

## PRICING ISSUES ON MOBILE TELECOMMUNICATION MARKET

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*Pricing in the market is intimately linked with the evolution of market structure. As with many network industries, pricing to a large extent relies on two-part tariff systems. The analysis of pricing plans is complicated by the fact that it concerns competition among networks. Price setting in mobile telecommunication industry is based only slightly on cost and is designed rather to exploit market power. This is most effectively undertaken in the traffic termination services on mobile networks, in particular for traffic originating from fixed line networks. A great deal of subscribers and market growth has therefore been possible thanks to the transfer of termination payments from the fixed to the mobile network. This also applies for the Romanian telecommunication market. Moreover, due to the five important mobile telecommunication competitors, a price analysis is very hard to be made. However, mobile telecommunication companies follow almost the same scenario introducing price offers that are difficult to be compared.*

*Key-words: mobile telecommunication companies, retail prices, wholesale prices, roaming, interconnection pricing*

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### **Introduction**

Pricing in the telecommunications sector used to be regulated. With the liberalization of the telecommunications sector, price regulation was left to market forces. There is the presumption that competitive forces will lead to prices reflecting the cost of providing services. This may not be feasible in all market segments of the mobile telecommunications industry, however network effects may prevent competitive forces from working in the traditional way in spite of open access to infrastructure. For instance, in telecommunications, the monopolist maintains its market power on access to the customer. New entrants on the market have to seek access to the customers via the monopolist. The access price charged by the monopolist has a fundamental role in determining the final price charged to the customer by the new entrant. This setting has been referred to in the literature as the “one-way access problem” (Gruber, 2005; Armstrong, 2002).

Regarding the one-way access pricing problem, this does not seem to reflect interactions in the mobile telecommunications industry. The appropriate framework is that of the interconnection between networks in which each network has its own access to final customers. For instance, mobile firms have their own customers and a great many calls are between customers of fixed and mobile networks. Competing networks also comprising final customers thus changed the issue to a “two-way access problem” (Gruber, 2005; Doyle and Smith, 1998).

This led to two sorts of pricing decisions for each firm: the pricing of on-network calls, when in principle all cost elements were under control of the firm, and the pricing of off-network calls where the interconnections payments were due. Competition among networks may not necessarily produce efficient outcomes. For on-network pricing it is assumed that competition among firms induces price competition.

### **1. Theoretical Fundamentals for Pricing in Mobile Telecommunication**

*The one-way access problem.* The standard access prices problem concerns the firm that controls a facility and thus wants to set a price for the access to the facility to recover a monopoly profit. High access prices either prevent entry or maintain a monopoly profit. To favor competitive entry, access price should be set low. But, if the access price is too low, entry of inefficient firms may occur.

The theoretical literature on establishing the appropriate access price for this “one-way access problem” has grown quite large. The general conclusion is that regulation is needed to avoid anti-competitive behavior (Laffont and Tirole, 2000; Armstrong, 2002).

*The two-way access problem.* Whereas with the one-way access problem only the owner of a facility (for instance, the local loop) has direct access to customers, with the two-way access case the firm seeking access also has direct access to its own subscribers. In other words, in the “two-way access” case the two networks have to be interconnected in order to give access to each other’s subscribers. Two distinct two-way access situations can emerge, one without and one with competition for customers. The first situation is familiar for international telecommunications where networks are located in different countries and there is no competition for the subscriber

base (Wright, 1999). The second situation is typical for competitive domestic fixed line telecommunications or mobile telecommunications where firms fight for customers.

With the context of telecommunications networks, two parts of the service can be distinguished: originating the call and forwarding it to the point of interconnection and the termination service, which involves picking-up the call from the interconnection point and transferring it to the final destination. With telecommunications, the entire call is in most instances paid for by the originating party of the call. There may be also cases where the receiving party pays for the termination services (Doyle and Smith, 1998).

## **2. Mobile Telecommunications Pricing by Type of Service**

### ***Retail Prices***

The *retail mobile market* refers to goods and services sold directly to end users – i.e. the provision of access and national and international mobile telephony and “roaming” services to end users. (Harald, 2005)

There are two segments in retail service market: *access* and *airtime or usage*. From the consumer’s point of view, access can be thought of as the ability to make and receive calls. From the perspective of the network firm, this involves registration and recognition by the network as well as the supply of the SIM card. Thus, three basic retail services can be identified for which each consumer can be charged separately – connection, subscription (rental) and call charges (usage). For instance, with pre-paid cards there is no monthly subscription, but there are minimum usage requirements.

*Connection.* An up-front fee is usually charged for connecting new subscribers to the network. The reason for this is to compensate for the costs the operator incurs to register a new subscriber and for the SIM card. In the early days of the industry, these charges used to be very high, but with increasing competition for new subscribers fees have declined significantly and are nowadays waived in several cases, and even negative.

*Subscription.* With post-paid subscription, a fee is typically charged on a monthly basis for access to mobile network. The charge may in some cases include a certain number of free minutes of airtime. Subscription charges are typically part of two-part tariff scheme together with calling charges, whereby a high (low) subscription charge is coupled with low (high) calling charge.

*Airtime.* Air charges are usually based on a per-minute charge. Price competition in many countries is reducing the metering unit from minutes to seconds. This allows users to be charged more precisely according to their effective calling time, and acts as a further incentive for lower prices. Calling charges are differentiated by time of the day (peak vs. off-peak) and by destination.

In Europe, where mobile licenses are generally granted at nationwide level, domestic calls are typically not charged by distance. Nevertheless, some firms have tried to introduce so-called “home-zone” tariffs where the user is charged less for calls placed within a certain area. This tariff scheme was adopted to encourage the possible substitution of fixed for mobile subscription. However, this is not the case of Romania.

### ***Wholesale Prices***

When a cellular subscriber uses the phone outside an area covered by the network of its mobile firm, she is said to be “*roaming*”. Roaming services can therefore be thought of as providing temporary access to customers from other networks. There are two types of roaming, depending on the origin of customers: *national* and *international*. *National roaming* occurs when a subscriber uses her phone within her own country, but at a location which is not covered by the network of her mobile firm. The subscriber therefore uses the network of another, in principle competing firm. *International roaming* occurs when a cellular subscriber is abroad and uses the network of foreign firms.

The pricing of roaming services is undertaken in a two-step procedure. The first is *wholesale pricing*, when the visited network firm charges the user’s home network firm for the calls, usually adding a mark-up of 15% on the normal network tariff. The second stage is *retail pricing*, where the home network firm sets the price for the subscriber, normally by adding 10-35% margin on top of the wholesale price set in the first stage. The roaming price to the final customer thus obtained is therefore the result of double marginalization. Moreover, mobile users typically show ignorance about the roaming costs charged by visited networks (Oftel, 2001) and this induces an absence of price competition at the retail level.

*Interconnection.* Interconnection pricing concerns the price of services of a given network to other networks for access to the network’s customer. In the early days of the industry, mobile telecommunications firms in most countries had a special regime for determining their access prices.

In 2006 were established the maximal tariffs between Vodafone Romania and Orange Romania for the supply of the interconnection services as follows (ANRCTI, 2006):

- 7,21 eurocents / minute, beginning with 1<sup>st</sup> September 2006;
- 6,40 eurocents / minute, beginning with 1<sup>st</sup> January 2008;
- 5,03 eurocents / minute, beginning with 1<sup>st</sup> January 2009.

*Fixed to mobile termination.* There are several networks competing vigorously for the same pool of subscribers, but these networks have a monopoly position in providing services to their subscribers. The termination charge set by a mobile firm does not directly affect the customers of its own network, but does affect the prices set for the fixed line subscriber (Armstrong, 2002).

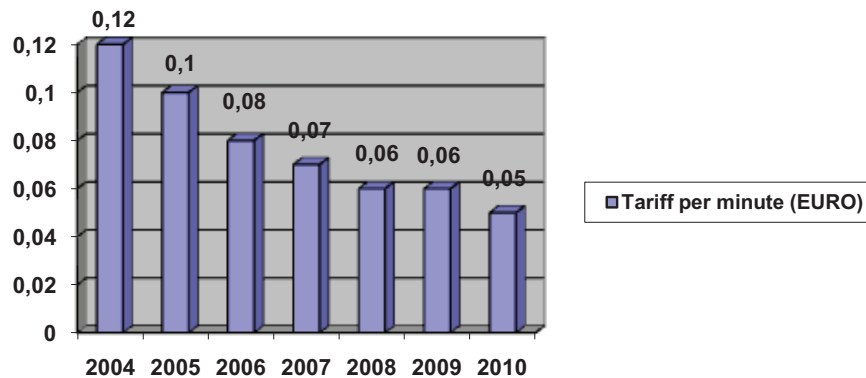
Mobile firms offer new subscribers handsets (mobile telephones) below cost in exchange for a minimum subscription period; however, in this case the cost of the handset subsidy is not covered by the airtime payments of the mobile subscriber, but by the fixed lines subscribers calling the mobile network (Wright, 2002). To redress this situation, regulatory actions are required to lower mobile termination charges to marginal cost (Gans and King, 2000; Armstrong, 2002).

### 3. The Complexity of the Mobile Telephony Services' Prices

The access to mobile telephony services grew within the last years. Technological developments permitted the rise of the services' capacities such as the possibility to send image messages, for instance. It is not a surprise if the demand exploded and the competition became ferocious in more and more countries.

However, those who paid attention to the evolution of the mobile telephony market within the recent years noticed a decreasing of the tariffs, the competition being the main reason.

A study made by the National Agency of Communication from Romania estimate that we will pay 0,05 euro for a minute of call within the mobile networks in 2010, half of the price paid in 2004 for the same service. (fig. no. 1)



**Figure 1 - Evolution of tariffs in mobile telecommunication**

(Capital Magazine, No 9 / 5.03.2009)

Regarding the most sold offer, every mobile telephony provider has a winning goal. For *Vodafone*, the most popular subscriptions are those with minutes included. The cheapest subscription is *Vodafone 50*, which costs 8,92 euro per month and includes 50 national minutes.

If in 2007, the 3 euro subscription was the most popular beginning with the year 2008, the subscription *Orange Flexible* had the most dynamic evolution, raising five times in 2008, compared to the year 2007.

*Zapp* operator is preferred for the data services, the most successful subscriptions were those "entry-level" with tariffs from 0,04 USD per minute.

For *Cosmote*, the most popular subscription is *Cosmote Full Option 60* (5,95 euro per month, with 60 national minutes included). The same period last year, the clients preferred *Cosmote 30* (5 euro per month, 30 national minutes included).

#### **Orange vs. Vodafone**

Within the effort to adapt their services to the needs of different market segments, the mobile telephony companies put into place a great number of subscriptions that stop any comparison between the providers. These subscriptions can be international, Europeans and national. Their price varies depending on the number of minutes or hours included in the package. The minutes outside the package and the call towards other operators are more expensive. Some subscriptions permit an unlimited consumption during pick hours. The family subscriptions allow the parents and children to use their mobile telecommunication package on many telephones on the condition that the total amount of communication doesn't exceed the monthly subscription. Another alternative is the prepaid subscription which gives the possibility to the consumer to buy a telephone and communication credit when necessary. The communication duration can be calculated from the first second and the written messages can be included in the package (Table no. 1, Table no. 2)

**Table 1 - Example of a subscription package with shared minutes from Orange**

Subscription type	Monthly subscription (Euro) without added value	Call type	Tariff/ minut without added value (Euro)	Shared minutes
Shared national minutes	14	Orange + fixed networks	0,10	60 national minutes
		Other mobile networks	0,13	
	23	Orange + fixed networks	0,09	120 national minutes
		Other mobile networks	0,13	
	31	Orange + fixed networks	0,08	180 national minutes
		Other mobile networks	0,13	
	45	Orange + fixed networks	0,07	300 national minutes
		Other mobile networks	0,12	
	70	Orange + fixed networks	0,07	600 national minutes
		Other mobile networks	0,12	
100	Orange + fixed networks	0,07	1000 national minutes	
	Other mobile networks	0,11		

(www.orange.ro)

**Table 2 – Vodafone’s shared minutes’ subscription package**

Subscription type	Monthly subscription (Euro) without added value	Call type	Tariff/min without added value (Euro)	Shared minutes
Shared national minutes	7,5	Vodafone + fixed networks	0,14	50 national minutes
		Other mobile networks	0,19	
	11	Vodafone + fixed networks	0,13	75 national minutes
		Other mobile networks	0,18	
	13	Vodafone + fixed networks	0,12	100 national minutes
		Other mobile networks	0,17	
	18	Vodafone + fixed networks	0,11	150 national minutes
		Other mobile networks	0,16	
	23	Vodafone + fixed networks	0,11	200 national minutes
		Other mobile networks	0,16	
	43	Vodafone + fixed networks	0,11	400 national minutes
		Other mobile networks	0,16	
	67	Vodafone + fixed networks	0,10	700 national minutes
		Other mobile networks	0,15	
	93	Vodafone + fixed networks	0,10	1000 national minutes
		Other mobile networks	0,15	

(www.vodafone.ro)

Analyzing the two tables of mobile telecommunication services from Orange and Vodafone for the same subscription type (1 000 national minutes), we find it difficult to compare the tariffs. However, we can make some comments:

- The monthly subscription for the Orange provider is 100 euro without added value, whereas one has to pay 93 euro / month without added value for the same facility.
- Whereas the monthly subscription is higher within the Orange offer compared with the same type of subscription at Vodafone, the tariffs for the calls exceeding the 1 000 national minutes included into the package are cheaper for the Orange provider, i.g. 0,07 euro (in Orange and fixed networks) and 0,11 euro (in other mobile networks) than for Vodafone - 0,10 euro (in Vodafone and fixed networks) and 0,15 euro (in other networks).
- Thus, a client that has to choose between the two subscriptions, he will choose the one that better fits his needs. If he thinks that he will not exceed the 1 000 national minutes included into the subscription package, he will choose the cheaper subscription from Vodafone. If he will exceed the 1 000 national minutes and the next level of subscription with 2 000 national minutes is too much for him, he will choose the Orange provider.
- There are some clients that don't pay attention to the small difference of price and choose the mobile telecommunication provider that he feels attached to.

According to an analysis of Romania's ANRCTI (The Information Technology and Communication Settlement National Authority) the national mobile telephony users have no idea of their subscription payment composition, because of the complicated offers and tariffs.

A mobile telecommunication operator – Orange commercializes voice services for prepaid cards using seven tariff plans, each one having between four and six tariffs for national calls. For the subscriptions, the same provider offers national voice services within 26 tariff plans, and for almost every one of these plans having no more than one to four combinations of 12 extra options that can be associated to them. However, many of the extra options are commercialized at different prices, depending on the subscription value, others are linked into scale combinations, while within every one of the 26 tariff plans there are at least two different tariffs for national calls. Taking into consideration the fact that Orange Romania has the biggest market share, with a turnover of 1 234 million euro in 2007, either its clients are not disturbed by the large variety of offers, or the price is not the most important element for them.

According to a representative of France Telecom Group, the clients from Romania are the most informed and pay attention to costs. This type of offer was especially created for the clients' flexibility. From the sales, it was revealed the fact that this approach was successful, compared to the period with a limited number of subscriptions for the Orange clients.

### **Conclusion**

In conclusion, the enterprises that always respond to the competition can come across the risk to fix lower prices eventhough this is not really necessary. The responsible persons don't have to fall into the trap of systematically comparing and aligning the price to the competition. They have to take into consideration the costs of every offer for the client, including financial, non monetary and changing costs. It is also advisable to evaluate the impact of the distribution factors, time and location and predict the available production capacity of the concurrence.

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