

# **ERG Report**

## **Mobile access and competition effects**

**Disclaimer:** this document is a report. It does not constitute a policy statement of individual NRAs or of the ERG. The data set is updated at April 2006. Market conditions and regulation might have changed in the meantime

**Notice:** parts of this document have been omitted (see explicit reference in the text) before disclosure in application of Article 4, paragraph 2 and 6 of Regulation (EC) No 1049/2001 of the European Parliament and of the Council of 30 May 2001, regarding public access to European Parliament, Council and Commission documents

1 Introduction.....	3
2 The previous (ONP) regulatory framework .....	3
2.1 Countries which had designated MNOs as having SMP in the mobile market.....	3
2.2 Countries that had access regulation.....	4
2.3 Carrier selection .....	6
3 The new regulatory framework (Market 15).....	6
3.1 Countries which have notified analysis of market 15.....	6
3.1.1 SMP designations in market 15.....	7
3.1.2 Countries with no SMP in market 15.....	9
3.2 Countries still investigating market 15.....	12
3.3 Carrier selection.....	18
3.4 Mobile access and its effect on competition in the mobile markets.....	18
3.4.1 MVNO.....	18
3.4.2 Service providers (SP).....	19
3.4.3 National roaming.....	21
3.5 National Competition Authority Cases that may have resulted or may result in a setting of access obligations to MNOs.....	21
4 Preliminary Conclusions.....	21
5 Annex 1.....	23
Annex 2.....	24

# 1 Introduction

Following the ERG/IRG's Work programme for 2006 the Mobile Market Working Group (MM WG) has been assigned the task of preparing a report on mobile access and competition effects. This report of the MM WG provides an overview of access regulation under both the old and the new regulatory framework. It gives the status and a brief summary of any findings and conclusions of the analysis of market 15 in the different countries. Furthermore, this report gives an overview of the countries which have Service Providers (SPs) or MVNOs (Mobile Virtual Network Operators) operating in their mobile markets, and a subjective view by the NRAs whether the introduction of SPs and/or MVNOs in the mobile markets has had an effect on competition.

Only mobile access in the form of national roaming (NR), SP access and MVNO access are discussed in this report (for definitions of SP and MVNO see Annex 2). Furthermore, only independent service providers (not "tied service providers" - MNOs selling under a different brand name) are considered relevant for this report.

The report further touches upon the issue of carrier selection /pre selection, and finally it gives a short summary of National Competition Authority cases that may have resulted or may result in a setting of access obligations to MNOs.

This report contains information from in total 28 countries.

## 2 The previous (ONP) regulatory framework

### 2.1 Countries which had designated MNOs as having SMP in the mobile market

Country	Year of SMP	SMP operators
Austria	1999	T-Mobile and Mobilkom
Belgium	1999	Proximus (Belgacom Mobile) (1999) and Mobistar (2002)
Bulgaria	2004	Mobiltel AD
Cyprus	2003	CyTA
Czech Republic	2001	T-Mobile and Eurotel Praha
Denmark	2000	TDC and Sonofon
Estonia	2002	EMT
France	1999	Orange France and SFR (retail mobile market)
Greece	2003	Vodafone, Cosmote and TIM

Hungary	2002	T-Mobile (Westel) and Pannon
Iceland	2001	Iceland Telecom (2001) and Og Vodafone (2003)
Ireland	1998	Vodafone Ireland (1998) and O2 Ireland (1999)
Italy	1999	TIM Italia and Vodafone
Lithuania	2003	Defined as SMP 2 out of 3 operators – Bite Lietuva, Omnitel. The decisions were withdrawn by court. No obligations were applied.
Malta	2001	Vodafone (2001) and Go Mobile (2003)
The Netherlands	1999	KPN Mobile
Norway	1998	NetCom and Telenor
Poland	2002	Polkomtel, PTK Centertel, Polska Telefonia Cyfrowa,,
Portugal	2000	TMN and Vodafone
Slovak Republic	2002	Orange Slovensko and T-Mobile Slovensko
Spain	2000	TME, Vodafone
Sweden	2002	TeliaSonera (2002) and Tele2 (2003)
Turkey	2003	Turkcell and Telsim

The above table gives an overview of the countries which had designated MNOs as having SMP in the mobile market under the old regulatory framework of 1998 (ONP Framework). The table gives further the year of the SMP designation as well as the name(s) of the operator(s) assessed to have SMP.

23 out of 28 countries had designated mobile network operators (MNO) with SMP under the old regulatory framework. The majority of the countries had designated more than one MNO as having SMP in the mobile market. Less than a third (7) of the designations came before the year 2000.

5 countries (Finland, Germany, Latvia, Romania and Switzerland) did not have MNO(s) with SMP under the old regulatory framework. Lithuania designated two operators with SMP in mobile market, but the decisions were withdrawn by the court. Consequently no obligations were applied.

## 2.2 Countries that had access regulation

Country	Year of regulation	Access regulation	Price regulation on access	Obligations removed following the decision in market 15
Bulgaria	2005 <sup>1</sup>	NR imposed with the licenses of the UMTS operators (not on the basis of SMP-status).		
Cyprus	2004	Based on NR decree (on the basis of SMP status).	NR, retail minus	
Denmark	2000	NR, MVNO, SP		
France	1999	"Special access" i.e. non-voice services		Removed
Germany		SP in the licenses of T-Mobile, Vodafone		

<sup>1</sup> The new regulatory framework is expected to be transposed into national law in the beginning of 2007.

		and E-plus, not O2.		
Hungary	1999	NR imposed with the mobile licenses.	NR. max 80% of the average of retail call origination fee (of net)	
Iceland	2000	NR		
Italy	1995	NR imposed as part of the tender process for new operator's entry. SP: Some obligations in force, not linked with the SMP status (transparency and non discrimination).	NR based on commercial negotiations, but it should be based on costs. The period for regulated roaming was also limited. AGCOM could intervene in case of disputes.	
The Netherlands	1999	Obligations for KPN Mobile because of SMP: to fulfil all reasonable requests for special access		All former obligations have been removed.
Norway	1998	NR and SP on the basis of SMP status.	Cost oriented prices for SP and NR. Decision on price reductions for SP services in 2002	All obligations on NetCom. Access obligations on SP for both Telenor and NetCom.
Spain	1999	NR: MNOs were obliged to provide national roaming to third MNO and 3G operator <sup>2</sup>		
Sweden	2000	NR and MVNO/SP for all MNOs including non SMP on commercial terms.		National roaming and MVNO/SP access.
Switzerland	2000	NR: The 3 GSM operators who also have a UMTS license must provide NR to the fourth UMTS licensee (new entrant, without GSM licence). However, this obligation will only enter into force once the new entrant operator has achieved a population coverage of at least 20% with his own network	NR, retail minus	
Turkey	2000	NR- on the basis of Telegram and Telephone Law that amended Law no: 4502 and dated 27 <sup>th</sup> January, 2000 and of Ordinance on Principles and Procedures for Making National Roaming Agreements dated 8 <sup>th</sup> March, 2002.		

<sup>2</sup> In Spain, under the former regulatory framework there was a type of license for MVNO: License A2. Ten operators had this license but none of them reached an agreement on a commercial basis.

The above table shows in which countries access regulation was imposed, the year of any such regulation as well as the kind of access regulation and whether the access regulation was imposed in combination with price regulation. The table also discloses any eventual withdrawal of access regulation following the decision in market 15.

In total 14 countries (Bulgaria, Cyprus, Denmark, France, Germany, Hungary, Iceland, Italy, the Netherlands, Norway, Spain, Sweden, Switzerland and Turkey) had some kind of access regulation. 11 out of these had an obligation on national roaming (NR). One country (Norway) had obligation on both national roaming and service provider access, two countries (Denmark and Sweden) had obligation on both national roaming access and MVNO/SP access, and finally one country (Germany) had only obligation on service provider access. In a majority of the countries where NR was imposed this was a result of requirements in the mobile licenses and not following SMP regulation.

Less than half of the countries (5: Cyprus, Hungary, Italy, Norway and Switzerland) which had access regulation had equally imposed price regulation on national roaming. Norway had in addition price regulation on service provider access.

### **2.3 Carrier selection**

For Cyprus, Finland and Iceland carrier selection was mandatory in mobile networks. For Portugal and Switzerland carrier selection was mandatory for international calls only.

No distinction is made between carrier selection and carrier pre selection for this report.

## **3 The new regulatory framework (Market 15)**

### **3.1 Countries which have notified analysis of market 15**

In total 12 countries have notified analyses of market 15 as of June 2006. Two tables follow below; the first disclosing the countries in which either single or joint dominance has been found. The table also gives the number of MNOs and the year of their commercial launch as well as the reason(s) for the SMP decision, the competition problems found and the remedies imposed. The second table gives an overview of the countries that have finalised analysis of market 15 and that have concluded on effective competition in the relevant market and consequently no SMP operator(s). The table gives the number of MNOs in each country, the year of commercial launch of the networks and a brief summary of the findings.

The decisions in market 15 have been appealed in Finland, Ireland, The Netherlands, Spain and Norway. In Ireland and The Netherlands final decisions have been made resulting in a new market analysis for the Irish case and the withdrawal of the SMP designation of KPN for the Dutch case. In Spain and Norway no final decision has yet been made.

In the following four countries: Finland, France, Ireland and Slovak Republic the initial market analyses or decisions of market 15 have either been withdrawn or suspended.

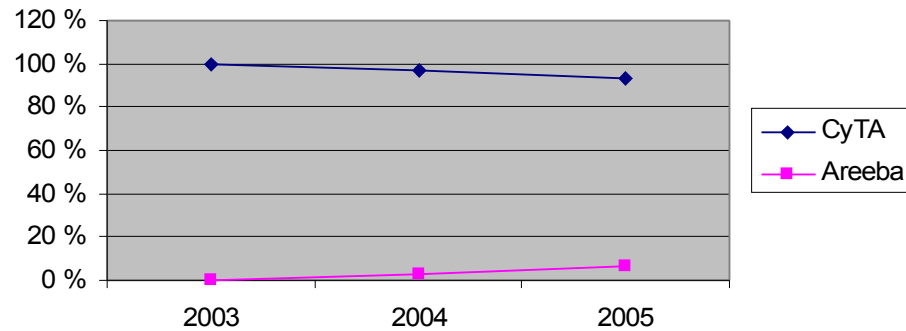
### 3.1.1 SMP designations in market 15

Four countries (Cyprus, Norway, Spain and Turkey) have notified analysis of market 15 and concluded on single (Cyprus, Norway and Turkey) or joint dominance (Spain). Three out of four countries have imposed some kind of access obligation, either in the form of NR as for Cyprus and Norway, in the form of MVNO access as in Norway or a more general access obligation as in Spain. These countries have only two or three mobile network operators. In Cyprus, Norway and Turkey the incumbents' market share have been high and stable for a long period. Furthermore, there is a quite substantial difference, although diminishing over the last few years, in market shares between the largest operator and the second largest operator.

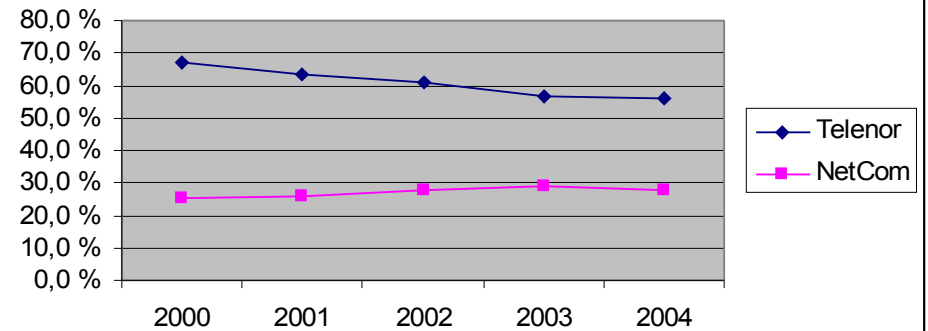
Country	# MNO	Year of com. Launch	SMP MNOs	Reasons for SMP decision	Competition problem	Remedies imposed
Cyprus	2	1995, 2004	Single dominance: CyTA (incumbent operator)	Market share, large barriers to entry, lack of countervailing buying power, economies of scale, economies of scope.	CyTA was a natural monopoly in the mobile market until the introduction of Areeba in 2004 and had 100% of subscribers at a high penetration level.	Non-discrimination, transparency, carrier selection, access to relative services and Interconnection, accounting separation, obligation for co-location and national roaming.
Norway	2	1993, 1994	Single dominance: Telenor.	Telenor's very high and relatively stable market share at the network level, high market share at the retail level, considerable entry barriers at the network level and the Telenor Group's strong position in most markets for electronic communication in Norway are particularly weighty factors in this assessment.	Denial of access, discriminatory use or withholding of information, undue requirements, quality discrimination, undue use of information about competitors, price discrimination, cross-subsidisation, excessive pricing.	Access obligation on national roaming and MVNO, non-discrimination, publication and reference offers, accounting separation, price and accounting controls for national roaming. Obligation for co-location.
Spain	3	1995, 1995, 1999	Joint dominance: TME, Vodafone and Amena.	The degree of concentration, market transparency, the existence of absolute barriers to entry (spectrum access), reinforced by the strategy followed by MNOs, which have systematically denied access to potential MVNOs and ISPs, absence of potential competition, stable demand, cost symmetry, high levels of profitability, and retaliation strategy consisting in granting access to its upstream elements or, lowering its retail prices or deviating from the common principles of the commercial strategy.	The access denial has been identified as the competitive problem. As a consequence of that, the competition at the retail level has shown significant limitations in terms of price, services and transparency.	Access obligation (Art 12 AD) that consists of obligations to meet reasonable requests for access; Reasonable access prices according to price control (Art 13 AD).
Turkey	3	1998, 1998, 2001	Single dominance: Turkcell	Difference between MNOs' market shares is high. Large barriers to entry, lack of countervailing buying power, high and stable		

market share at the retail level, economies of scope and scale, high network externalities.

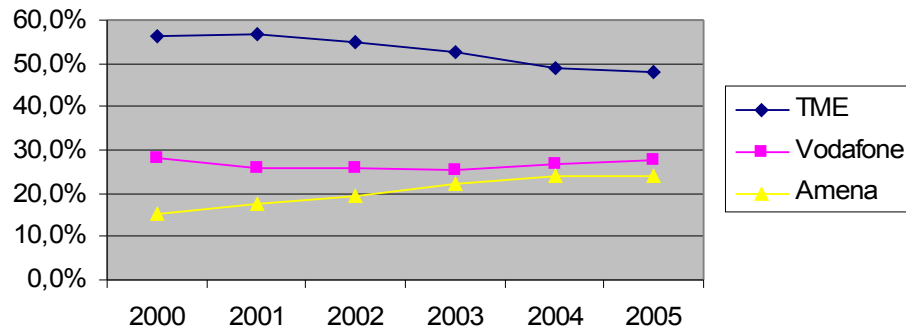
**Market share - subscribers  
Cyprus**



**Market share - subscribers  
Norway**



**Market share - subscribers  
Spain**





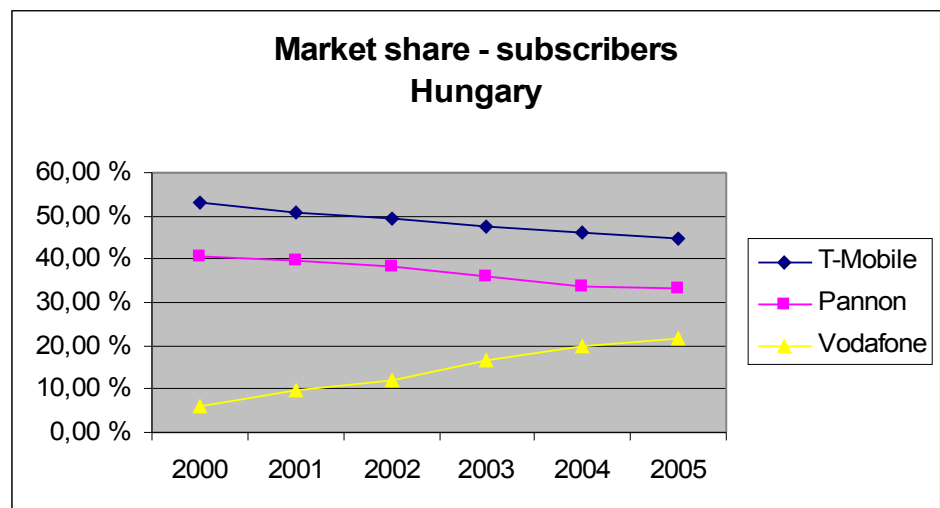
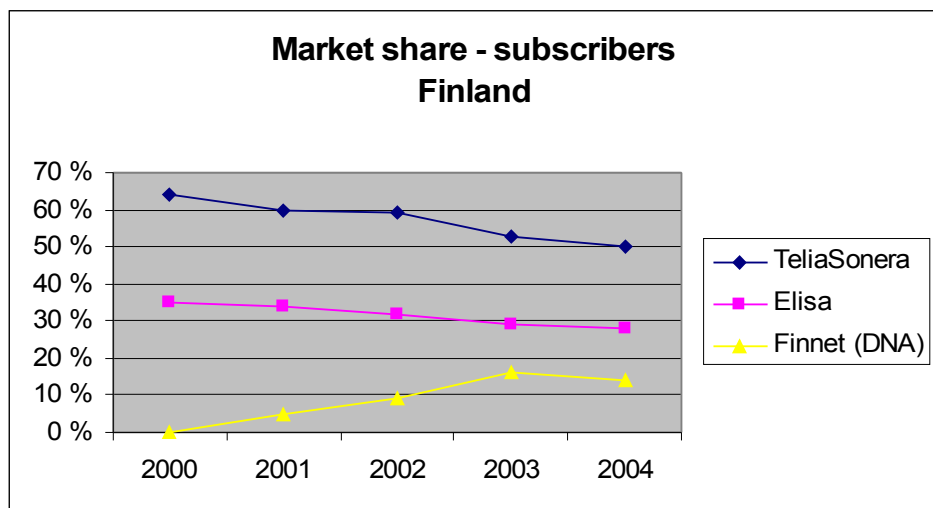
Due to insufficient or missing data the equivalent graph for Turkey could not be prepared.  
Source: individual NRA.

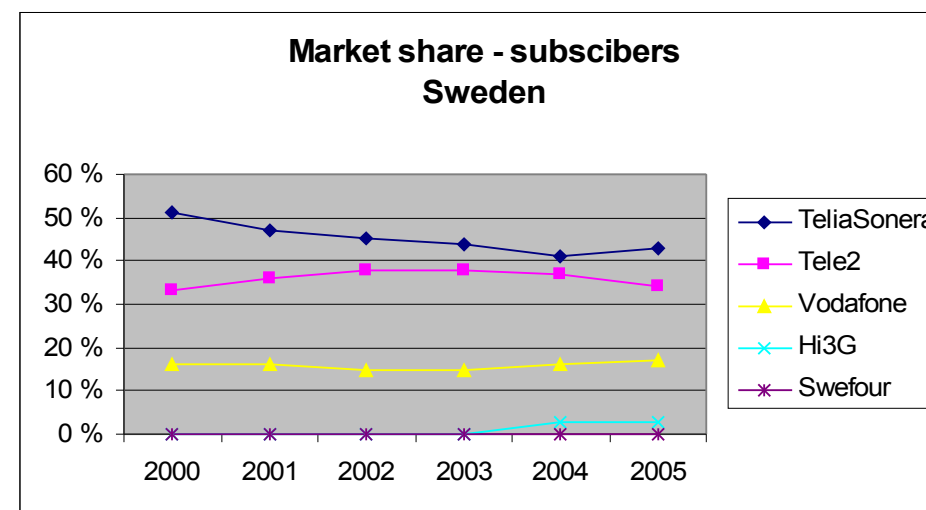
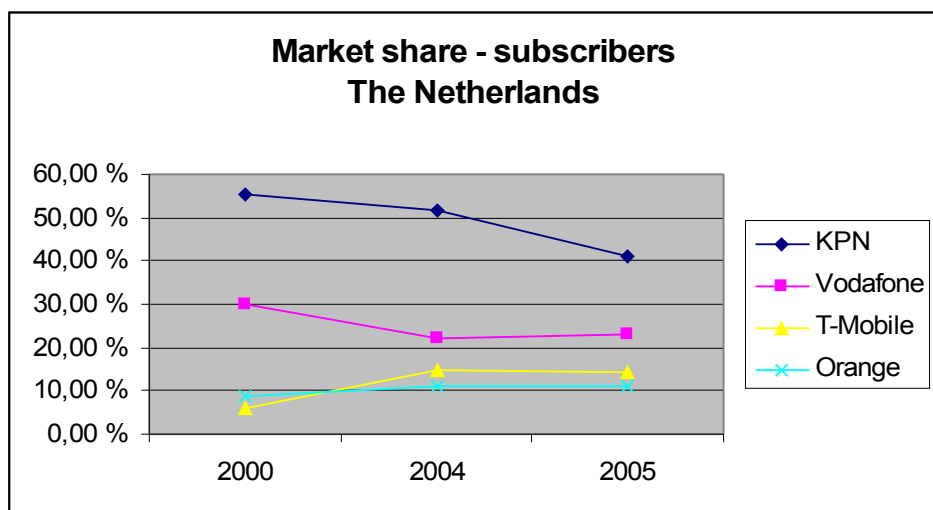
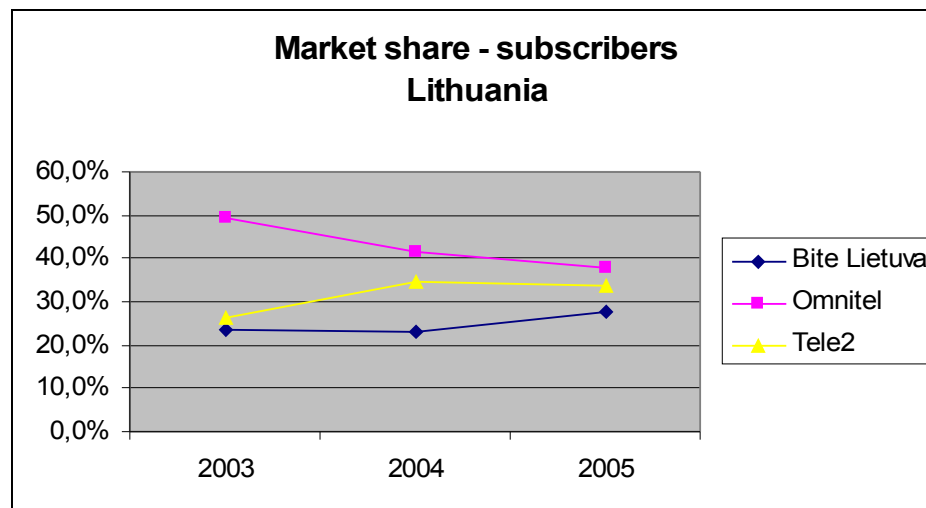
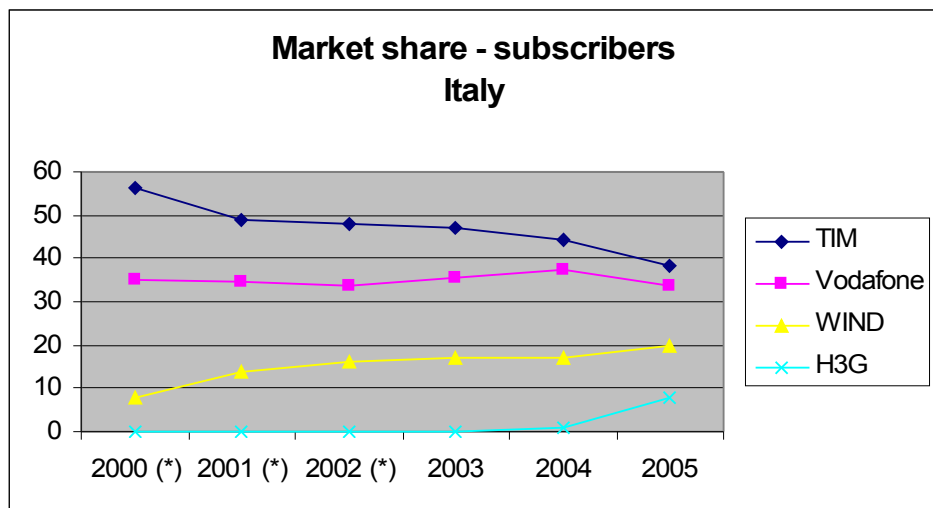
### 3.1.2 Countries with no SMP in market 15

Eight countries (Austria, Denmark, Finland, Hungary, Italy, Lithuania, The Netherlands and Sweden) have notified analysis of market 15 and concluded on effective competition and no operator(s) with SMP. With the exception of Finland, Hungary and Lithuania those countries have four or five mobile network operators.

Country	# MNO	Year of com. launch	Preliminary findings
Austria	5	1994, 1998	Effective competition on the access and call origination market as well as on the retail market: competitive market structure (5 MNOs, 1 MVNO and 2 Airtime Reseller), decreasing tariffs, and market entry of service providers without any access regulation.
Denmark	4	1982, 1992, 1998, 2003	Since there is effective competition in the market, no undertaking in the market is designated as having SMP. Obligations imposed until now will be removed.
Finland	3	1998, 1998, 2001	<p>Draft decision: FICORA stated that Sonera Mobile Networks has significant market power in the relevant market: high market share, the most important independent service operators operate in the network of Sonera Mobile Networks, the competitive advantage gained by Sonera Mobile Networks by the unequal allocation of frequencies, service operators' limited chances to switch from mobile network to another, service operators' lack of countervailing buying power, and Sonera Mobile Networks' economies of scale and scope, network effects and economic strength.</p> <p>Commission's decision (2004) regarding the withdrawal of FICORA's draft decision: The Commission found that the characteristics of the market points towards a functioning market. Even though MNOs are not obliged to provide right of access to their networks, both SPs and MVNOs have succeeded in concluding agreements on commercial basis with each of the three nationwide operators. MNOs have incentives to gain SPs as customers to their network, and there seems to be no substantial capacity constraints or other barriers to expansion. SPs and MVNOs may switch network operator and at least the most important among them seem to have substantial bargaining power vis-à-vis mobile network operators.</p> <p>Referring to the criteria presented by the Commission, FICORA considers, that no MNO has alone or together SMP.</p>
Hungary	3	1994, 1994, 1999	Sufficient competition on the related retail market, no transaction on the wholesale market.
Italy	4	1995 (GSM), 1995,	No SMP operator has been found on the market as result of the current analysis, yet AGCOM will closely monitor market developments. Final decision published in February 2006. An investigation has started regarding wholesale access to the non geographic numbers market, as a possible new market to assess (market 15bis)

		1999, 2003	
Lithuania	3	1995, 1995, 1999	Effective competition
The Netherlands	4	1995, 1995, 1998, 1999	As of November 2005, the SMP designation of KPN Mobile on the mobile market was withdrawn. The Dutch wholesale market for mobile access & originating is considered effectively competitive.
Sweden	5	1992, 1992, 1992, 2003, 2004	Final decision adopted September 2005. The market includes voice and SMS on 2G and 3G networks. No SMP found, neither single nor joint, mainly due to a significant increase in competition on the end user market with decreased prices at the retail level.





Due to insufficient or missing data the equivalent graphs for Austria and Denmark could not be prepared.

(\*) In the indicated years another GSM operator was present in the market.

Source: individual NRA.

### 3.2 Countries still investigating market 15

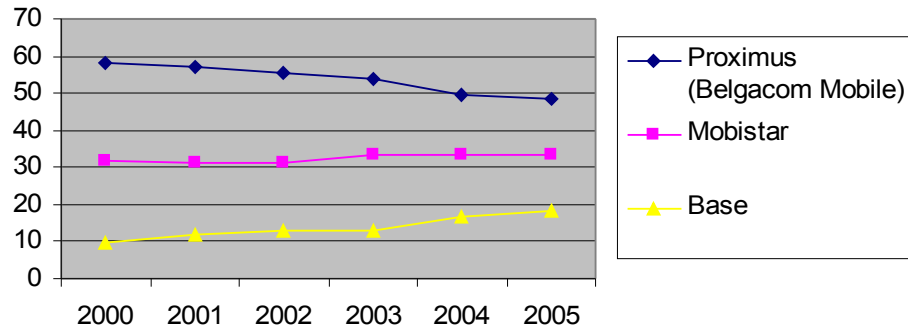
Finally, the third table shows the countries in which the analyses of market 15 are still ongoing or where the analyses have yet to commence (table updated at April 2006). As for the previous table, this also shows the number of MNOs per country, the year of commercial launch of the networks as well as a brief summary of any initial findings.

For 16 countries (Belgium, Bulgaria, Czech Republic, Estonia, France, Germany, Greece, Iceland, Ireland, Latvia, Malta, Poland, Portugal, Romania, Slovak Republic and Switzerland) the analysis of market 15 are either ongoing or not started yet.

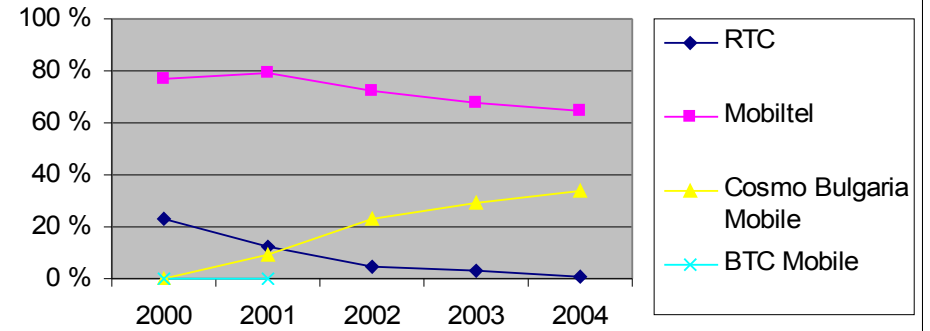
Country	# MNO	Year of com. launch	Preliminary findings
Belgium	3	1994, 1996, 1999	Service Providers reach less than 0,5 % of the global market; concerns results from claims alleging either price squeeze issues with MNO wholesale offers or refusal of access. Within an optimistic perspective, recent announcement regarding new Service Providers agreements can be construed as promising signs of improved competitions conditions on the market. Less optimistic perspective considers 1/ there will be no competition improvement as long we have no view on the wholesale prices which are offered, 2/ if there is a competition improvement it won't drive a significant market evolution within the market analysis timeline.
Bulgaria	4	1995, 2001, 2005	The new regulatory framework is expected to be transposed into national law beginning of 2007.
Czech Republic	3	1996, 1996, 1998	Relevant market 15 is competitive enough. The market analysis in Czech Republic has not been finalised yet, the results and the remedies are under consultation.
Estonia	3	1991, 1995, 1997	Market 15 is not yet analysed. Analysis will start in 2Q2006.
France	3	1991, 1991, 1994	Market analysis suspended until end of 2006 by which time a new decision will be notified to the EC. The draft decision, which had been notified to the Commission in April 2005 and then withdrawn in May investigated joint dominance and pointed out no significant MVNO/SP due to poor access conditions and poor retail competition.
Germany	4	1992, 1992, 1994, 1998	Market analysis ongoing.
Greece	4	1993, 1993, 1998, 2001	Analysis under examination.
Iceland	2	1998,	

		2000	
Ireland	4	1985, 1997, 2001, 2005	Decision was successfully appealed in December 2005. ComReg to undertake a new market review (Joint dominance: Vodafone and O2. Notification approved by Commission January 2005. Obligation to provide network access following a reasonable request, Non-discrimination, price control to be implemented by way of cost orientation, separated accounts, and Obligation to implement appropriate cost accounting systems.)
Latvia	4	1995, 1997, 2002, 2006	Still under investigation.
Malta	2	1997, 2001	Consultation has just closed and we will notify Joint Dominance shortly. Both MNO's have been designated SMP on basis of 49/51% subscriber split, similar revenues, same pricing and strategy. Tariffs have been stagnant for 2 years, there seems to be a reluctance from any MNO to differentiate/lower tariffs. Remedies: Open access, cost orientation, transparency, non discrimination, carrier selection
Poland	3		On 28 th of April 2006 UKE notified market 15 stating that there is a joint SMP on the maret, but on 22 of May we withdrawn the notification.We laced some detailed information that EC asked for. The decision did not enter into force.
Portugal	3	1992, 1992, 1998	Market analysis ongoing.
Romania	4	1997, 1997, 2000, 2002	No. An analysis of market 15 is likely to start early 2007.
Slovak Republic	2	1997, 1997	The Commission recommended us to withdraw this notification (both mobile operators as SMP, but not on joint dominance basis). Low competition. We have two mobile operators with high and stable market shares 55% vs. 45% measured by number of subscribers. Our task is to prove their joint SMP.
Switzerland	5	1993, 1998, 1998, 2005, 2005	As non EU member, Switzerland is not applying the new framework as such. The NR obligations existing under the "previous existing framework (since 1998)" are however still valid.

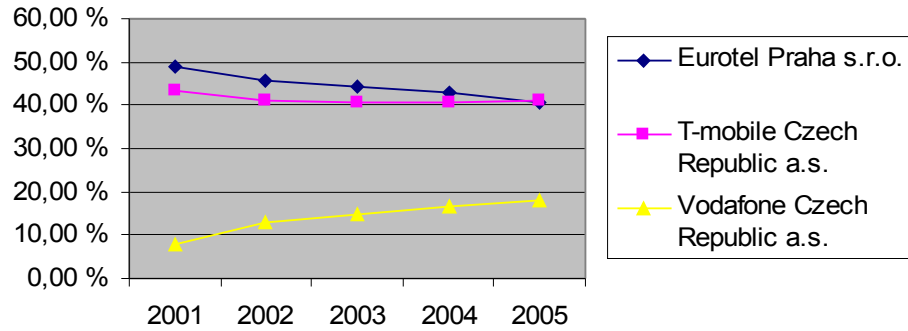
**Market share - subscribers  
Belgium**



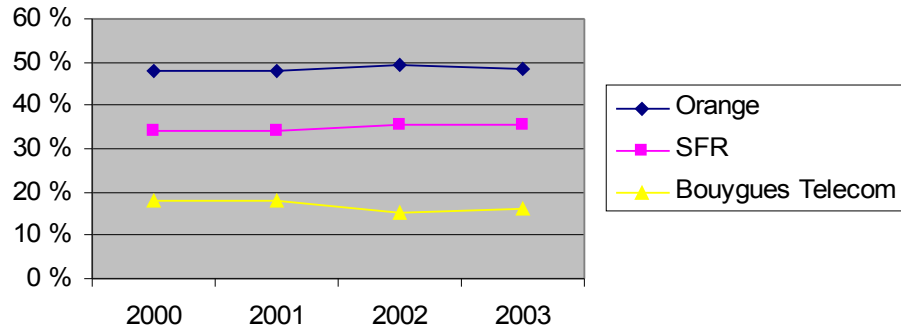
**Market share - subscribers  
Bulgaria**



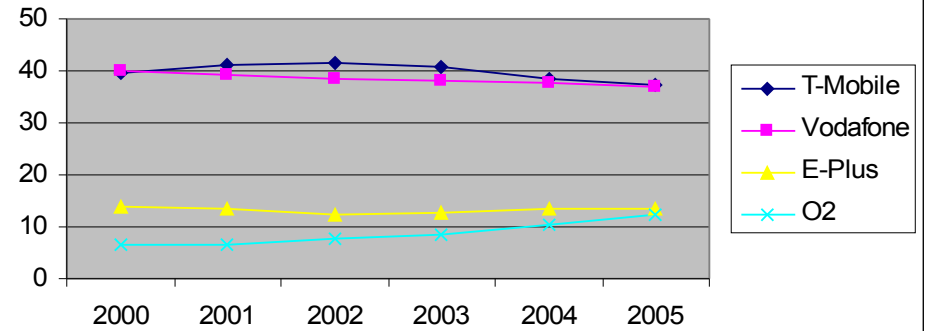
**Market share - subscribers  
Czech Republic**



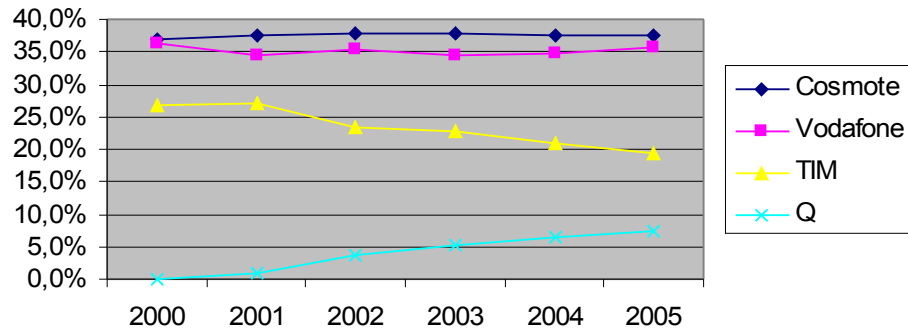
**Market share - subscribers  
France**



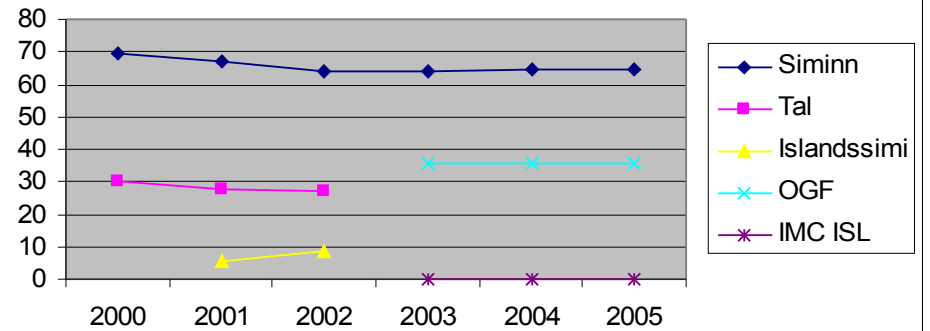
**Market share - subscribers  
Germany**



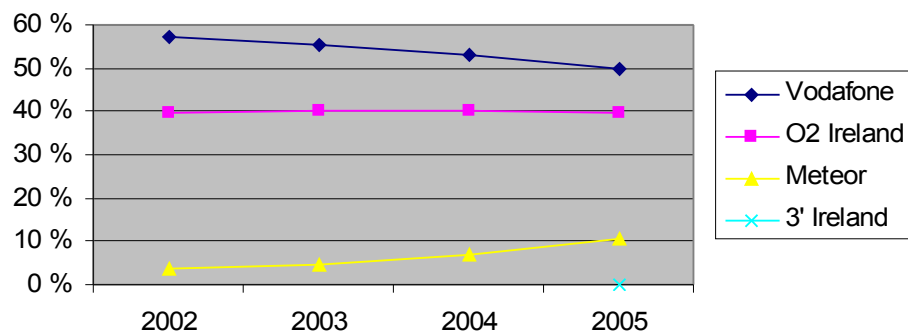
**Market share - subscribers  
Greece**



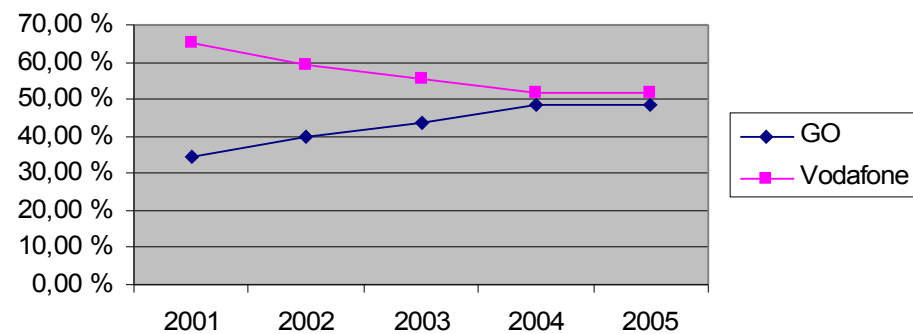
**Market share - subscribers  
Iceland**



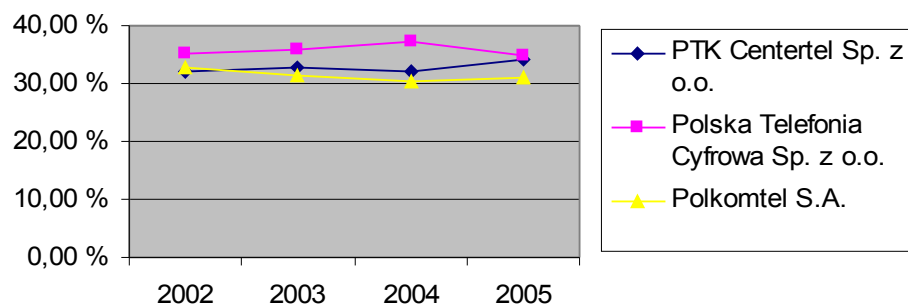
**Market share - subscriber  
Ireland**



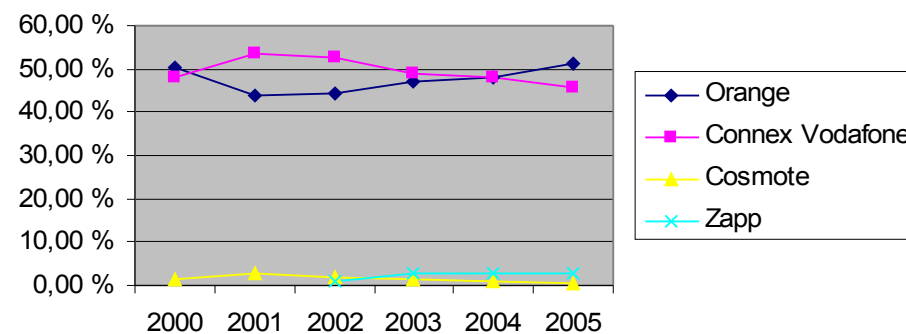
**Market share - subscribers  
Malta**



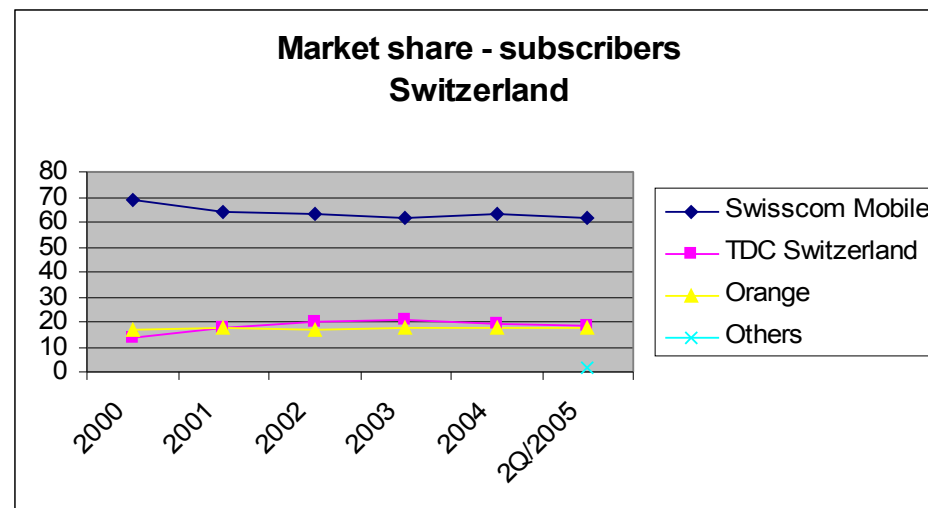
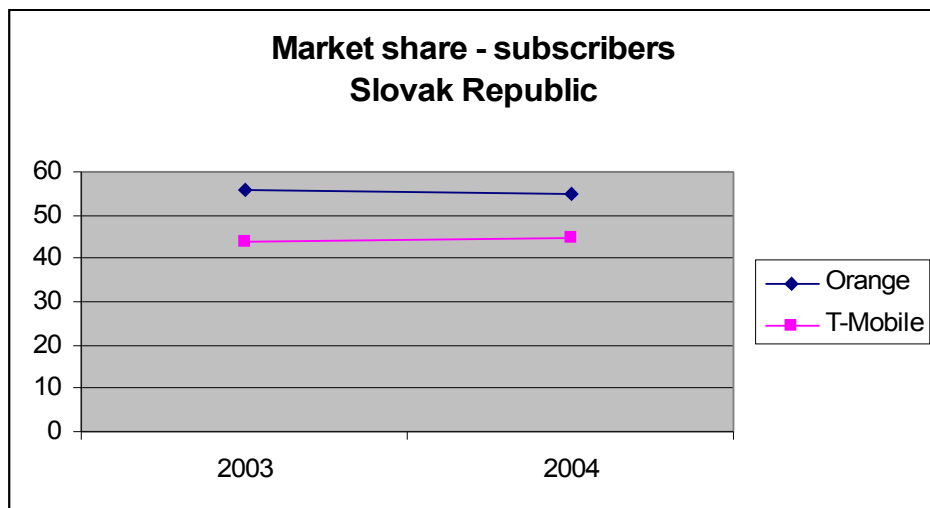
**Market share - subscribers  
Polen**



**Market share - subscribers  
Romania**







Due to insufficient or missing data the equivalent graph for Latvia could not be prepared. Portugal, Estonia data on market shares omitted (see Notice on page 1)

Source: individual NRA.

### 3.3 Carrier selection

Carrier selection is mandatory in Switzerland and for international calls only.

Following the decision in market 15 in Cyprus an obligation on carrier selection has been imposed on the SMP operator.

### 3.4 Mobile access and its effect on competition in the mobile markets

The following two tables disclose the situation with regards to MVNOs and SPs in the 28 countries participating in this analysis. The first table covers the issue of MVNOs and in particular in which countries MVNOs can be found, the name of the MVNO(s) in each country, the year of commercial launch of the first MVNO, and if any relevant effects on competition in the mobile market may be ascribed to the entry of the MVNO. The second table gives the same picture with regards to SPs, apart from the name of the SP which is exchanged for the number of SPs in each country.

The assessment of any relevant effects on competition in the mobile markets following the introduction of SPs and/or MVNOs is in some cases based on subjective views by the NRAs and not on thorough analyses of the actual situation in a particular country.

12 countries (Austria, Belgium, Denmark, Estonia, Finland, France, Germany, Latvia, Lithuania, the Netherlands, Norway and Sweden) have MVNOs and/or SP in the mobile market. Seven countries have both MVNOs and SPs whereas five have only SPs. Only four out of these 12 countries (Germany and Norway had SP and Denmark and Sweden had MVNO/SP) had access regulation under the old regulatory framework. For countries which have had MVNOs and/or SPs for several years this seem to have had effect on the competition in the mobile market, resulting in lower prices and/or new services/price plans.

### 3.4.1 MVNO

Country	Name MVNO	Year of com. launch	Market share	Com. negotiated Y/N	Relevant effects in the retail market and on competition
Austria	Tele2	2003	1,94%	Y	
Denmark	Tele2	2000			
Estonia	Bravacom	2004		Y	No significant effect has been noticed in the market.
Finland	Aina	2006		Y	Two more MVNOS were previously present in the Finish mobile market; Saunalahti, which after about half a year was bought by Elisa and Tele2 which abandoned the Finish. When Saunalahti started its operation as MVNO in 2004 it had a strategically advantageous position because it had its own SIM cards and the change of host MNO was then quite simple. Saunalahti made agreements with two MNOs, Sonera and Elisa. So, Saunalahti's bargaining power grew even more than before. By starting operating as a MVNO Saunalahti weakened MNOs also in a wholesale level. With this it made bigger mobile operators act in their integration process which is a highly strategically issue.
The Netherlands	Tele2	2001	0-5%*	Y	Lowering of retail tariffs, introduction of SIM only subscriptions.
Norway	Tele2	2003	4,5%**	Y	Tele 2 who has a MVNO agreement with Telenor is the fastest growing provider without network today, due to very competitive prices and heavy marketing.
Sweden	Djuice <sup>3</sup>	2003	1%	Y	The most obvious effect has been a change in the price structure on the retail market. After having charged the end customers a peak and off peak rate the MVNO introduced a flat rate offer with the same charge per minute, regardless of when the call was made and its national destination (fixed or mobile). This has been copied by the MNOs. However, the only MVNO has failed to gain a significant market share.

Market share measured in subscribers for 2005.

\* Figure for 2003.

\*\* Figure for 2004.

<sup>3</sup> Djuice is the brand name of Telenor in Sweden. Telenor has acquired Vodafone Sverige AB and is now migrating their MVNO customers to their own network.

Bulgaria, Cyprus, Czech Republic, Greece, Hungary, Iceland, Ireland, Italy, Malta, Portugal, Romania, Slovak Republic, Spain, Switzerland and Turkey have neither SPs nor MVNOs in their national mobile markets. Belgium, France, Germany, Latvia and Lithuania have SPs in their national mobile markets but no MVNOs.

In Germany Vistream plans to enter the market for MVNO services (on the basis of voluntary agreements commercially negotiated).

### 3.4.2 Service providers (SP)

Country	# SP	Year of com. launch	Market share	Com. negotiated Y/N	Relevant effects in the retail market and on competition
Austria	2			Y	
Belgium	17	2002		Y	We don't see a particular effect on competition since the introduction of SP in Belgium with the exception that 2 MNO launched their own fully controlled low cost division ('Simyo' for Base and 'Ugly Duck' for Proximus). Mobistar announced the signature of a first SP agreement early January this year.
Denmark	22				Lower prices, and the introduction of internet self service low cost products. However, this could be due to other factors as well. The largest SP's (CBB and Telmore) have been bought by subsequently Sonofon and TDC
Estonia	4	2005	Below 0,5%	Y	Since the introduction of SPs there are no significant effects. Instead, MNOs have created so-called "sparing-operators". Which mean, that actually MNOs have created just packages, where the prices are significantly lower, compared to another packages of the same MNO. For those cheaper packages the MNOs have registered a trademark and named it "sparing-operators" ("Säästuoperaator"). Now this trademark name is inseparable part of those low-price package brand-names. For customers MNOs have succeeded to create an illusion, that there is new low-price SPs on the market.
Finland	8	1998	Below 1%	Y	Price erosion accelerated in 2004 (9,9%) compared to in 2003 when it was 6,9%. Operators started to market packet-priced subscriptions where end-user could get 500 minutes voice + 100 SMS for 20 € per month. After the introduction of number portability (July 2003) the growth of the independent service providers was really fast. At its best independent service providers and MVNOs market share was over 10%. The relevant effect of that was price competition (voice and SMS) on the retail level. All operators had to cut costs and all the large mobile operators reduced their personnel from the start of the number portability. The two largest MNOs, Elisa and TeliaSonera, launched their own cheap operators Kolumbus and Tele Finland, which immediately reacted price reductions by other operators. New services and especially 3G-services have not been marketed while the price competition of voice and SMS was at its best. Now, when ACN (SP) has quit Finnish markets and Elisa bought Saunalahti Group Oyj, price competition has been settled.

France	9	2004	1,43% (Q2 06)	Y	MVNOs reproduce regular MNO offers, and also make some specific offers such as naked SIM offers, offers with no constraint on contract duration, slightly lower prices for small volumes (approx. 15%). Two SPs are currently acquiring customers on a regular basis; however SP market shares are low (1,43% Q2 06).
Germany	10		25,6%*	Y	SP were more or less present since the beginning, because of the license condition for T-Mobile, Vodafone and e-plus to allow SPs.
Latvia	4	2002		Y	
Lithuania	4	2003	0,7%	Y	Competition slightly increased in business sector, because SPs target mainly this sector. But their impact on competition is very limited.
The Netherlands	<60	1995	5-10%**	Y	Lowering of retail tariffs, introduction of SIM only subscriptions. Rapid increase in number of SP's; some SP's shifting from one MNO to another; SP's leaving the market; better use of existing network capacity.
Norway	13	2000	11,7%*	Only partly Y	SPs gain nearly 12% market share in the retail market in 2004. Since introduction of SP the prices in the retail market has lowered several times. New price plans (e.g. flat rate) and services have been introduced.
Sweden	14	1999	2%	Y	No significant effect noted.

Total market share measured in subscribers for 2005<sup>4</sup>.

\* Figures for 2004.

\*\* Figures for 2003.

### 3.4.3 National roaming

In 11 countries (Austria, Cyprus, Finland, France, Germany, Iceland, Ireland, Italy, Norway, Sweden and Switzerland) MNOs are operating partly on national roaming agreements, most of which are commercially negotiated.

### 3.5 *National Competition Authority Cases that may have resulted or may result in a setting of access obligations to MNOs*

Finland	NCA started to investigate by its own initiative wholesale mobile markets (access and termination) on February 2005. ACN quit Finnish market on February 2005. ACN's subscribers continued to stay in TeliaSonera's network, because ACN's customers continued to be as Tele Finland's customers. Tele Finland is service operator owned by TeliaSonera. NCA's investigation of it is under the process. Elisa bought Saunalahti in summer 2005. NCA accepted the acquisition setting conditions on broadband markets. Telia Finland made request for action against Sonera and Radiolinja in 1998. According Telia Finland, Sonera and Radiolinja misused their dominating market power offering better conditions to foreign operators and their own service operators comparing the conditions they were offering to Telia Finland. NCA's judgement was in 1999 that Sonera and Radiolinja didn't have the single or joint dominant market position in the access market of Finnish nationwide mobile networks.
---------	--

<sup>4</sup> The measurement date varies from country to country, not all are at 31. December 2005.

Italy	In February 2005 Italian NCA opened a case against TIM, Vodafone and Wind for an alleged abuse of dominant position. The claims are that the three operators prevented the finalisation of commercial agreements for the market entrance of the SPs and ESPs. The case is still pending.
The Netherlands	Takeover of Telfort (5th MNO) by KPN in October 2005 led the NCA to investigate the market. Both the NCA and OPTA concluded the takeover would lead to SMP. Since then there are only 4 MNOs.

## 4 Preliminary Conclusions

An assessment of the countries in which market 15 has been notified (12 out of 28 countries) and where effective competition has been established (8 out of 12 countries) disclose that all of them, with the exceptions being Finland, Hungary and Lithuania have four or more MNOs whereas in the countries where no effective competition has been established (4 out of 12 countries) there are three or less MNOs. This could indicate that four networks or more is significant in order to obtain effective competition in the mobile market, however not taking into account size of the country and density of population in each country. It is however not possible from the gathered information to draw such a firm conclusion regarding effective competition. Still the majority of the countries with fewer MNOs have yet to carry out the analysis of market 15. This does however indicate that SPs and MVNOs might have a particular role to play in countries with fewer MNOs.

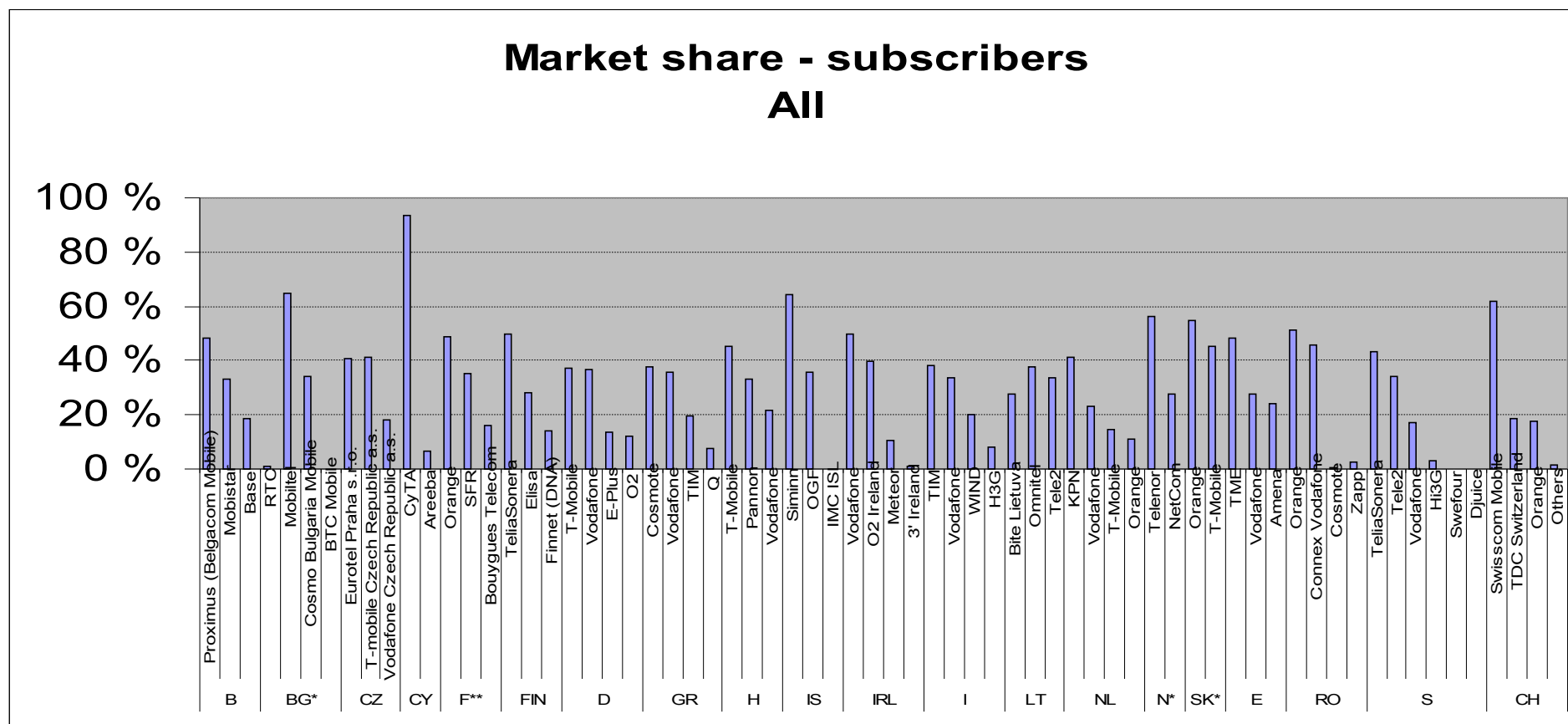
Despite the fact that SPs and MVNOs in a number of countries have limited market shares the NRAs have noticed that when pricing and technical conditions for SPs and MVNOs are sustainable, SPs and MVNOs seem to have a positive effect on the development of the mobile market. These observations are based on anecdotal evidence rather than quantitative data and could hence motivate further studies of the question. In some countries the effect on competition can be ascribed to MVNOs whereas in other countries this can be ascribed to SPs, whenever such a distinction is relevant. Naturally this is a result of the current competitive situation in a particular national market, but it could also be due to divergent regulation in these countries. A number of examples show that SPs and MVNOs are eventually bought by MNOs when they reach a customer base of a certain importance.

The vast majority of the agreements on SP and MVNO access are based on commercial negotiations. The “threat” of a potential regulation may however not be ruled out as a means of rendering these commercial agreements possible and may, in some cases, play an important role.

In the countries where access regulation was imposed early under the old regulatory framework the market shares of the SPs and MVNOs seem to be slightly higher than for the countries where no access regulation was imposed. This might however equally be due to early market entry of the SPs and/or MVNOs.

## 5 Annex 1

Due to insufficient or missing data the equivalent graphs for the following countries: Austria, Denmark, Latvia and Turkey could not be prepared. Data for Portugal, Estonia omitted (see notice on page 1).



Market share per MNO per country for 2005 measured in subscribers.  
Source: individual NRA. (\* Figures for 2004.\*\* Figures for 2003.)

## Annex 2

### Definitions:

#### **Operator Scenario 1: SP access**

In this model, the SP commercializes the offers of the MNO, and manages billing and customer relationship. The SP does not control any network element and makes use of the SIM cards of the MNO.

It is also known as SP (Service Provider), or airtime reseller. It usually obtains a discount on connection charges or usage from the network operator, which provides them with their profit margin. SPs can only market the services offered by the MNO and have limited possibilities to offer a different price structure, as their pricing tends to follow the pattern established by the MNO.

#### **Operator Scenario 2: SP access**

The SP makes use of its own SIM cards, and disposes of its own HLR space (owning an HLR or in an HLR from the MNO) for customer profiles management.

It is also known as ESP (Enhanced Service Provider). It resells the services of a MNO and provides additional own services. They may market their services independently of the MNO. Since they have not been assigned their own MNC, ESPs have no control over international roaming agreements and depending on their network infrastructure may or may not have own interconnection agreements.

#### **Operator Scenario 3: MVNO access**

In this model the MVNO owns switching network elements (HLR and GMSC as a minimum). This way, the MVNO may differentiate its commercial offer from the MNO's offer.

It is also known as MVNO (Mobile Virtual Network Operator). It is not allocated its own radio spectrum and therefore uses the radio access network of one or more mobile network operators. MVNO operations involve: own SIM cards and mobile network code (MNC) and own interconnection agreements.

#### Note

The above classification is indicative only and does not in general prevent different or mixed operations, depending on market circumstances.