

**CONSULTATION ON THE PROVISION OF MOBILE VIRTUAL NETWORKS
ON THE NATIONAL ELECTRONIC COMMUNICATIONS MARKET**

– QUESTIONNAIRE –

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Goal of the document

The questionnaire is intended at receiving opinions and comments regarding the provision of mobile virtual networks on the mobile communications market, and the conditions related to the presence of mobile virtual network operators (MVNO) on the national mobile communications market. The views and recommendations under this consultation document are summarized from a significant number of European and international documents and reports which tackled MVNO-related issues.

Within the 15th Report of the European Commission¹, which presents the developments in the electronic communications markets of the Member States, is shown that there are no mobile virtual network operators in Romania and that, in 2009, the combined market share of the first two mobile network operators was 73.3%, while the next two mobile network operators appear to have increased their market shares. Only two EU Member States (Romania, Czech Republic) do not have mobile virtual network operators (MVNO) on their national mobile communications market².

Over time, there were providers of electronic communications services that have raised the issue of mobile network access in the responses to the questionnaires which ANCOM submitted for market analyses purposes, during the meetings with different providers, as well as within various requests and petitions submitted to ANCOM.

In order to identify the impact that MVNOs could have on competition, ANCOM has elaborated a first set of questions that are addressed to all interested persons. The questionnaire aims at clarifying the role of virtual mobile network operators, and at identifying the implications that the presence of this type of provider on the mobile communications market could have, one of the components pursued by the regulatory authority being the evolution of the entire mobile communications segment, as far as the competition is concerned.

In general terms, a virtual mobile network operator (MVNO) may be defined as a provider which does not hold a license for the use of radio frequencies, but provides electronic communications services, under its own brand, by using the network that belongs to a mobile network operator.

ANCOM enforces the national legislation applicable to the authorisation of the electronic communications networks and services, which transposed Directive 2002/20/EC of the European Parliament and of the Council of 7 March 2002 on the authorisation of electronic communications networks and services (Authorisation Directive), and guides itself upon the recommendations of the European Commission, consulting the mobile communications market players on the means of action as regards the MVNO presence on the Romanian market, under objectivity, transparency and non-discrimination conditions.

1. General framework for mobile communications market and the place of mobile virtual network operators

The mobile virtual network operator (MVNO) can be defined as an entity that provides electronic communications services, does not hold a licence for the use of radio frequencies or all of the required network infrastructure, and concludes agreements with the operators of mobile electronic

¹ **Progress Report on Single European Electronic Communication Market 2009 (15th Report)**, Section Mobile/Market Situation (http://ec.europa.eu/information_society/policy/ecomm/library/communications_reports/annualreports/15th/index_en.htm)

² *MVNO List –Telecom paper Directory- February 2011*

communications networks to buy, for instance, airtime at the wholesale level, in order to provide electronic communications services under its own brand.

Although the mobile virtual network operator does not hold an electronic communications radio access network, it is commercially independent from the mobile network operator, having control over the design and launching of its commercial offers, being fully responsible for the provision of mobile communications services to its customers, setting its own tariffs for these services.

What novelties do mobile virtual networks operators bring to the consumers?

The introduction of mobile virtual network operators is currently regarded in the reports of the European consulting firms as a progress towards strengthening the principles of competitive market and increasing the efficient use of the existing mobile communications infrastructure. Their capacity to enhance competition in the mobile communications market is reflected upon the level of retail prices and upon innovation, due to the offers of differentiated services; these two indicators are generally used as criteria in the assessment of the level of competition existing on an economic market.

Mobile communications services include a wide range of services such as: access to the mobile network (with the possibility to receive national and international voice calls and SMS messages), international roaming calls, voice mail, free calls, MMS, e-mail, Internet access etc.

Initially, mobile virtual network operators entered the market of electronic communications provided at mobile locations with voice and SMS services, whereas, at present, the so-called second generation focuses on Internet access services and mobile broadband, with added value.

The entry on the mobile communications market of the mobile virtual network operators (the first successful mobile operator, Virgin Mobile, was launched in Great Britain in 1999) had been regarded as a factor of dynamism to the benefit of the consumers, who are given the possibility to choose between several service solutions. Furthermore, the providers of this type succeed in conquering niche users, who have not been covered previously by the classical operators (e.g. the ethnic mobile virtual network operator that targets specific ethnic communities) and can also bring benefits to the network operators that sell wholesale services to mobile virtual network operators without having to look for new customers in the retail market.

In the recent years, the mobile communications sector has witnessed the emergence and development of mobile virtual network operators in several countries, either as a result of certain regulatory interventions or as a result of the natural development of the sector.

UK, USA and Australia are examples of countries where regulation was not necessary to facilitate the entry of mobile virtual network operators on the mobile electronic communications market, while other countries have used other mechanisms whereby they encouraged the negotiation in good faith of certain commercial contracts between mobile network operators and mobile virtual network operators.

The mobile communications sector, particularly the number of mobile telephony subscribers, had registered a significant increase both in Romania and in the rest of Europe. The ANCOM policy to encourage competition and investment in the sector, maintaining a neutral approach in terms of technology, significantly contributed to the success of mobile telecommunications. According to the statistical data report on the electronic communications market drawn up by ANCOM for the 1 July - 31 December 2010 period, as of 31 December 2010, in Romania there were 24.6 million "active"

mobile telephony users, (number of valid SIM cards), with a 115% penetration rate per 100 inhabitants ("active" SIM cards).

The presence of mobile virtual network operators on the market is currently valued by the European mobile communications industry as a factor of growth for mobile operators, which do not succeed in attracting certain categories of customers by means of their classical offer.

When certain competition problems appeared in the mobile communications sector, that is the existence of only two or three mobile network operators in a given state, the regulatory authorities considered that mobile virtual network operators were a viable solution in view of resolving these problems³. These regulatory authorities (from the Netherlands, Belgium, France) took into consideration, at certain moments of time (2004-2007), the capacity of a mobile virtual network operator to enhance competition in the mobile communications market, which could reflect on the level of retail prices, and to bring more innovation, by means of new differentiated services.

The mobile virtual network operators have become popular over the past five years. Today, there are about 400 planned or active mobile virtual network operators. The Netherlands (85), France (38), Denmark (15), Germany (71), UK (41), Finland (10), Norway (15), Poland (10), Latvia (4), Hong Kong, Australia and USA are countries with most active mobile virtual network operators⁴.

2. Definition of mobile virtual network operators (MVNO)

Regulatory authorities in the electronic communications field have adopted various definitions and diverse regulatory frameworks, which are related, in essence, to the extent to which mobile virtual network operators are depending on the facilities of the mobile operator.

There is an international consensus expressing that a mobile virtual network operator may not be allotted its own radio frequencies. The concept of mobile virtual network operator implemented at the international level involves buying *airtime* at the wholesale level from a mobile network operator and its use for the provision of services to its own customers.

At a national level, in accordance with the provisions of art.2(1) letter l) of the Decision of the President of the National Regulatory Authority for Communications and Information Technology no.2895/2007 concerning the National Numbering Plan, with the subsequent amendments, a mobile virtual network operator – MVNO is a provider of electronic communications services which does not hold a licence for the use of radio frequencies, but provides services by using certain elements of other mobile public networks, based on agreements concluded with the operators of such networks.

The mobile network operator holds radio frequencies and the all the required infrastructure for using an independent mobile network.

Mobile virtual network operators can provide services by making use of any of the mobile network technologies implemented by the mobile network operators: GSM (2G), UMTS (3G) and CDMA (IS-95). In the future, further to certain amendments to the European and national framework - LTE-4G or LTE-Advanced.

Question 1.

³ **ARCEP** *MVNO Aspects économiques /la modélisation des couts, Étude pour ARCEP, 2005*

⁴ *MVNO List –Telecom paper Directory – February 2011*

**Do you agree with the definition given to mobile virtual network operators (MVNOs) in section 3 under the consultation document?
If you do not, please suggest an alternative definition, duly justified.**

3. Types of mobile virtual network operators

The place of mobile virtual network operators within the mobile communications operational value chain

At the international level, mobile virtual network operators have placed themselves, in time, within the mobile communications operational value chain, between the resellers of electronic communications services and the mobile network operators. The resellers of mobile services ensure the commercial interface between the network operators and the end-customers.

The essential difference between a mobile virtual network operator and a reseller of mobile services consists in the higher degree of "ownership" over the clients and the network infrastructure elements. Among others, based on the terms under the contract with the mobile network operator providing the traffic capacity, the mobile virtual network operator may establish tariffs, manage the invoicing and the account authentication, hold its own customer database and handle the customer care services, the distribution, the commercial brand and the marketing.

Regularly, a mobile virtual network operator holds and activates its own SIM cards and, in some cases, may be assigned numbering resources from the mobile network operators or from the regulatory authority for communications (see section 12 *Numbering allocation, Portability, Interconnection with other service providers, Roaming* under the present consultation document)⁵.

Various types of mobile virtual network operators

In general, a mobile virtual network operator (MVNO) is an entity commercially independent from the mobile network operator, and therefore is able to establish its own tariffs. The MVNO focuses on the markets on which it undertakes a marketing activity which allows for it to attract new clients or clients covered until then by traditional mobile operators or even by other mobile virtual network operators. There are thus several types of mobile virtual network operators.

So-called ethnic mobile virtual network operator

This type of provider aims at persons of specific nationality or origin, people living or working in border areas, or foreign tourists. Its characteristic is that it proposes aggressive tariffs for international calls. Thanks to this placing, the revenue per user obtained by this type of provider is higher than the average, due to billing mostly international calls.

Low-cost mobile virtual network operator

This type of provider enters the market with a more aggressive tariff offer, considering the reduced costs dedicated to attracting the customers and the lower operational costs as compared to those of a mobile network operator.

Various strategies enable this type of provider to achieve certain low-cost objectives: attract customers over low-cost communication channels (e.g. the web), dematerialize the administrative supports (invoicing, payment), use interactive platforms, maintain very low structural costs.

Branding operator

⁵ **ARCEP** Novembre 2008 : *Consultation publique sur les besoins futures en numéros mobiles et l'ouverture de la tranche 07 au service mobile*

This type of mobile virtual network operator targets a particular group of population, by making use of a known brand. In this category we find media (radio and TV) brands, large distribution chains, banks, public bodies such as the post etc. Offers of services with complementary added value may be proposed in order to attract the targeted population and improve the revenue per subscriber: music download, show results, SMS voting or promotional purchase vouchers.

Business mobile virtual network operator

This is a type of provider which targets enterprises and provides specific services to these entities: VPN charging, unified messaging, various applications (stock management, car fleet management, order takeover).

Fixed line operator

It holds fixed telephone lines and applies a strategy based on the fixed/mobile convergence, proposing to its customers a package of fixed/mobile services.

Sometimes, certain providers of classical fixed telephony hold also a mobile infrastructure and thus launch offers unified under the same brand, but this is not the case of a mobile virtual network operator, as it is the same provider, although it offers certain advantages to its customers who choose to subscribe to fixed and mobile telephony. This evolution, rather recent, spurs the so-called "quadruple play" offers, or the packages of services which include mobile Internet and more advanced functions (than SMS and MMS) of data services.

The same evolution is visible at the classical cable operators (TV retransmission services), which modernise their network in order to support Internet and fixed telephony and then increase the data amount at the fibre optic level, and which propose packages of services that include mobile communications.

4. Comparison between the providers of mobile services⁶

The table below displays a comparison between the business models of the reseller of services, of the mobile virtual network operator and of the mobile network operator.

(Source OFCOM 2009)⁷

| Network element | Reseller of services | Mobile virtual network operator | Mobile network operator |
|------------------------|---------------------------------|--|--|
| Spectrum/network | Does not hold | <ul style="list-style-type: none"> • May own certain network elements | <ul style="list-style-type: none"> • Holds licence for the use of radio frequencies and network/infrastructure |
| SIM card | Does not hold its own SIM cards | <ul style="list-style-type: none"> • Issues SIM cards and activates them in the network • May hold national numbering resources • Holds the right to transfer the customer database | <ul style="list-style-type: none"> • Offers for use its own SIM cards • Grants rights over the customer database |

⁶ ARCEP *Le Suivi des Indicateurs Mobiles 2009*

⁷ **OFCOM Statement** "Assessment of the UK mobile sector", 2009

| | | | |
|----------------------------------|---|---|--|
| Core Network | The sub-contracted billing platform | <ul style="list-style-type: none"> • Billing platform • Home Location Register (HLR) • Content hosting • Authentication | <ul style="list-style-type: none"> • "Owns" all the elements of the fixed networks and wireless networks, and the service platforms |
| Price establishment | % fee from the network operator | <ul style="list-style-type: none"> • Independent-free to impose the retail tariffs • Limited only by the wholesale prices negotiated with the mobile network Operator | <ul style="list-style-type: none"> • Establishes its prices independently |
| Branding (branding agreement) | <ul style="list-style-type: none"> • A certain independence, but the marketing is connected to the Mobile Network Operator | <ul style="list-style-type: none"> • Independent when it comes to choose any marketing segment out of its own initiative | <ul style="list-style-type: none"> • Entirely independent |
| Examples from UK | <ul style="list-style-type: none"> • | <ul style="list-style-type: none"> • Virgin Mobile • Tesco Mobile | <ul style="list-style-type: none"> • Orange • O2 |

Annex 2 under this consultation document displays, according to the *MVNO Database 2011*, a description of the types of mobile virtual network operators used in the international databases, which allow also for updating the list of information on the mobile virtual network operators active in different countries worldwide.⁸

5. Relation between mobile virtual network operators and mobile network operators

Typically, the mobile network operator does not interfere in the relation between a mobile virtual network operator and the end-user (for instance, the clients of Virgin Mobile in UK are not generally aware that their calls are conveyed via T-Mobile network). Thus, the mobile network operator may lose part of its commercial brand to the mobile virtual network and it often appears to be competing with the latter for customers.

The reasons for which mobile network operators carry commercial negotiations with the mobile virtual network operators are diverse. Two main reasons ground the decision of mobile network operators to host on their networks a mobile virtual network operator:

1. Often, mobile network operators are not well represented in all potential customer segments. Mobile virtual network operators may help the mobile network operators to conquer a niche market, with specific requirements, which a mobile network operator does not usually target.

⁸ *MVNO Database –Telecompaper MVNO List , February 2011*

2. Mobile network operators need to have occupied the traffic capacity; they need diversified products (services) and new market segments. A mobile virtual network operator's own strategy could allow for generating economies of scale, by using more efficiently an existing mobile communications network.

Network operators allowed, in general, the mobile virtual network operators to participate in the elaboration of strategies which target particular customer segments, lower customer migration rate due to marketing or participation in network investments.

On certain mobile communications markets is even possible that a mobile virtual network operator buys shares from a mobile network operator – for instance, in UK, Virgin Mobile bought 50% of O2, and Tesco, which is a strong supermarket chain in UK, made a joint venture 50:50 with O2.⁹

6. MVNO business model

The MVNO financial strategies have been mainly dictated by the cost structure. An MVNO may avoid many of the fixed costs of a mobile network, as well as the costs generated as a result of holding rights to use radio frequencies, the network infrastructure-related costs, and the costs incurred by the platforms for new services.

Two important advantages derive:

- Significantly lower levels of capital expenses;
- A potential shorter time frame for recovering the made investments as opposed to a network operator.

Nonetheless, because of the fact that an MVNO uses a large share of its revenues for fixed, wholesale, contractual expenses, to the mobile network operator, the MVNO operational margin is sensitively lower than that of a mobile network operator. There is thus a significant financial risk for the MVNO business model: the risk of low margins, if retail prices drop dramatically.

In the light of the features emphasised before, the MVNO business model is regarded as an efficient one when it comes to a late entry on the market.

7. Mobile communications operational value chain. MVNO models

Exhibit 1 displays the mobile communications operational value chain for the provision of mobile communications services, which forms the basis for the subsequent considerations.

The business model applied in different countries varies due to local conditions and regulation regime. Whereas certain operators hold their own Core network infrastructure, including herein Mobile Switching Center (MSC), Home Location Register (HLR), billing, customer care, platforms of value added services and intelligent network systems, other providers simply redo the service packages of other network operators and issue their own SIM cards, basing themselves almost entirely on the facilities with which is endowed the host network, with a minimum differentiation between products.

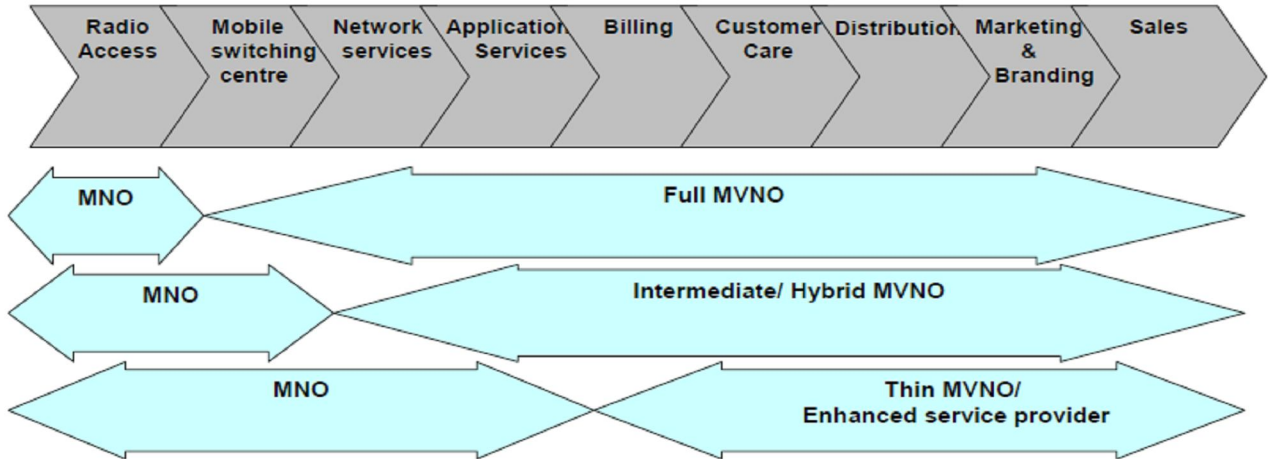
Based on the business model, we may divide the MVNOs into three types:

- a) **Full MVNO**, holding its own Core Network which includes the Mobile Switching Center (MSC);

⁹ **OFCOM** Communication Market Research, 2009

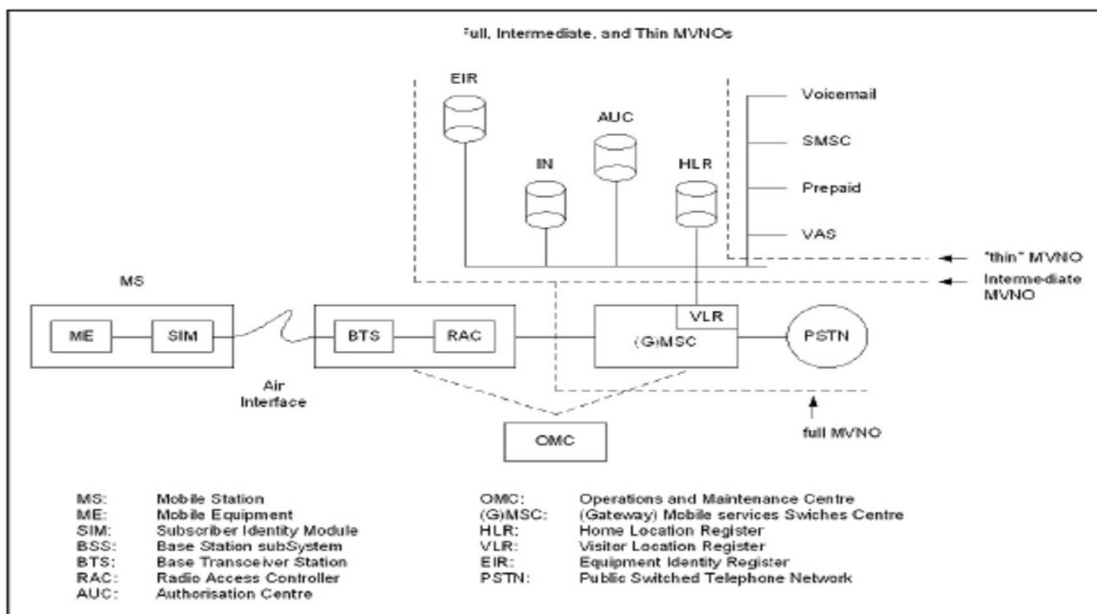
- b) **Intermediate** MVNO, which buys a switching service, but either ensures its own Home Location Register (HLR), or shares a jointly operated HLR with the mobile network operator;
- c) **Thin** MVNO, which may provide enhanced access and content services. A thin MVNO is also called an Enhanced Service Provider.

Exhibit 1: Mobile communications operational value chain. MVNO models



Source: Waters and Dodd Consultants (2008)

Exhibit 2: MVNO models



Source: Waters and Dodd Consultants (2008)

International practice shows that an MVNO should have the freedom to choose its own business model, based on its own understanding of the market.

The international mobile communications industry reached the general consensus that all types of MVNOs are possible: Full, Intermediate and Thin. However, given that an MVNO may not be allotted radio spectrum, it may neither install a Radio Access Network (RAN)/Base Station Subsystem (BSS).

The consultation proposes: MVNOs are free to choose their business model at the entry on the national mobile communications market. Nevertheless, an MVNO may not install its own Radio Access Network (RAN)/Base Station Subsystem (BSS).

Question 2.

Based on the findings related to the ascension of MVNO models in the European communications markets¹⁰, do you deem it is a suitable moment for MVNOs to enter the national electronic communications market?

Do you think that the launching of MVNOs requires a regulatory intervention or a strategic decision of MNOs to grant access to these providers within the purpose of extending the amount of existing operations and covering the market segments not-covered previously, upon negotiating with the MVNOs a contract that would cover all the technical and commercial aspects on mobile network access?

Do you believe that MVNOs face market entry barriers?

Please elaborate your comments, justifying them accordingly.

Question 3.

To what extent do you agree with the recommendation on allowing an MVNO to adopt any of the models permitted by the mobile communications operational value chain (Full, Intermediate, Thin)?

8. Regulatory framework

As regards the entry of MVNOs on a national mobile communications market, the international regulatory practice was diverse.

In the European Union, the regulatory framework for electronic communications permits the entry of MVNOs; nevertheless, there is no specific European legislation which would particularly treat MVNOs. Despite of a positive response on the entry of these providers, received from the mobile communications sector, the European Union did not deem necessary to regulate separately this electronic communications segment.

At the international level, the regulatory framework for MVNOs differs substantially: whereas Denmark, Ireland and France¹¹ adopted specific regulatory measures for MVNOs, which oblige the mobile network operators to conclude contracts with MVNOs, other states used mechanisms whereby they encouraged the negotiation in good faith of certain commercial contracts between MNOs and MVNOs. Thus, states such as USA, UK, Australia and New Zealand did not impose access obligations on the MVNOs, and their entry is deemed a natural progress of the mobile communications market.

International studies¹² consider that the availability of MNOs to voluntarily ensure MVNO access to their network depends on two aspects: (i) competition level and (ii) product differentiation level. As a

¹⁰ **Telecompaper MVNO-list** 02.2011 (e.g. ORANGE has relations with 11 MVNO in France, 8 MVNO in Spain, 9 MVNO in UK, 3 MVNO in Switzerland, 2 MVNO in Poland); (Vodafone has relations with 16 MVNO in Germany, 6 MVNO in Italy, 12 MVNO in France, 11 MVNO in the Netherlands; 13 MVNO in UK, 5 MVNO in Malta etc.)

¹¹ **ARCEP** Décision 2010-0043 Annexe1 Cahier de charges précisant les conditions d'utilisation des fréquences autorisées dans les bandes 900 MHz et 2,1 GHz ; 6.2 Relations avec les fournisseurs de services-MVNO

¹² **Analysis Mason** " Assessment of the UK mobile sector", Final report for OFCOM 28 August 2008

general comment, it is appreciated that the MNO will grant voluntarily access to its network if the services offered by the requesting MVNO are sufficiently differentiated, taking into account that a higher level of product differentiation would lead to revenues which would exceed the effects owed to competition.

The 15th Report of the European Commission on Single European Electronic Communication Market 2009¹³-*Staff working document, Section Mobile implementation* says: "The mobile access and call origination market is regulated only in three Member States. In Cyprus, the NRA reviewed the market and, finding that the incumbent still had SMP, the NRA maintained all remedies imposed in the first round analysis and introduced an obligation for MVNO access. In Spain, the mobile access market is the only market that the NRA has not yet reviewed. Following the access obligations imposed by the regulator on the three MNOs present in the market in 2006, several undertakings are currently providing mobile services in the market. In Slovenia, the Commission endorsed the NRA's plan to require Slovenia's largest mobile operator to continue to provide its competitors with access to its network at regulated prices."

In Romania, the analysis ANCOM conducted in view of identifying the relevant wholesale markets or in view of elaborating the Regulatory Strategy for 2007-2010 showed that the wholesale market for mobile access and call origination on mobile public telephone networks has the characteristics of a dynamic market, in continuous change, and therefore no operators with significant market power (SMP) have been identified on this market and no obligations on call origination on mobile telephone networks have been imposed.

The providers are free to negotiate the contractual terms of the agreement with the MNO, without any intervention from the regulatory authority. Such intervention may be considered only if there is insufficient competition in the mobile communications market.

A commercial negotiation may be possible on the short run (as the MNOs wish to improve their network usage level). On the long run, however, MNOs may increase the price barrier in order to remove MVNOs from the mobile communications market and obtain the revenues of MVNOs. Consequently, a solution could be the elaboration of some Guidelines on the conditions of access to the mobile network, which would be observed by both MNOs and MVNOs and which would ensure the success on the long run of any MVNO model.

An opinion supported by the interested parties in the mobile communications market is that, in keeping with the business model chosen by the MVNOs, based on the existence of network facilities, the conformity with the regulations applying to the MNO must be similarly applied to the MVNO as well. This may cover aspects such as Quality of Service (QoS) parameters, QoS parameters of billing, customer care, tariff establishment and relevant technical parameters based on the technical standards applicable to the mobile communications networks.

If an MVNO wishes to enter the market based on certain commercially negotiated terms, it will sign an agreement with the partner MNO. The agreement will clearly show the division of technical and commercial responsibilities between the MNO and the MVNO.

The consultation proposes: considering the international practice in the mobile communications market and based on the EU recommendations on best practices relative to the authorisation of networks and services, the commercial model which covers the nature of relations between the

¹³ COM (2010) 253 Raport de activitate privind piața unică europeană a Comunicațiilor Electronice (2009) (al 15-lea Raport)

parties, including the agreement between the MNO and the MVNOs, remain at the latitude of the market forces.

Question 4.

(I) Please comment on the regulatory framework applicable to MVNOs, in the context of the Romanian mobile communications market.

(II) What kind of requirements should MNOs observe in order to enable MVNOs to effectively and efficiently operate on the national mobile communications market?

Please elaborate your comments, justifying them accordingly.

9. Regulatory issues. MVNO authorisation

In accordance with the provisions of art.4(1) of the Government Emergency Ordinance no.79/2002 on the general regulatory framework for communications, approved, with amendments and completions, by Law no.591/2002, with the subsequent amendments and completions, the provision of electronic communications networks and services is free and compliant with the terms of the general authorisation regime.

Hence, the activities the MVNO carries out need to observe the provisions of the primary legal framework, mentioned before, and those of the ANCOM President's Decision no.338/2010 on the general authorisation regime for the provision of electronic communications networks and services.

In order to protect the consumers' interests, it is essential that the MVNO complies with certain terms and conditions related to the service provision, alongside the requirements under the general authorisation regime which need to be observed by a provider of electronic communications services, including the requirements on the security of the electronic communications services, communications interception, treatment of 112 emergency calls and other national security issues.

The general authorisation regime is open to all participants in the electronic communications market, and ensures equal competitive conditions for different actors in the mobile communications operational value chain.

The range or types of MVNOs as described in section 3 under the consultation document is very large: from the simplest form – Thin MVNO to the most complex – Full MVNO, which represents the equivalent of an MNO for a specified service area and with the sole exception which concerns the radio frequency spectrum which is not allotted to MVNOs.

Part of the MVNO problems could be approached based on the terms and requirements under the MNO existing licences for the use of radio frequencies.

Authorised service area:

An MVNO may offer services anywhere throughout the licensed service area of the partner MNO, as specified in the contract between them. Practice shows that, in general, an MVNO does not provide electronic communications service throughout the entire service area of the partner MNO.

Validity period and conditions governing the cessation of the provision of electronic communications services by an MVNO:

The validity period of the licence for the use of radio frequencies held by an MNO is the key element around which the MNO may consider the provision of electronic communications services to the end-

users. In other words, the commercial contract between the MVNO and the MNO must be circumscribed to the validity period of the licence for the use of radio frequencies granted to the MNO. As well, if - for certain reasons - the licence for the use of radio frequencies held by the MNO ceases before the expiry term, then the MVNO will have to identify other solutions in order to keep providing electronic communications services to the end-users.

Question 5.

Please comment on the recommendation regarding the service area of the MVNOs, and on the relation between the validity period of the licence for the use of radio frequencies granted to the MNO and the period during which the MVNO may provide electronic communications services to the end-users.

10.The number of mobile virtual network operators attached to a mobile operator

Most of the analyses and reports on mobile virtual network operators¹⁴ support the opinion according to which there should be no restrictions as to the number of mobile virtual network operators attached to a partner mobile operator. It is expected that, by maintaining the principle of no restrictions as regards the number of providers on a mobile network, the environment will become more competitive thanks to the increased market dynamics, an increase which would be triggered upon a large number of MVNOs would enter the market, survive on it and finally develop. The same market dynamics generate acquisitions and consolidations among them.

International experience shows that an MNO is able to support several MVNOs, and, in Europe, there are MNOs that have concluded partnerships with more than 10 MVNOs (e.g. as of 02.02.2011, Orange-France had 11 MVNOs, E-Plus Germany - 19, KPN-the Netherlands - 45, TeliaSonera-Sweden - 10)¹⁵. As shown in the previous sections of the consultation document, MVNOs can focus on a particular segment of customers, in a specific area. The spectrum held by an MNO, the MNO network capacity, as well as the operational and financial capacities could nonetheless limit the number of MVNOs which can be attached to an MNO.

Question 6.

**Do you consider that the number of MVNOs attached to a mobile operator should be restricted?
Please elaborate your comment with the appropriate arguments.**

11.Specific activities of a mobile virtual network operator

Because an MVNO is a service provider, some of the MNO services can be transferred to the MVNO. The services will be different, depending on the nature of the network infrastructure deployed by the MVNO.

The specific activities of an MNO include: billing, customer care, requirements regarding the national security (communications legal interception), quality of service, access to emergency services, subscriber verification, directory enquiry services, number portability, control of the unsolicited commercial communications, charging etc.

¹⁴ *MVNO Directory 2009*

¹⁵ *Telecompaper Mobile MVNO List 02.02.2011*

Irrespective of the MVNO type, there are three types of basic activities which the MVNO generally fulfils:

- Attract customers (verifying the subscribers)
- Manage the customer relations (customer care, billing, pricing, unsolicited commercial communications)
- Provide the service

As we pass from a Thin MVNO to a Full MVNO, the number of specific activities will increase, but, generally, the evolution of an MVNO depends on the chosen functional model and on the nature of the deployed infrastructure.

Practice has shown that the MNO specific activities such as charging, billing, customer care, quality of service, national security requirements (communications interception), implementation and compliance with regulations or the reporting of statistical data to the regulatory authority may be transferred to the MVNO.

As MVNO services depend on the chosen model, at the minimum level, the services to be ensured will be customer care, including resolution of complaints, charging and billing, whereas, at the maximum level, the specific activities will be the same as those of an MNO, except for the obligations to deploy a mobile access network.

The MVNO will be directly responsible for:

- Attracting customers, managing the customer relations and resolving the complaints
- Achieving the quality of service parameters, established by the relevant standards
- Complying with the billing and measurement requirements described by the standards, as well as complying with the statistical reporting requirements.

Question 7.

In your opinion, what should be the specific activities of the three MVNO models?

Please enlist the activities together with the appropriate justification.

12. Numbering allocation, Number Portability, Interconnection with other service providers, Roaming

MVNO provide electronic communications services in compliance with the general authorisation regime and under a commercial agreement/contract concluded with the MNO, which includes provisions regarding the cancellation of such agreements. In this context, the allotment of numbering resources and the number portability issue are very important.

In practice, when MVNOs first appeared, the numbering resources were being assigned to them by the MNO, from the blocks of numbers allotted by the regulatory authority, but currently there are some MVNOs which have been allotted with their own range of numbers.

For instance, in UK¹⁶, where the mobile services market is considered as being mature, two of the most significant MVNOs existing on the mobile communications market were allotted their own range of numbering resources by the regulator, OFCOM. Nevertheless, they did not receive routing numbers for portability. In France, after consulting the mobile operators, ARCEP reserved a series of additional

¹⁶ OFCOM Communication Market Report 2009 ; Section 3 Telecom

numbering resources from the range which begins with 07, for future needs, especially for new services, in order to preserve the separation between the services provided at fixed locations and those provided at mobile locations, or in case of terminating the numbering resources in the 06 domain¹⁷. ARCEP allotted these numbering resources both to MNOs and MVNOs. The analysis of the numbering plan for 2009 in France shows that the numbers in the 07 range are allotted to the three mobile operators (72 million numbers) and to 6 MVNOs (5.1 million numbers). Prefixes for mobile portability and resources for international roaming have been allotted exclusively to mobile operators.

The introduction of number portability also impacts on the policy of allotment of numbering resources to MVNOs. If these providers become separate entities for the allotment of numbering resources, the number of operators that will interact with the centralised database for number portability will increase significantly. This may lead to a greater complexity of the system which ensures number portability. The above-mentioned factors lead to the conclusion that it is better for MVNOs to use the numbering resources allotted to the partner MNOs, and, in this case, the partner MNO holds the responsibility for porting the number.

An MVNO negotiates and signs an agreement with an MNO for the conveyance of calls originated by its subscribers and for their call termination. International practice has shown that it is better for MVNOs to operate based on interconnection and roaming agreements concluded with the partner MNO. If an MVNO is not to be allowed to conclude interconnection and roaming agreements with other operators, it will have to use the interconnection and roaming agreements of the partner MNO.

A first alternative ANCOM identified upon the analysis of the European practice on MVNOs: the allotment of numbering resources, number portability, interconnection with other service providers and international roaming could be ensured by the partner MNO; as for the allotment of new blocks of numbers to the MNOs, the MVNO subscribers will be taken into consideration when establishing the needs for the allotment of new blocks of numbers.

In Romania, in accordance with the ANRCTI President's Decision no.2895/2007, the MVNOs may request the allotment of specific numbering resources, namely non-geographic numbers in the OZA = 070 sub-domain of the National Numbering Plan (NNP). The OZA = 070 sub-domain is part of the domain corresponding to electronic communications services provided at mobile locations. According to art.5(1) letter e) of the ANRCTI President Decision no.2896/2007 on the procedure of requesting and granting licences for the use of numbering resources, with the subsequent amendments and completions, in view of allotment of numbering resources, in addition to the general requirements, applicable to any request of numbering resources, the MVNO must provide the proof of starting relevant negotiations with a provider of mobile public networks related to the provision of access to the latter's network.

The OZA = 070 sub-domain contains 10 million numbers, with blocks of 100,000 non-geographic numbers intended for MVNOs. The technical plan does not however provide the resources required for the operation of MVNOs: prefixes for mobile number portability and resources for international roaming.

To conclude, the existence of the OZA = 070 sub-domain, with numbering resources dedicated to MVNOs, represents another alternative: the MVNO benefits from its own numbering resources, so that it can separate more clearly its services from those of the MNO. However, the number portability requirements, the interconnection with other service providers and the international roaming should

¹⁷ ARCEP Décision 2009-0406 relative à l'ouverture de la tranche de numéros commençant par 07 ; Sous-plan en métropole

be ensured by the MVNO upon its entry on the communications market. By the date of this consultation, ANCOM has not allotted numbers in the 070 sub-domain.

Question 8.

ANCOM submits to consultation the two alternatives regarding the allotment of numbering resources for the MVNOs, summarized from the analysis of the European practice and from the NNP provisions:

a) the partner MNO should ensure to the MVNOs the allotment of numbering resources, the number portability, the interconnection with other service providers and the roaming service.

b) MVNOs should be allotted blocks of numbers from the available numbering ranges (070 XXXXXX), while the MVNO ensures the requirements related to number portability, the interconnection with other providers and the international roaming.

Please comment on these two alternatives bringing the appropriate arguments.

13. Termination/suspension of the agreement between the MVNO and the MNO, and users' protection

The analysis of the obstacles hindering the development of MVNOs on the mobile communications market showed that, in many cases, the hosting conditions offered by the network operator are restrictive, thus limiting the possibilities of evolution of MVNOs.

The problems related to the operation of an MVNO on the network of the MNO, and the MNO connectivity requirements in order to ensure the MVNO traffic may envisage: the initial interconnection, the growth of the interconnection traffic, the tariffs on ports, the call termination, the on-net/off-net calls. These issues could be approached based on the relevant regulations and on the licence requirements.

As well, a dispute could arise between the MNO and the MVNO during the operation period. In such a situation, the users covered by the MVNO need to be protected. The agreement between the MVNO and the partner MNO will have to include provisions regarding the protection of the end-users' interests. Customers must not be affected by the occurrence of a dispute between the MVNO and the partner MNO.

Should the agreement between the MVNO and the partner MNO cease, the customers will be notified in due time. Customers wishing to be ported to another MVNO or MNO will be given the possibility to do so.

The analyses conducted on the cessation of the commercial agreement show that, if a MVNO treats customers directly and independently, the MNO may not be forced to take over the customers of the MVNO with the observance of the terms and conditions granted by the MVNO.

Question 9.

Which do you believe is the best way to protect the users as regards the continuity of service and the application of the tariff plan:

(I) If a dispute arises between the MVNO and the partner MNO,

(II) If the MVNO ceases the provision of services.

14. Merger

Possible situations are represented by the merger of two MVNOs in the same service area, and by the merger of an MVNO with an MNO in the same service area.

A takeover or merger of an MVNO by another company may take place, under certain conditions, upon the prior consultation of the partner MNO, and it is necessary to ensure that competition is not influenced negatively.¹⁸ The Competition Council generally decides on the competition issues generated by the merger of two MVNOs, and on the competition issues which may be forecasted should new providers appear following the merger between companies which hold a strong brand, or between national distribution networks and an MNO.

The merger of an MVNO with the partner MNO or with another MVNO, partner of the same MNO, needs to be analysed, if such is the case, in accordance with the legal provisions in force. The competition problems which may be generated by the merger of two MVNOs or by the takeover of an MVNO by another entity may be submitted to the analysis of the Competition Council.

Question 10.

**Which would be the specific streamlines for the merger and takeover of MVNOs?
Please elaborate your comments, justifying them accordingly.**

15. Quality of service

In general, an MVNO is responsible for attracting customers, billing and managing relations with them. The services are offered by means of an agreement signed with the partner MNO. Nonetheless, as regards the subscribers, the MVNO is the provider which offers the services under its own brand and thus is liable for ensuring the Quality of Service (QoS) for its subscribers. In order to achieve these QoS objectives, the MVNO needs to have certain SLA-*Service Level Agreements* with the partner MNO.

ANCOM deems that the MVNO will further hold the liability for the Quality of Service for customers. Regulations adopted by ANCOM in the field of ensuring the Quality of Service (QoS) and the recommended European standards will apply to the MNOs and to the MVNOs.

16. Tariffs

The packages of low-cost and diversified services are key factors which ensure the success of the MVNOs in most countries. Charging is the key application an MVNO relies on in order to develop its business plan. The partner MNO which sells airtime, on the wholesale level, in order to be used by the MVNO does not intervene in establishing the retail tariffs offered by the MVNO to its subscribers, except for via the wholesale tariffs it offers to the MVNO: access/call origination tariffs, call termination tariffs, roaming tariffs.

¹⁸ See *Communiqués de L'Autorité de la concurrence française de 28 janvier 2011 ; L'Autorité de la concurrence autorise la création par La Poste et SFR, d'une entreprise commune active sur le marché de détail de la téléphonie mobile en France.*

The consultation recommends:

The MVNO will be directly responsible for establishing the tariffs corresponding to the services offered to its subscribers.

Question 11.

Other relevant issues you wish to submit to analysis, or other comments in the context of the preliminary consultation regarding the conditions of existence of MVNOs on the national mobile communications market.

ANCOM invites all interested persons to transmit the answers to the questions under this questionnaire, by 06 August 2011, at the latest. Answers may be transmitted by post, at the ANCOM headquarters in 2 Delea Nouă Street, sector 3, Bucharest, Romania, submitted at the ANCOM Registry Office, sent via e-mail at consultare@ancom.org.ro or by fax at +40.372.845.402.

RESPONDENT'S IDENTIFICATION DATA

Company.....
Name *First name*
Position
.....
E-mail.....*Telephone*
Postal address.....

Annex 1 Summary of questions addressed to the electronic communications sector within the procedure of Consultation on the provision of mobile virtual networks on the national electronic communications market.

Annex 2 In order to better understand the MVNO value chain, Annex 2 describes the **Types of Mobile Network Operators and MVNOs.**

Summary of questions addressed to the electronic communications sector within the procedure of Consultation on the provision of mobile virtual networks on the national electronic communications market

Question 1.

Do you agree with the definition given to mobile virtual network operators (MVNOs) in section 3 under the consultation document?

If you do not, please suggest an alternative definition, duly justified.

Question 2.

Based on the findings related to the ascension of MVNO models in the European communications markets¹⁹, do you deem it is a suitable moment for MVNOs to enter the national electronic communications market?

Do you think that the launching of MVNOs requires a regulatory intervention or a strategic decision of MNOs to grant access to these providers within the purpose of extending the amount of existing operations and covering the market segments not-covered previously, upon negotiating with the MVNOs a contract that would cover all the technical and commercial aspects on mobile network access?

Do you believe that MVNOs face market entry barriers?

Please elaborate your comments, justifying them accordingly.

Question 3.

To what extent do you agree with the recommendation on allowing an MVNO to adopt any of the models permitted by the mobile communications operational value chain (Full, Intermediate, Thin)?

Question 4.

(I) Please comment on the regulatory framework applicable to MVNOs, in the context of the Romanian mobile communications market.

(II) What kind of requirements should MNOs observe in order to enable MVNOs to effectively and efficiently operate on the national mobile communications market?

Please elaborate your comments, justifying them accordingly.

Question 5.

Please comment on the recommendation regarding the service area of the MVNOs, and on the relation between the validity period of the licence for the use of radio frequencies

¹⁹ *Telecompaper MVNO-list 02.2011* (e.g. ORANGE has relations with 11 MVNO in France, 8 MVNO in Spain, 9 MVNO in UK, 3 MVNO in Switzerland, 2 MVNO in Poland); (Vodafone has relations with 16 MVNO in Germany, 6 MVNO in Italy, 12 MVNO in France, 11 MVNO in the Netherlands; 13 MVNO in UK, 5 MVNO in Malta etc.)

granted to the MNO and the period during which the MVNO may provide electronic communications services to the end-users.

Question 6.

Do you consider that the number of MVNOs attached to a mobile operator should be restricted?

Please elaborate your comment with the appropriate arguments.

Question 7.

In your opinion, what should be the specific activities of the three MVNO models?

Please enlist the activities together with the appropriate justification.

Question 8.

ANCOM submits to consultation the two alternatives regarding the allotment of numbering resources for the MVNOs, summarized from the analysis of the European practice and from the NNP provisions:

a) the partner MNO should ensure to the MVNOs the allotment of numbering resources, the number portability, the interconnection with other service providers and the roaming service.

b) MVNOs should be allotted blocks of numbers from the available numbering ranges (070 XXXXXXX), while the MVNO ensures the requirements related to number portability, the interconnection with other providers and the international roaming.

Please comment on these two alternatives bringing the appropriate arguments.

Question 9.

Which do you believe is the best way to protect the users as regards the continuity of service and the application of the tariff plan:

(I) If a dispute arises between the MVNO and the partner MNO,

(II) If the MVNO ceases the provision of services.

Question 10.

Which would be the specific streamlines for the merger and takeover of MVNOs?

Please elaborate your comments, justifying them accordingly.

Question 11.

Other relevant issues you wish to submit to analysis, or other comments in the context of the preliminary consultation regarding the conditions of existence of MVNOs on the national mobile communications market.

Types of Mobile Network Operators and MVNOs²⁰

Mobile Network Operator (MNO)

A traditional mobile network operator which holds a licence for the use of radio frequencies, its own mobile infrastructure and a direct relation with the end-customers. A mobile network operator may handle network routing and usually has roaming agreements with mobile network operators from abroad. A mobile network operator can produce and distribute on the wholesale level, for instance, voice minutes, SMS and MMS messages and data traffic. The mobile network operator may handle customer service, invoicing, may collect consumption data and handle the sale of mobile terminals. A mobile network operator handles the marketing and coordinates the sales to the end-users.

Mobile Network Enabler (MNE)

An MNE is characterised by having its own mobile infrastructure, but - unlike the MNO - the MNE has no direct customer relationship with the end-user. It is therefore only an MNO that can establish itself as an MNE. The MNE is capable of handling Network Routing and will typically have roaming deals with foreign MNOs. The MNE is able to produce and distribute, for example, voice minutes, SMS and MMS messages and data traffic. The MNE will typically be able to handle customer relationship, customer billing and collection of consumption data and mobile handset management. The MNE will not handle marketing and sales to end-users, as this is a task for the MNE's wholesale customers. The MNE handles the technical side of the business and often also handles areas like customer service and legal assistance for mobile providers which do not have their own network.

Mobile Virtual Network Enabler (MVNE)

MVNEs are characterised by neither having a licence for the use of radio frequencies nor mobile infrastructure or any direct customer relationship with the end-users. The MVNE is capable of handling Network Routing and has typically entered into roaming deals with foreign MNOs. The MVNE is not capable of producing and distributing, for example, voice minutes and data traffic, but the MVNE will typically be able to handle producing SMS and MMS messages. A typical MVNE will handle customer service, customer billing, collection of consumption data and mobile handset management. Additionally, the MVNE will not handle marketing and sales to end-users, as this is a task for the MVNE's wholesale customers. The MVNE functions as a middleman between the MNO and the mobile providers without their own networks. The MVNE handles the technical side and often also tasks like customer service and legal assistance for mobile providers without their own network.

Mobile Virtual Network Operator (MVNO)

A mobile virtual network operator is characterised by neither having its own licence for the use of radio frequencies nor its own radio access network infrastructure, but provides electronic communications

²⁰ A) MCA-Malta Communications Authority " *Regulatory Guidelines for MVNO, Enhanced SP, SP and MVNE*", April 2008
B) *MVNO Database, 2010*

services, under its own brand, by using elements of other mobile public networks. The mobile virtual network operator is able to handle Network Routing and usually does not have roaming agreements with foreign mobile network operators. A mobile virtual network operator is not able to produce and distribute voice minutes and data traffic, but may handle the production of SMS and MMS. As well, usually, a mobile virtual network operator may handle customer service, billing and collection of consumption data and handset management. In addition, a mobile virtual network operator will handle usually itself the marketing and sales to end-users.

Service Provider (SP)

A service provider has neither a licence for the use of radio frequencies nor its own mobile infrastructure, but has direct customer relationship with the end-user. An SP is not able to handle Network Routing itself and will not enter into roaming deals with foreign MNOs. The SP is not able to distribute, for example, voice minutes or data traffic, and cannot produce SMS or MMS messages. The SP will typically handle customer relationship, customer billing, and handset management. Additionally, the SP will typically handle its own marketing and sales to end-users.

Branded Reseller (BR)

A BR has neither a licence for the use of radio frequencies nor own mobile infrastructure, but has direct customer relationship with the end-users. The BR cannot handle Network Routing and will not enter into roaming deals with foreign MNOs. The BR cannot produce and distribute, for example, voice minutes and data traffic itself and is not able to produce SMS or MMS messages. A typical BR will not handle customer service, customer billing or collection of consumption data and handset management itself. The BR will primarily focus its activities around marketing and sales to end-users. The BRs' positive contribution to the value chain is (naturally) their "brand", but their distribution power will also be a central asset for other Branded Resellers.