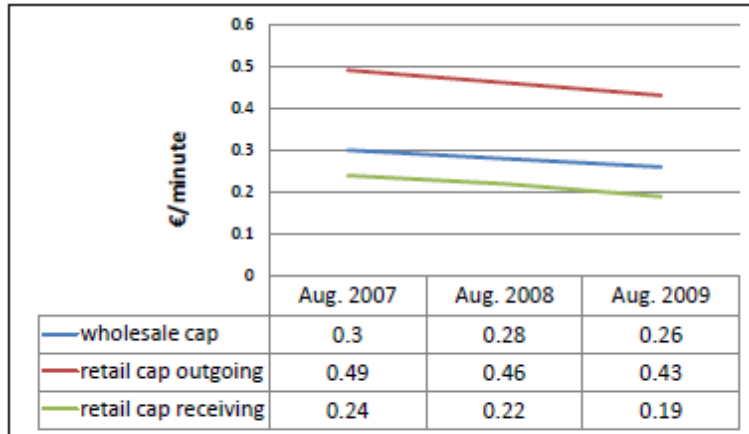
### • Data roaming

- Wholesale cap at €1 per MB in 2009 (€0.80 and €0.50 in 2010 and 2011 respectively)

### • Transparency measures

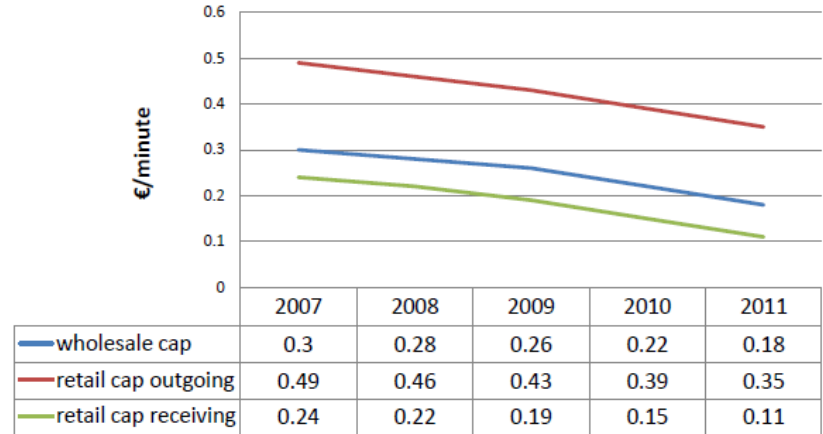
- SMS notification on SMS charges
- Data services: from July 2010 obligatory information on accumulated consumption (volume or currency). Limit up to €50/month (opt-out criterion)
- Notification when 80% of agreed financial or volume limit is approached

## EU Roaming I



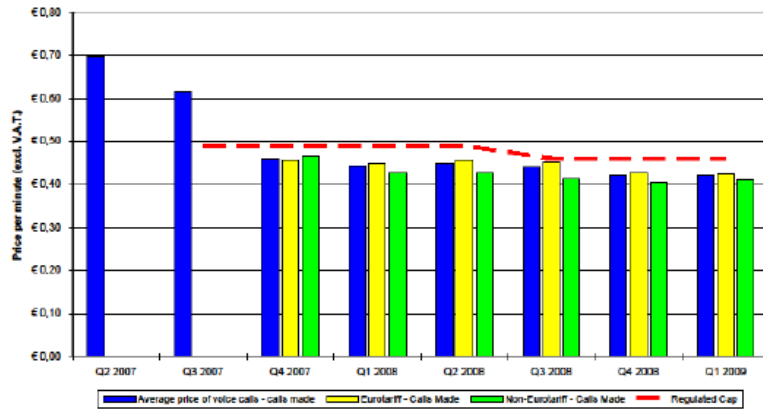
*(retail price exclude VAT)*

## EU Roaming II



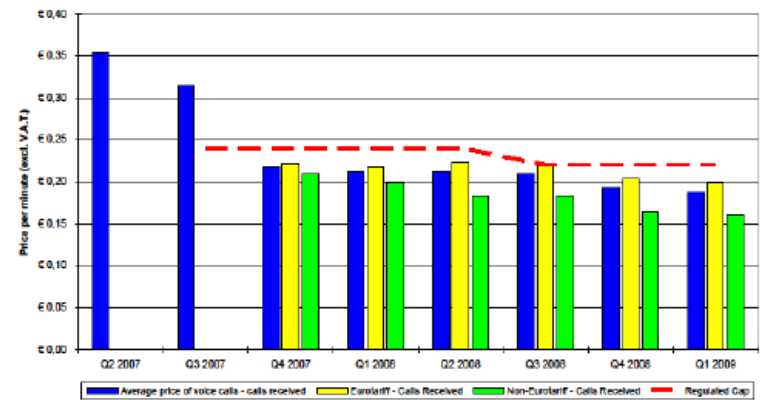
*(retail price exclude VAT)*

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



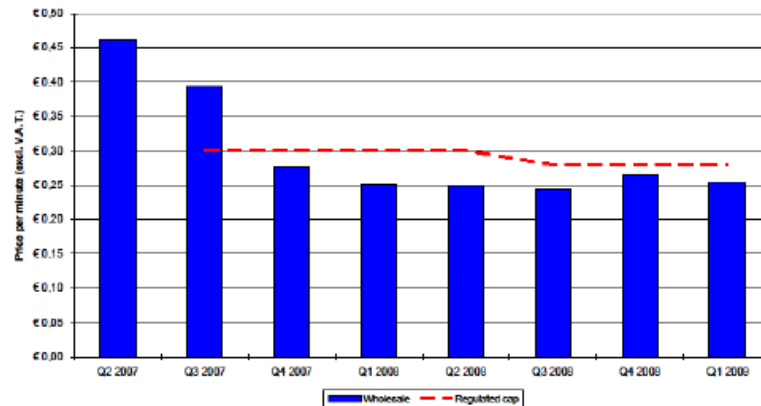
Source: ERG, 4<sup>th</sup> report, 2009

The average price for calls made has come down since introduction of the 2007 Regulation and that both Eurotariff and non-Eurotariff averages are below the Eurotariff cap.



Source: ERG, 4<sup>th</sup> report, 2009

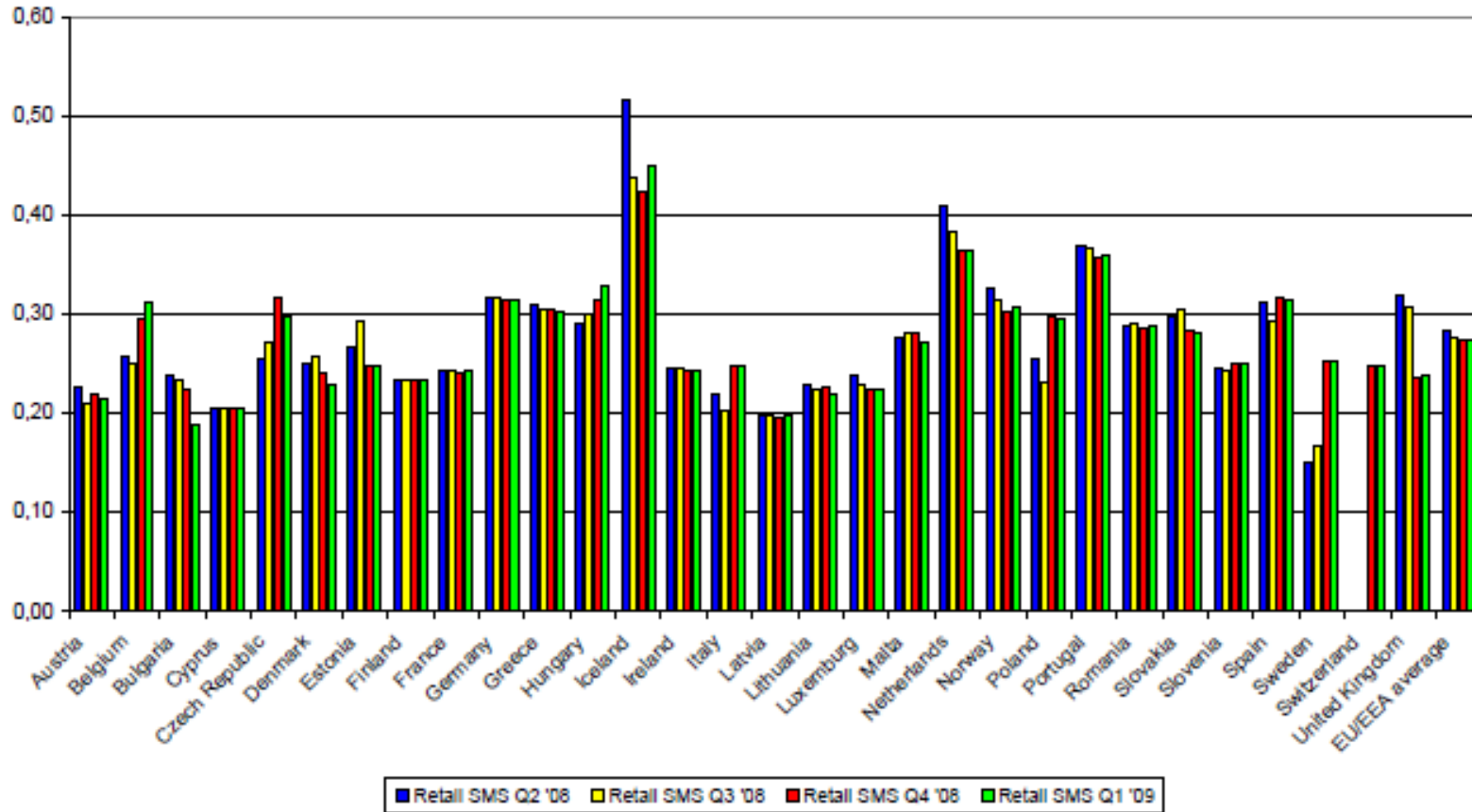
The data suggests that for calls received there are non-Eurotariff offers that offer a better deal than the standard Eurotariff.



Source: ERG, 4<sup>th</sup> report, 2009

The EU/EEA average price at the wholesale level from Q2 2007 until Q1 2009 illustrates the clear drop in the average soon after the implementation of the 2007 Regulation. Since then the prices seem to have stabilized.

# Evolution of the price of SMS



The average price has remained relatively stable, with some variation between countries. An average price reduction of around 60% will be necessary to ensure compliance with the new price cap.

# 5. Treatment of SMS Premium

Premium Rate Services (PRS) usually refer to service providers' services that can be accessed via a premium rate telephone number for which the caller pays a special premium rate. These services cover fixed line services such as TV vote lines, but also mobile services such as ring tones and premium SMS

Countries as UK, France, Denmark, Italia and Spain have specific legislation to guarantee the information on the price, duration/number of SMSs, price ceiling, protection of youth, elderly and disabled, privacy.

**The issue here is: Which model should be applied?**

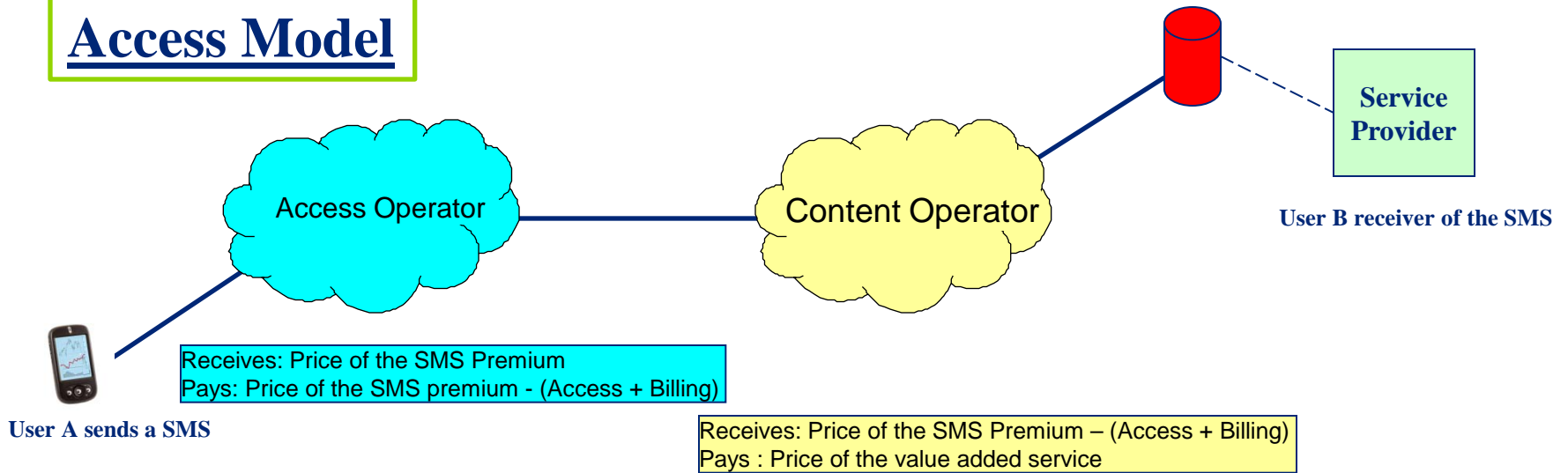
The access model

vs

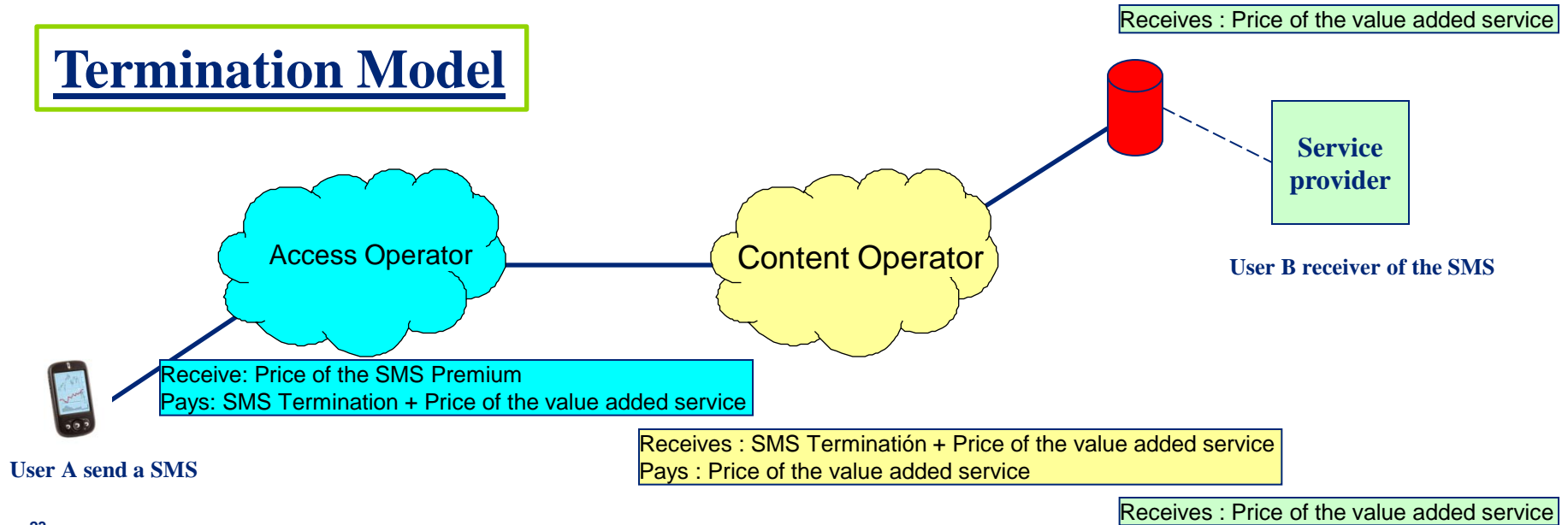
The termination model

# Access model vs Termination model

## Access Model



## Termination Model



# 6. Other issues to think of...



- Up to what extent the SMS are substitutes of the voice service?
- The payment chain that has been shown in the case of SMS Premium could be an argumentation to be used for net-neutrality. In fact, the service providers are paying for the usage of the network... is this comparable to the debate that is taken place between Google, apple, etc and the network operators?

According to the findings of a survey carried out on behalf of UK regulator Ofcom and published in October 2008, between 74% and 86% of mobile users in France, Germany, Italy and the UK, 55% of those in the USA and 46% of users in Canada send text messages from their mobile phones.

By contrast, 75% of mobile users in Japan use email services on their mobile, while only 27% use text messaging.

Consequently, in most countries, messaging services – particularly SMS – continue to be a key contributor to mobile operators' revenue. For example, they accounted for 15% of Vodafone's service revenue in its four main European markets (France, Germany, Spain and the UK) at the end the fourth quarter of 2008.

# 7. Recommendations

1. To define SMS as a market, the NRAs should verify if the three criteria test are fulfilled: (i) High and non transitory barriers to entry, (ii) no tendency towards effective competition, (iii) insufficiency of competition law.
2. To analyse the level playing field NRAs usually conduct market analysis. By doing the market analysis, NRAs are able to identify the main competition problems, designate SMP Operators and eventually define the type of ex ante obligations to be imposed.
3. The number of SMSs sent have increased significantly in the last years. Up to what extent can it be considered as a substitute of the voice?.
4. SMSs are contributing to increase the ARPU and the launch of new services and applications.
5. The regulation applied in Europe has been a two stages where specific caps have been set for retail and wholesale roaming services. As a consequence the Operators have decided to launch specific products with attractive tariffs to encourage the traffic.
6. Issues as the regulatory policy applied to the SMS premium is becoming a major concern among the different European NRAs and the establishment of an access/termination model is under discussion.
7. Open the discussion on SMS premium could lead towards the net neutrality problem and how the content providers should, if applicable, pay to the network operators.