Report on Experiences with Market Definition, Market Analysis and Applied Remedies

(Experiences Project)

Data As of: 15-July-2005

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I SCOPE OF THE PAPER

The ERG Work Programme for 2005 identified the importance in the practical implementation of the current regulatory framework of market definition and analysis. Therefore, it included a mandate of further work regarding results and experiences related to the market analysis process including a comparative analysis of notifications according to Article 7 of the Framework Directive (the Experiences Project). The goal of this report should be to achieve relevant inputs for the Opinion on a revision of the Recommendation on relevant markets [ie the "Recommendation"] and to the updated Common Position on Remedies, as appropriate.

In order to fulfil this mandate the following document is set up on the basis of the ERG Working paper ERG (05) 22. Following the internal agreement within IRG, the project was focussed on markets 10, 11, 12, 15 and 16 of the Recommendation. In addition to this report, the Experiences Project is completed by an on line tool that makes possible the access of NRAs to relevant information (through IRGNet and in cooperation with IRGNet WG). This information is aimed to be updated as relevant decisions are taken in the analysis process.

It has been also agreed within IRG that the project will be coordinated with the services of the European Commission (Art. 7 Task Force) [ie the "Commission"].

This paper describes the market analysis process of five markets included in the Recommendation identifying, where possible, common problems and trends. In so doing, the report elaborates on market definition, market analysis and remedies imposed in all five markets, and goes in some parts beyond these, where different results were achieved by NRAs. Nevertheless, it has to be taken into account that national circumstances differ substantially form one country to another and therefore, this document is merely a starting point to understand why the final output in some cases has been different.

The information used for the purpose of this report was collected by the end of June 2005, so, in general, it only reflects the notifications up to that moment, together with some others that were in Public Consultation in the respective member states.

The deliverable consists of five chapters covering the market definition, market analysis and remedies imposed in the above mentioned markets.

II COMPARATIVE ANALYSIS ON ISSUES RELATED TO MARKET 10 OF THE RECOMMENDATION

II.1 Summary of answers

Table 1. Summary of market 10

	Summary of answers				Decision Status				Result of Market Analysis
	Answers	Market Def.	Market Analysis	Remedies	Final Decision	Notif. Process	National Consult.	Vetoed	
ANACOM (Portugal)	X	X	X	X	X				Effective Comp.
ANRC (Romania)	X	X	X	X	X				Single SMP
ComReg (Ireland)	X	X	X	X	X				Single SMP
FICORA (Finland)	X	X	X	X	X				Single SMP
NCAH (Hungary)	X	X	X	X	X				Effective Comp.
PTS (Sweden)	X	X	X	X	X				Single SMP
BNETZA (Germany)	X	X	X	x	X				Single SMP
ARCEP (France)	X	X	X	X	X				Single SMP
AGCOM (Italy)	X	X	X	X			X		Single SMP
NITA (Denmark)	X	X	X				X		Single SMP
OFCOM (UK)	X	X	X				X		Effective Comp.
RTR (Austria)	X	X	X					X	Effective Comp.
APEK (Slovenia)	X								
CMT (Spain)	X								
EETT (Greece)	X								
URTiP (Poland)	X								
BIPT (Belgium)	X								
CRC (Bulgaria)	X								
SIDEAMET (Estonia)	X								
SPRK (Latvia)	X								

MCA (Malta)	X								
NPT (Norway)	X								
OPTA (Nederland)	X								
PTA (Iceland)	X								
RRT (Lithuania)	X								
OCTPR (Cyprus)	X								
CTU (Czech Republic)	X								
TUSR (Slovakia)									
ILR (Luxemburg)									
Total	**27**	**12**	**12**	**8**	**8**	**0**	**3**	**1**	

II.2 Market definition

II.2.1 Commission Definition

Explanatory memorandum, Recommendation

"*In addition to wholesale call origination and call termination, call conveyance or transit will be needed in order to complete a call. […]*

Transit services refer to the (long distance) conveyance of switched calls on the public telephone network provided at a fixed location. This is a different product from say the provision of dedicated capacity of itself, even if some transit services are provided over leased circuits or links. The difference is that leased lines provide dedicated capacity between two fixed points whereas transit refers instead to switched calls on the public telephone network provided at a fixed location. Transit services therefore compromise both conveyance between tandem switches on a given network, between tandem switches on different networks and including pure conveyance across a third network. […]

The market identified for the purpose of this Recommendation is Wholesale Transit Services in the Public Telephone Network. Depending on network topologies, the delineation between call origination and transit services can vary and it is left to NRAs define those elements constituting each part. It should be noted by the NRAs that while there is a degree of discretion in deciding the appropriate elements constituting call origination, call termination and transit services, these elements are additive, the sum of the three making the whole. This means for instance that if call origination and call termination are already defined that then transit is also defined by default."

II.2.2 Definition by products

1. Products included

- Definition by default:

Several NRAs adopted a “by default” definition under which transit market is defined as the complementary of call origination and call termination markets, as described by the Commission recommendation. This segmentation fully describes a minute conveyance.

It concerns:

- Adopted decisions : ANACOM, comreg, PTS, ARCEP
- National consultation : NITA

- Detailed analysis:

Most NRAs include transit services at different levels : local/regional/national. The way they address the issue is different from an NRA to another depending on the specificities of their own incumbent network.

Voice telephony and narrowband dial up have been expressly included in the market definition by 3 NRAs : RTR, ARCEP, NITA.

ARCEP mentioned also that its definition includes all traffic types whatever the technology used in accordance with the principle of technological neutrality, products are analysed through their function and not their way of production. NITA, PTS and AGCOM adopted the same neutral definition, including all fixed telephony services based on any technologies.

Some NRAs have included in this market bundled products with fixed call origination and fixed call termination : ARCEP, RTR, BNETZA.

As far as ANRC is concerned, giving the fact that the market was defined early after the liberalization process, it was adopted a wide definition since the call origination services, call termination services and transit services are included in the same market. (but not concerned so far by the notification process to the Commission).

2. Products considered as potential substitutes and excluded

Leased lines are expressly excluded by NCAH, PTS, ARCEP and ComReg. The latest mentioned also that they excluded any alternative infrastructures such as cable and FWA.

International traffic has been excluded by ARCEP, ANACOM, BNETZA and ComReg.

One specificity must be mentioned : OFCOM excluded the single transit from that market definition because of national circumstances. This analysis has not yet been notified to the Commission.

3. Market segmentation

All NRAs have defined one global market 10 including all products except for three NRAs that defined submarkets within market 10.

ARCEP indeed has to define intra territory transit market (transit within one territory) and inter territories transit market (transit between two territories) since it has to do market analysis on different territories and under different competition circumstances : metropolitan and overseas territories.

BNETZA has segmented the market into 5 submarkets :

- Submarket 1: Transit services in the fixed public telephone network plus call origination of local, long-distance, NTR, international and mobile calls;

- Submarket 2: Transit services in the fixed public telephone network via interconnection accesses plus calls originating on national networks to services;

- Submarket 3: Transit services in the fixed public telephone network via primary multiplex accesses plus calls originating on national networks to online services;

- Submarket 4: Transit services in the fixed public telephone network plus call termination in national networks except calls originating and terminating on national mobile networks;

- Submarket 5: Transit services in the fixed public telephone network plus termination of calls on national mobile networks originating on national mobile networks.

BNETZA proved the fulfilment of the 3 criteria test as this demonstration is made compulsory by the German law for each market analysis. ARCEP also demonstrated that all its submarkets are relevant for ex ante regulation.

These two NRAs mentioned that the addition of all these submarkets leads to the market 10 definition and the Commission did not make any comments concerning these analyses.

FICORA defined 12 separate regional transit markets and one market for nationwide transit services. The relevant geographic markets for local transit services were delineated on the basis of the borders of the telecommunications areas, meaning the numbering areas with the same trunk code. FICORA concluded that there are a number of different competitive circumstances and pricing practises with regard to the transit services within particular telecommunication areas and on the nationwide transit services. The Commission did not make any comments concerning this analysis.

These examples seem to show that the Commission allows easily market segmentation within one market (which is different from creating one new market).

4. Transit services and mobile

Concerning transit services between mobile networks, the situation is not homogeneous among NRAS.

This kind of traffic has indeed been included by NITA, BNETZA[1], RTR, and ARCEP, but excluded by PTS, NCAH, COMREG.

If BNETZA included it in its submarket 5, it has declared that market competitive and thus is not regulating that market anymore.

Thus, at this time, the only NRA that has included transit services between mobile networks and regulates these services is ARCEP, since RTR decision has been vetoed and NITA is only at the public consultation stage.

5. Direct interconnection

The way direct interconnection is dealt with differs among NRAs.

RTR considered that direct interconnection is a substitute to transit services as, with a certain volume of traffic, direct interconnection can be achieved promptly with relatively few investments. It mentioned that in the past massive substitution from transit services to direct interconnection has been observed. RTR considered that its market definition was not deviating from the Commission definition.

But the Commission vetoed it because direct interconnection was included and that RTR had not sufficiently proven that operators can easily switch to direct interconnection in response to a price increase. Furthermore, the Commission considered that direct interconnection by operators not offering transit services externally should not be included into the market as they do not exercise a competitive constraint on the incumbent.

The EC noticed in its veto that self-supply through direct interconnection may be considered as potential competition at the stage of SMP assessment, but should not be part of the market definition. RTR's point of view is that if a competitive force is significant (as self-supply through direct interconnection is), it should be included in the market definition. Otherwise (if it is not significant) it should not be included in the market definition and it should not be considered at the stage of SMP assessment either (as it is insignificant, it won't change the conclusion on SMP).

Concerning other NRAs, direct interconnection has been :

[1] BNetza has defined separate markets for transit between mobile networks.

- Excluded expressly when defining the market by ANACOM, comreg, BNETZA, FICORA, PTS (it is analysed within market 9), and AGCOM;
- Included it in their market definition: NITA, OFCOM (excepting direct interconnection on mobile networks).

In ARCEP case, if direct interconnection is allowed and encouraged, it does not really exist at this time and has therefore not been taken into account in this first market analysis. Direct interconnection was not considered at all by NCAH since there are numerous network operators on the market of fixed telephony where five operators are operating basically on the given numbering areas of the country.

BNETZA didn't take into account direct interconnection when defining market 10 but it was used as a criterion for assessing market power. ARCEP also took into account direct interconnection when assessing market power. (see market analysis below).

Direct interconnection is mainly excluded by NRAs when defining the market and the Commission seems to maintain its approach on that point.

Therefore, except for NITA and OFCOM, direct interconnection seems rather to be a criterion for assessing market power than a product that must be taken into account when defining market 10.

II.2.3 Geographic definition

Geographic market is:

- National for AGCOM, ANACOM, ComReg, OFCOM, PTS, BNETZA, RTR, NCAH and ANRC.
- Divided into different territories :
    - FICORA : 12 territories because of existence of 12 numbering areas and transit services in one area cannot be a substitute to transit services in another area ;
    - ARCEP because of traffic from, to and between overseas territories;
    - NITA: 2 areas have been defined because of significant differences in competitive conditions ; number of operators differs from one area to the other, which leads to different competition conditions.

The principle is then a national scope for market 10. Exceptions to that principle are due to national circumstances like historic development of electronic communications or geographic specificities.

II.3 Market analysis

Finding of SMP was mixed:

- 8 NRAs found single SMP (ANRC, COMREG, PTS, BNETZA, ARCEP, FICORA, NITA and AGCOM);
- 4 found effective competition (Ofcom, RTR, ANACOM, NCAH).

BNETZA that defined 5 different markets for market 10 has found one of them competitive, fixed transit between mobile operators, and has designated one SMP operator for the 4 remaining markets.

All NRAs found only single dominance, even if ARCEP have had also to analyse joint dominance (see below).

II.3.1 Main Issues Arising

Table 2 below summarises the NRAs' responses to the questions in relation to the main issues that arose in the assessment of SMP in this market:

Table 2. Main issues arising

Issue	Yes	No
1) Indirect pricing constraint/self supply	8 = ARCEP, Ofcom, RTR. AGCOM, PTS, ComReg, ANRC, BNETZA, NITA	4 = Ficora, NCAH, ANACOM,
2) Potential competition/supply-side substitution	7 = Ficora, NCAH, Ofcom, RTR, AGCOM, PTS, ComReg	5 = ANACOM, ANRC, BNETZA, ARCEP, NITA
3) Assessing SMP absent regulation	2 = RTR, AGCOM,	10 = Ficora, NCAH, ANACOM, Ofcom, PTS, ComReg, ANRC, BNETZA, ARCEP, NITA
4) Forward-looking assessment of dominance	7 = Ficora, Ofcom, RTR, AGCOM, ComReg, ARCEP, NITA	5 = NCAH, ANACOM, PTS, ANRC, BNETZA
5) Assessment of market power in closely related markets	7 = RTR, AGCOM, Ficora, PTS, ComReg, NITA and ARCEP,	5 = NCAH, ANACOM, ANRC, BNETZA, Ofcom
2) Other	2 = ARCEP, Ficora	

These issues are discussed in turn below.

1. **Indirect pricing constraint/self supply**

As the table shows, self-supply was an issue for 8 NRAs, and not an issue for 4. For those that noted it was an issue, the common thread was that self-supply was included in the market share calculation, reflecting the fact that self-supply was included in the relevant defined market.

Notably, one NRA (Ofcom) noted that self-supply had the effect of suppressing the incumbent's prices, which underpins the reasoning behind including self-supply within the market. Another NRA (RTR) stated in similar terms that operators are able to switch to self-supply in response to SSNIPs by external providers. The metric used was minutes.

The purpose of this issue in the context of SMP is perhaps more related to the issues faced in measurement of self-supply. In relation to RTR's assessment of market 10, the commission in its veto noted that:

- There was "*insufficient evidence for the inclusion of self-provision [self-supply] through direct interconnection in the marke*t" ;
- RTR had not applied a thorough green field analysis.

BNETZA noted that the option of self-supply provided operators with countervailing market power and then declared the submarket 5 as competitive.

Concerning ARCEP, it had not taken self supply into account when defining the market nor when assessing market shares but self supply was used as a qualitative criterion for enhancing market power analysis through economies of scale review. ARCEP indeed took it into account when analysing vertical integration of the incumbent.

Thus, it seems that the way self supply is dealt with among NRAs can deeply differ.

2. Appropriate identification of supply side substitution and potential competition

7 NRAs considered this to be one of the main issues in the assessment of SMP in the transit market. The purpose of this question was to probe the issue of whether competitive constraints on the supply side were considered as a case of supply-side substitution (market definition) or alternatively as a source of potential competition in the assessment of SMP (market analysis).

Whether or not self-supply is considered to be a constraint under either market definition or market analysis, the general issue to be determined is the nature of the possible entry. It can be inferred from the responses that NRAs generally did not interpret the question in accordance with this purpose. Most NRAs answered this question in the general sense without distinguishing between the two concepts. In general, NRAs, which found SMP, noted that potential competition was limited due to the high sunk costs of building competing infrastructure. In that sense, NRAs generally considered this to be a potential entry issue rather than one of market definition.

Ofcom considered that entry through self-supply has led to increased competition, but it is not clear how this was formally incorporated into the assessment. RTR, which also found no SMP, was the exception in finding that self-supply should be considered under market definition, and indeed included within the relevant market. In its veto, however, the EC considered that self-supply should be assessed as an issue of potential competition at the SMP assessment stage.

3. **Assessment of market power 'absent regulation' - e.g., in retail markets with existing wholesale regulation**

As the table shows, this was not seen as a major issue for most NRAs. However, RTR stated that the EC claimed in its veto that it had not applied a thorough Greenfield analysis, and that it had not properly analysed the effects of removing existing obligations on small operators. However, RTR argued that direct interconnection was still possible for smaller operators.

AGCOM noted that small operators need regulation on transit services in order to provide retail national calls.

4. **Forward-looking assessment of SMP versus backward-looking competition law assessment of dominance**

This issue relates to the use of 'prospective' analysis and the ongoing sustainability of the market power, which can be contrasted with the requirement under competition law to establish dominance over a different relevant time period, namely the period over which the abuse took place.

This was an issue faced by 7 NRAs in their SMP assessment. NRAs generally adopted a forward-looking approach to their assessment. For example RTR, ARCEP and Ofcom took the common approach of projecting trends into the future, which underpinned a finding of effective competition in this market.

On the other hand, ANACOM that declared the market competitive did not use this criterion because it noted that this market was getting smaller.

5. **Assessment of market power in closely related markets**

This issue is concerned with whether market power in closely related markets was a factor in the assessment of SMP in this market. The significance is that market power in horizontally or vertically related markets can potentially be leveraged into the transit market, thereby heightening the chance of finding SMP.

This was an issue faced by 7 NRAs, only for those who found SMP in this market. Generally it was noted that the SMP operators are vertically integrated, and operate in call origination and call termination markets. Cost advantages from economies of scope (and scale) arising from operating tandem services at exchanges was also noted by ComReg.

It can be noted that NRAs that found the market competitive did not use that criterion : even if the incumbent has been declared dominant in call origination and call termination markets, they did not take it into account and did not think that it could circumvent declining market shares.

6. **Other issues**

The only notable issue was that ARCEP looked at the possibility of joint dominance between the incumbent and two smaller operators mainly characterized by their interconnection capillarity. Even if it agreed with the designation of the incumbent as having SMP, the Competition Council noted that ARCEP should also look at the SMP of 2 other operators. ARCEP took this comment into account and analysed the situation of the two other operators and found no evidence of joint dominance. The Commission agreed with its analysis.

II.3.2 Most Important Criteria

Answers to questionnaire show a consistent choice of criteria among NRAs to assess SMP or effective competition.

1. **Market shares**

All NRAs used the market shares criterion.

The 4 NRAs that found effective competition nominated this as one of the key criterion, noting that the market shares indicated declining trends.

In respect of ANACOM's assessment of SMP, the Commission stated: "*Irrespective of whether, as a result of the 3 criteria test, the Portuguese market for transit services in the fixed public networks could be found to be susceptible to ex ante regulation, the market analysis in this particular case would still not have led to a finding of SMP on the basis of the elements set out above (including declining and residual market share of PTC, the presence of various operators in the market).*"

Similarly, the NRAs which found dominance unanimously nominated market shares as one of the most important criterion in their assessment, primarily on the basis that high and stable market shares are a classic indicator of dominance.

2. **Economies of scale**

All NRAs that have found SMP operators used that criterion: they took into account that high costs lead to important economies of scales. In those countries, the incumbent is conveying significant traffic volumes and can therefore benefit from huge volumes to have costs advantages over new entrants.

ARCEP explained that, as required by the Competition Council, in order to measure economies of scales, it took into account the self supply of wholesale products: self supply volumes contribute to the covering of huge fixe costs and thus provide a good indicator on the extent of economies of scales and costs.

One NRA (NCAH) that has declared effective competition also used this criterion. It noted that all operators provide large scope of services and thus none of them has specific advantage.

3. Vertical integration

This criterion has been used by all NRAs that have found SMP, except ComReg, as well as by NRAs that have declared the market competitive.

This criterion was used to assess SMP since vertical integrated operators control the network and associated facilities, produce different products at different levels and compete with the other operators on many products in different levels in the value chain. All the SMP operators have a strong position also on the retail markets regarding access products and telephone services offered to end users.

One NRA (ARCEP) also mentioned that as the incumbent has SMP on call origination and call termination, it can exert a leverage on transit services since those services must be completed with origination and termination services for ensuring global connectivity.

2 NRAs (NCAH, RTR) that have found no SMP operator explained that all operators acting on this market are vertically integrated and therefore the incumbent does not have any exclusive advantage.

4. Size of the undertaking

This criterion has been used by 5 NRAs that found SMP (AGCOM, ANRC, ComReg, NITA and BNETZA). They stated that new entrants lack both spare capacity and necessary ubiquity to enter the market.

One NRA (ComReg) also mentioned that new entrants do not have the billing, account management and similar ancillary systems that would be necessary to sell services to wholesale customers.

5. Infrastructure not easily duplicable

3 NRAs that have found SMP operators used this criterion (BNETZA, FICORA and PTS) whereas one NRA that has declared the market competitive (RTR) also used it.

To assess SMP, NRAs mentioned that alternative operators would need to make sufficient investments and high sunk costs to get control over their own infrastructure.

RTR on the other hand stated that in this market, infrastructures were duplicable since the number of POIs where alternative operators are present is increasing (decision vetoed).

6. Lack or absence of countervailing buying power

This criterion was used by 3 NRAs that have found SMP operators (ANRC, NITA and ARCEP) and by 2 that have concluded to effective competition (Ofcom and RTR).

On the one hand, ARCEP mentioned that potential competition is limited by traffic volumes. High economic barriers (and economic risks) to enter the transit services market exist, mainly to interconnect the incumbent and OLO's local switches. NITA mentioned that significant sunk costs are high barriers to entry.On the other hand, RTR explained that entry to market was easy thanks to leased lines.

7. Barriers to entry

This criterion was used by 3 NRAs that have found SMP operators (ANRC, NITA and ARCEP) and by 2 that have concluded to effective competition (Ofcom and RTR).

On the one hand, ARCEP mentioned that potential competition is limited by traffic volumes. High economic barriers (and economic risks) to enter the transit services market exist, mainly to interconnect the incumbent and OLO's local switches. NITA mentioned that significant sunk costs are high barriers to entry.On the other hand, RTR explained that entry to market was easy thanks to leased lines.

8. Other criteria

Some NRAs that have found SMP also used the following criteria:

- Barriers to expansion and to switch
- Products and services diversification. Pts mentioned that the incumbent offers transit services together with terminating and originating and thereby strengthen its market power on the market for transit services.

NRAs that have concluded to effective competition also used size of the market criteria and prices trends. OFCOM indeed mentioned that prices have fallen in response to competition.

II.4 Types of data used

Most NRAs used data from questionnaires sent to operators.

Data used are mainly:

- Retail fixed network traffic
- Wholesale fixed network traffic
- Prices of transit services
- Traffic revenues
- Coverage of networks
- Payment flows

- Market shares
- Data on minutes sold and bought in this market
- Connectivity of operators

II.5 Remedies

II.5.1 SMP operators from a same country have been imposed the same set of remedies

7 NRAs found SMP operators[2] and have imposed remedies. 6 of them found only one SMP operator and FICORA designated 13 operators as SMP.

In Finland, all the 13 operators have been imposed the same set of remedies.

For market 10, there was not any difference in the way of regulating SMP operators within one member States.

II.5.2 Remedies imposed are homogeneous

Regulation is quite homogeneous since six NRAs have imposed the whole set of remedies of articles 9,10,11,12,13 to the SMP operator.

The only exception is FICORA that has decided to impose remedies from articles 9, 10 and 12 and therefore neither article 11 nor article 13 were imposed. FICORA imposed the remedies on 13 operators and continues to monitor their pricing and competitive situation on the regional transit markets. If the competitive situation on the markets so requires, FICORA may later amend the remedies imposed on the operators. BNetzA imposed the following obligations on DTAG: art. 9 (obligation to publish a reference offer), art. 10, art. 12, art. 13 obligation, but no obligation acc. to art. 11 (final decision issued on 5th Oct. 05).

II.5.3 Competitive problems addressed

The remedy of article 9 is a supporting remedy for external non-discrimination. The negotiations and agreements regarding interconnection are time consuming together with the fact that operators need technical and business information from the SMP operator. The obligation is necessary for the promotion of interconnection negotiations and to supervise whether the interconnection terms are reasonable and non-discriminatory.

The remedy of article 10 is imposed to prevent vertical leveraging by price and internal non price discrimination, to avoid the risk of giving more favorable terms to the internal organization and subsidiaries of the SMP operator.

The remedy of article 11 is enabling transparency, non discrimination and preventing excessive pricing or price squeeze, it is imposed to guarantee

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[2] ANRC, COMREG, PTS, BNETZA, ARCEP, FICORA and AGCOM.

wholesale price transparency and to impede unfair cross-subsidy among the integrated company (the SMP operator) and the alternative operators.

The remedy of article 12 is imposed to prevent the risk of leveraging by denial of access, excessive pricing, and margin squeeze.

The remedy of article 13 is imposed to prevent excessive pricing, margin squeeze.

II.5.4 Specific content of obligations

1. **Article 9 remedy**

All NRAs have imposed publication of RIO under article 9, except FICORA that only imposed the publication of delivery terms and tariffs information.

Two of them (ARCEP and PTS) precise that they have imposed on the incumbent the obligation to respect a reasonable delay before any modifications to its RIO can enter into force, in order to allow other operators to adapt themselves to the new terms.

In France, the SMP operator must also inform ARCEP every time it signs a new interconnection contract or modify an existing one.

2. **Article 10 remedy**

All NRAs apply article 10 the same way: non discrimination is imposed on all necessary technical, legal and economic parameters. It covers all items included in the RIO.

AGCOM also specified that this obligation implies that internal transfer of the SMP operator must be done under the same conditions as defined in the RIO.

3. **Article 11 remedy**

FICORA and BNetzA decided not to impose it.

Concerning the other NRAs, two have decided to make a specific public consultation on that remedy: ARCEP and COMREG. ARCEP has decided to maintain the former obligation in the meantime (separated accounts were the following: interconnection, PSTN, access (local loop), leased lines, PATS, other).

ARNC mentioned that it has defined the following accounts: Core Network Business (Interconnection Sub-business, Leased Lines-core Sub-business, Other Activities of Core Network Sub-business), Access Network Business, Retail Business, Other Businesses – all the activities not included in the previous accounts. Each account has sub businesses accounts and within each sub businesses the following information are required: operating expenses, depreciation, capital costs, other costs, average capital employed, investments, personnel, number of lines.

4. Article 12 remedy

Remedies imposed under article 12 are also quite similar. NRAs have indeed decided to impose interconnection and access obligations. ARCEP and ARNC mentioned that access to connected services are also imposed like collocation, backhaul…Finally PTS mentioned that the SMP operator has also to provide leased lines for interconnection.

5. Article 13 remedy

Concerning article 13 remedy, except for FICORA that did not impose such a remedy, all NRAs have imposed cost orientation and applied the LRIC method.

ARCEP has made a distinction within market 10 between different types of traffic that are not regulated the same way. Inter territories transit services must be cost oriented. Concerning intra territory transit services, only squeeze and excessive prices are forbidden for the SMP operator. This lighter obligation is necessary in order to encourage other operators to develop their own infrastructure. Nevertheless, for some intra territory transit services, this operator must also provide cost oriented tariffs, like for transit services from and to alternative operators networks or some Internet services, and also for regional transit (single tandem exchange) until 1st January of 2007.

III COMPARATIVE ANALYSIS ON ISSUES RELATED TO MARKET 11 OF THE RECOMMENDATION

III.1 Summary of answers

Table 3. Summary of market 11

	Summary of answers				Decision Status				Result of Market Analysis
	Answers	Market Def.	Market Analysis	Remedies	Final Decision	Notif. Process	National Consult.	Vetoed	
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ARCEP (France)	X	X	X	X	X				Single SMP
BNETZA (Germany)	X	X	X	X	X				Single SMP
ComReg (Ireland)	X	X	X	X	X				Single SMP
FICORA (Finland)	X	X	X	X	X				Single SMP
OFCOM (UK)	X	X	X	X	X				Single SMP
PTS (Sweden)	X	X	X	X	X				Single SMP
RTR (Austria)	X	X	X	X	X				Single SMP
NCAH (Hungary)	X	X	X	X		X			Single SMP
NITA (Denmark)	X	X	X	X		X			Single SMP
AGCOM (Italy)	X	X	X	X			X		Single SMP
NPT (Norway)	X	X	X				X		Single SMP
OPTA (Netherlands)	X	X					X		
APEK (Slovenia)	X								
BIPT (Belgium)	X								
CMT (Spain)	X								
CRC (Bulgary)	X								
EETT (Greece)	X								
MCA (Malta)	X								
PTA (Iceland)	X								

RRT (Lithuania)	X								
SIDEAMET (Estonia)	X								
SPRK (Latvia)	X								
URTiP (Poland)	X								
OCTPR (Cyprus)	X								
CTU (Czech Republic)	X								
TUSR (Slovakia)									
ILR (Luxemburg)									
Total	**27**	**14**	**13**	**12**	**9**	**2**	**3**	**0**	

III.2 Market definition

III.2.1 Commission Definition

Wholesale unbundled access (including shared access) to metallic loops and sub-loops for the purpose of providing broadband and voice services.

III.2.2Definition by products

1. **Products included**

Most of the NRAs include copper paired local loops, sub-loops and shared access or use more general definition for unbundled access.

- Copper paired local loop: RTR, NITA, FICORA, ARCEP, BNetzA, NCAH, NPT, ANACOM, ANRC, PTS;
- Sub-loops: NITA, FICORA, ARCEP, BNetzA, NCAH, AGCOM, ANACOM;
- Shared access: NITA, FICORA, ARCEP, NCAH, AGCOM, NPT, ANACOM;
- Wholesale unbundled access/full unbundling (more general definition): ComReg, Ofcom, AGCOM;
- Access to collocation/sites for the minor equipment needed: NITA, FICORA;
- Cable based local access: Ofcom

- Administrative full unbundled access (specific national circumstances, it facilitates the possibility for national suppliers to deliver broadband access service to end-users): NITA

- Line sharing: BNetzA

- Bundled access under exceptional circumstances: BNetzA

2. Products considered as potential substitutes and excluded

- Cable: RTR, FICORA, ARCEP, BNetzA, NCAH, ComReg, NPT, ANRC, OPTA;

- Alternative technologies (other than cable): RTR, FICORA, ARCEP, BNetzA, ComReg, AGCOM, NPT, ANRC, PTS, Ofcom, OPTA

- Bitstream/Wholesale broadband access: RTR, ARCEP, NCAH, ComReg, ANACOM, ANRC, AGCOM, NPT

- Terminating segments of leased lines: NPT, ANRC, PTS

- Mobile: Ofcom

- Radio local loop: ARCEP

3. Conclusions

The definition of the relevant market does not seem to differ materially from one NRA to another. Only Ofcom included cable-based local access in its market definition. Two NRAs (NITA, FICORA) stated explicitly that they included access to collocation into their market definition.

In considering possible substitutes, the majority of NRAs examined mainly as possible substitutes: cable networks, alternative technologies (FWA, optic fibre etc) and wholesale broadband access.

NRAs considered their market definition as not deviating from the Commission definition except of 3 NRAs: NITA, BNetzA and Ofcom.

NITA deviated from the definition of the Commission Recommendation in the sense that defined the relevant market as including also the “administrative full unbundled access”. NITA did not receive any comments from the Commission.

NCAH defined the relevant product market as not including local loops which are not in use (i.e. local loops over which no active service is provided). The Commission stated that “unless it is technically not possible or economically not viable to unbundle a particular local loop that has been out of use, “out of use” loops should be included in the relevant market, and made subject to the remedies proposed for local loops in use.”

Ofcom included cable-based wholesale services in the relevant product market. The Commission stated that defining a wholesale market on the basis of the competitive conditions in the corresponding retail markets is not in principle inconsistent with the Recommendation and the SMP Guidelines. The Commission did not fully agree with Ofcom's wide market definition. However, the Commission considered that the exact scope of the market is not relevant in this case for the purposes of SMP assessment."

III.2.3 Geographic definition

11 regulators defined the relevant geographic market as national: RTR, NITA, ARCEP, BNetzA, ComReg, AGCOM, NPT, ANACOM, ANRC, PTS, OPTA

3 regulators divided the relevant market into different regional markets: FICORA, NCAH, Ofcom

III.3 Market analysis

III.3.1 Main Issues Arising

Table 1 below summarises the NRAs' responses to the questions in relation to the main issues that arose in the assessment of SMP in this market:

Table 4. Main issues arising

Issue	Yes	No
a) Indirect pricing constraint/self supply	6 = NCAH, ANACOM, Ofcom, RTR, AGCOM, PTS, NITA	6 = Ficora, ARCEP, ANRC, BNetzA, NPT, Comreg ,
b) Potential competition/supply-side substitution	7 = NPT, ANRC, Ficora, NCAH, Ofcom, PTS, Comreg, NITA	5 = ANACOM, BNetzA, ARCEP, AGCOM, RTR
c) Assessing market power absent regulation	2 = NPT, Ofcom	10 = AGCOM, Ficora, NCAH, ANACOM, PTS, Comreg, ANRC, BNetzA, ARCEP, NITA
d) Forward-looking assessment of SMP vs backward looking assessment of dominance	5 = Ficora, Ofcom, RTR, Comreg, NPT	7 = NCAH, ANACOM, PTS, ANRC, BNetzA, ARCEP,. AGCOM, NITA
e) Assessment of market power in closely related markets	4 = NPT, RTR, Ficora, PTS	8 = AGCOM, Comreg, NCAH, ANACOM, ANRC, BNetzA, ARCEP, Ofcom, NITA
f) Other		

These issues are discussed in turn below.

1. **Indirect pricing constraint/self supply**

As the table shows, self-supply was an issue for half the NRAs. Self-supply was considered an issue due to the inclusion of the supply of copper pairs by vertically integrated incumbents to their own downstream arms.

Ofcom took the indirect pricing constraint provided by self-supply into account, but noted that where there is an assumption of absence of regulation and where direct competition takes place only at the retail level, then the constraint would be weaker.

2. Appropriate identification of supply side substitution and potential competition

Generally NRAs noted the significant sunk costs and economies of scale and density associated with entry into this market, which meant the scope for potential entry was limited.

Some NRAs did not note this as an issue, presumably not because the scope for potential entry was not assessed, but because the intended focus of this question was not at issue. That is, the decision as to whether to consider possible substitutes as supply-side substitution or potential entry was not contentious.

3. Assessment of market power 'absent regulation' - e.g., in retail markets with existing wholesale regulation

As the table shows, this was seen as a major issue for only two NRAs. NPT noted that its starting point, in accordance with the guidelines, was to assess the market absent regulation. This was brief and theoretical, as no empiric knowledge is available.

4. Forward-looking assessment of SMP versus backward-looking competition law assessment of dominance

This issue relates to the use of 'prospective' analysis and the ongoing sustainability of the market power, which can be contrasted with the requirement under competition law to establish dominance over a different relevant time period, namely the period over which the abuse took place.

This was an issue faced by 5 NRAs in their SMP assessment. NRAs generally adopted a forward-looking approach to their assessment. The running theme here was that the economic characteristics of the infrastructure meant that the bottleneck was likely to be sustainable in the long term. In this regard, Comreg noted that sunk costs and network effects rendered economic replication highly unlikely. RTR noted no downward trend in market shares. NPT noted cooperation with its NCA on this issue.

5. Assessment of market power in closely related markets

This issue is concerned with whether market power in closely related markets was a factor in the assessment of SMP in this market. The significance is that market power in horizontally or vertically related markets can potentially be leveraged into the transit market, thereby heightening the chance of finding SMP.

This was an issue considered by 4 NRAs. Generally the theme was that the fixed incumbent operator has a strong position in horizontally or vertically related markets, which could be problematic. For example, PTS considered the market power its incumbent operator could potentially exert on markets such as leased lines and bitstream access. NPT noted the close links with market 12.

III.3.2 Most Important Criteria

The criterion used by almost all NRAs (except one) was *market shares*. Indeed, most NRAs found market shares of 100%. One NRA (BNetzA) found market share of more than 90%, while another NRA (FICORA) found market share of more than 95% of the local loop products

Another criterion, generally used, was *control of infrastructure not easily duplicated*. Other criteria were: barriers to entry, barriers to expansion, vertical integration, economies of scale and scope, absence of/low countervailing buyer power, and overall size of the undertaking.

According to PTS the number of metallic based access lines, 99% of which is provided by TeliaSonera is an indication of market power. Also the technique that this network is built is not difficult to get or to duplicate, but the difficulty relates to establish the network.

NCAH found that each operator has 100% market share in each relevant numbering area. Only one vendor, the earlier concession holder operator in each area can efficiently provide the service and a new vendor cannot enter the market.

BNetzA found market share of more than 90% and mentioned that it is not possible for the competitors to duplicate networks. Also DT AG controls the biggest network.

NPT mentioned the very high market shares and almost non-changing despite the opening of competition. Each SMP operator has control over the network in the traditional operating area that gives a competitive advantage not only in local loop products but other products and services also. Also each SMP operator is vertically integrated and has a strong position on the retail market (access products and telephone services provided to end-users). Construction of a competing network is not economically feasible due to high costs and long construction time. Only feasible alternative will be leasing local loop products from the SMP operators.

According to ComReg there are 100% market shares and high barriers to entry, since entry would require significant investment. No large purchaser of wholesale unbundled access has credible alternatives to incumbent.

ARCEP found that France Telecom holds more than 99,99% of the maket shares. Any new operators won't benefit same advantages as France Telecom had at the time the local loop was built as high level of subsrcription, high level on investments etc.

ANRC and ANACOM mentioned also the 100% market shares with no evidence of downward trend.

RTR found too market share of 100% with no downward trend, high barriers to entry and the lack of alternative infrastructure and the vertical intgration of the incumbent, with no “big” customer in sight.

AGCOM found that Telecom Italia’s market shares are declining but at a very slow pace. The build up of a new network is extremely expensive. Even if the two major buyers of ULL services account for 96% of Telecom Italia’s sales, there are no alternatives to Telecom Italia.

Ofcom mentioned the high and growing market shares of BT, the existence of significant sunk costs because of which economies of scale / density are important. And the fact that access networks can be used to support other telecommunications services. Customers do not have a credible threat to move away from BT.

As a conclusion, it can be said that, there was a high degree of uniformity amongst the responses, reflecting the relative similarity of the markets and their characteristics across member states.

III.4 Types of data used

Most NRAs used data from questionnaires sent to operators.

Data used are mainly:

- Number of local loops/wholesale access lines
- Number of retail access lines
- Number of MDFs
- Monthly and connection fees of local loops
- Data on cable television networks (e.g. coverage, capacity)
- Revenues from wholesale access services
- Investments on wholesale access services

III.5 Remedies

III.5.1 SMP operators from a same country have been imposed the same set of remedies

Eight NRAs (RTR, ANRC, ANACOM, ARCEP, ComReg, NITA, BNetzA, PTS, AGCOM found one SMP operator in the market, and three NRAs (NCAH, FICORA, OFCOM) found one SMP in each regional market.

III.5.2 Remedies imposed are homogeneous

The whole set of remedies of art 9 (obligation of transparency)*, art 10* (obligation of non-discrimination)*, art 11*(obligation of accounting separation)*, art 12* (obligation of access to, and use of, specific network facilitites)*, art 13* (price control and cost accounting obligations) *was imposed to the SMP operators by all NRAs, except of one NRA (BNetzA) which did not impose the remedy of art 11.*

III.5.3 Competitive problems addressed

Many NRAs (RTR, ANRC, ANACOM, ARCEP, ComReg, NCAH, NITA, FICORA) considered the remedy of **art 9** as a supporting remedy for non-discrimination. Along the same lines BNetzA imposed this remedy in order to prevent quality discrimination, to facilitate market entry and activities which otherwise are hampered if the conditions for access and interconnection are unclear and OFCOM imposed this remedy in order to assist transparency for monitoring anti-competitive behaviour and to give visibility to terms and conditions on which other providers will purchase wholesale services.

The remedy of **art10** is imposed by all the NRAs in order to prevent vertical leveraging by non-price discrimination, to ensure that the SMP operator does not discriminate in favor of its own retail arm.

The remedy of **art11** is considered by RTR and ANRC as a supporting remedy for price control and cost accounting, while it is imposed by ANACOM, NCAHNITA, AGCOM, PTS in order to prevent price discrimination and cross-subsidisation, predatory pricing, price squeeze and provide greater certainty about the cost base, and in general to prevent competition distortion behavior by pricing means.

The remedy of **art 12** is imposed by RTR, ANRC, ANACOM, in order to prevent vertical leveraging by denial of access, it is imposed by ARCEP because of control of infrastructure not easily duplicated, it is imposed by ComReg because it is unlikely that access can be achieved voluntarily, it is imposed by BNetzA because vertical integration poses the danger of excessive pricing at the wholesale level, it is imposed by NCAH, FICORA, OFCOM, NITA to prevent denial of access

The remedy of **art13** is imposed by RTR, ANRC, ANACOM, ARCEP, ComReg, BNetzA, NCAH, PTS, AGCOM, FICORA, to prevent excessive pricing, margin squeeze, bundling of products and discriminating pricing.

III.5.4 Specific content of obligations

1. **Article 9 remedy**

ANRC, NCAH, BNetzA, ANACOM, NITA, PTS, OFCOM, AGCOM: publication of reference offer

ARCEP: publication of reference offer, publication of preliminary information (list of MDFs etc), obligation of SLAs, publication of QoS indicators, transmission of access contracts

FICORA: the delivery terms and tariff information on local loop products and services necessary for the technical implementation, the delivery terms and tariff information shall be published on the SMP operator's web site and they should also be available to other operators on a printed document

As it is shown above, the publication of reference offer was asked by all NRAs except of one.

2. **Article 10 remedy**

<u>ANRC, RTR</u>: all technical, legal and economic parameters

<u>ANACOM</u>: wholesale offer conditions (prices and QoS)

<u>ARCEP</u>: all items and in particular: operational process – introduction of new technologies

<u>ComReg</u>: the SMP operator must apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and information to others under the same conditions and of the same quality as of its own retail arm

<u>BNetzA</u>: the SMP operator is obliged to base access and co-location agreements on objective criteria, to be transparent, to grant equally good access and to meet the requirements of fairness and reasonableness.

<u>PTS</u>: obligation not to unduly discriminate

<u>FICORA</u>: the delivery terms and tariff information on local loop products and services necessary for the technical implementation

<u>NITA</u>: The SMP operator must apply equal conditions offered to other businesses who offer equal services on equal terms and offer services and conveys information to others on the same terms and of the same quality as services that are offered to the SMP themselves and the SMP operator themselves and the SMP operators subsidiaries or partners.

3. **Article 11 remedy**

RTR: for revenues, expenditures (operating expenses, depreciation, capital costs, other costs), average capital employed, investments, personnel, number of lines

ANRC: revenues, operating expences, depreciation, capital costs, average capital employed, investments, personnel, number of lines

ANACOM: retail and wholesale activities

ARCEP: public consultation in progress

ComReg: there will be public consultation, the NRA intends to implement accounting separation on a by service and/or produce basis

NCAH: divisions of access network, core network, retail and other activities: a) separated accounting reports should reflect real revenues and costs of the divisions and the invested capital, b) divisions' reports should contain those transfer costs and transfer revenues occurring when a given division uses the service of another division

FICORA: the operator shall separate in its accounts the functions that concern leasing out of access rights as a whole from the other service provision activities of the operator.

NITA: Setup of a contractual interconnection interfaces between departments, subsidiaries etc. services/products in the market should be broken down into more detailed information (individual turnover, balance accounts, description of the most important norms of distribution, etc.), establishments of which if neccessary reporting of accounting information for markets that are not covered by an SMP obligation of accounting separation – including transparency of the distribution of overhead costs and consolidation with SMP operator's annual accounts, as well as reporting and verification of accounts – including demands with regard to publishing and revision

A differentiation in the level of detail of accounting separation appears to exist among the NRAs.

4. Article 12 remedy

RTR, ANRC: access on reasonable request to local loop including shared use, parts of the local loop and necessary other services like co-location and necessary information

ANACOM: access to local loops and subloops and to associated facilitites

ARCEP: full and shared access to local loop and to the sub-loop- options for residential and non-residential offers (SLA, etc.)- reactivation of inactive lines- migration offers- full LLU synchronized with number portability- equipments colocation (with mutualisation enabled)- distant location- access to ressources between OLO's POP and MDFs : capacity offer, optical fiber, etc.- access to preliminary information

BNetzA: obligation to grant access to the unbundled local loop (including line sharing), to grant access to the bundled local loop and to co-location in necessary scope and to enable cooperation among competitors when co-locating.

NCAH: access to network elements, services and facility sharing

PTS: obligation to provide wholesale full unbundled access and shared access including associated network facilities on reasonable request, irrespective of the services provided to the end-user. Obligation to provide co-location associated with the provision of unbundled access.

FICORA: obligation to provide access to a fixed telephone network local loop or part of it, part of local loop capacity for shared use and equipment facilities if this is necessary for the purposes of installing minor equipment items for using a local loop. Operator who has gained access right or its representative is allowed to enter the equipment facilities for necessary installations and maintenance

NITA: access on reasonable request to local loop including shared use, parts of the local loop, administrative full unbundled access and necessary other services like collocation.

5. Article 13 remedy

RTR: cost orientation based on FL-LRAIC

ANRC: retail minus

ANACOM: cost orientation, costs estimated based on the SMP operator's accounting system which is audited yearly

ARCEP: cost orientation (for access and connected services)

ComReg: cost-orientation, FL-LRIC

BNetzA: the rates must not exceed the costs of efficient service provision

NCAH: cost orientation, FDC cost model (approved by the NRA)

PTS: cost orientation based on LRIC model

AGCOM: network cap, FDC historic cost accounting

FICORA: cost orientation, the SMP operator may select the accounting procedure it uses

OFCOM: LRIC cost plus charge ceilings

NITA: cost oriented prices, LRAIC and modified historical cost method.

As it is described above, all of the NRAs (except of one) imposed the remedy of cost orientation. For cost orienation the costing methodology preferred by most of them was FL-LRIC.

As a conclusion, a great degree of uniformity appears to exist in the proposed remedies across the NRAs.

IV COMPARATIVE ANALYSIS ON ISSUES RELATED TO MARKET 12 OF THE RECOMMENDATION

IV.1 Summary of answers

Table 5. Summary of market 12

	Summary of answers				Decision Status				Result of Market Analysis
	Answers	Market Def.	Market Analysis	Remedies	Final Decision	Notif. Process	National Consult.	Vetoed	
ANACOM (Portugal)	X	X	X	X	X				Single SMP
ANRC (Romania)	X	X	X		X				Emerging market
ARCEP (France)	X	X	X	X	X				Single SMP
ComReg (Ireland)	X	X	X	X	X				Single SMP
FICORA (Finland)	X	X	X	X	X				Single SMP
OFCOM (UK)	X	X	X	X	X				Single SMP
PTS (Sweden)	X	X	X	X	X				Single SMP
NITA (Denmark)	X	X	X	X		(X)			Single SMP
NCAH (Hungary)	X	X	X	X		X			Single SMP
AGCOM (Italy)	X	X	X	X			X		Single SMP
BNETZA (Germany)	X	X	X				X		Single SMP
NPT (Norway)	X	X	X				X		Single SMP
OPTA (Netherlands)	X	X					X		Single SMP
RTR (Austria)	X	X					X		Single SMP
APEK (Slovenia)	X								
BIPT (Belgium)	X								
CMT (Spain)	X								
CRC (Bulgary)	X								
EETT (Greece)	X								
MCA (Malta)	X								

PTA (Iceland)	X								
RRT (Lithuania)	X								
SIDEAMET (Estonia)	X								
SPRK (Latvia)	X								
URTiP (Poland)	X								
OCTPR (Cyprus)	X								
CTU (Czech Republic)	X								
TUSR (Slovakia)									
ILR (Luxemburg)									
Total	**27**	**14**	**12**	**9**	**7**	**2**	**5**	**0**	**13**

IV.2 Market definition

IV.2.1 Commission Definition

Before delving into a discussion and comparative analysis of the market definitions adopted by NRAs for market 12, it is useful to note the ‘anchor point’ i.e., the Commission’s broad definition of this product market:

> *Wholesale broadband access.*
>
> *This market covers ‘bit-stream’ access that permit the transmission of broadband data in both directions and other wholesale access provided over other infrastructures, if and when they offer facilities equivalent to bit-stream access*

IV.2.2 Definition by products

1. **Products included**

Most of the NRAs (NITA, FICORA, ARCEP, BNetzA, AGCOM, ANACOM, NPT) use a general definition of the market, with the rest having a detailed list of products included in the market definition. In general, NRAs defined the product market as some kind of bitstream service. Thus at a broad functional level, their definitions were consistent with the Commission’s definition. The main issue, however, was in respect of the technology underlying the functionality. All NRAs included DSL bitstream in their market definitions.

The main question was whether or not a bitstream-type service self provided by cable networks was included alongside DSL in the product market. Five NRAs considered that cable formed part of the relevant market: RTR, BNetza, ComReg, ANACOM and Ofcom. The Commission generally considered in its responses that the inclusion of cable within the relevant market constituted a substantive deviation from the recommended product market. Whilst the recommended market definition is, formally, technologically neutral, the stipulation of *"if and when they offer facilities equivalent to bit-stream access"* appears to be the point of contention, since cable networks do not currently provide wholesale access. The NRAs argued, however, that the assumption of the absence of regulation would mean that bitstream would be unlikely to be offered even over DSL networks. BNetzA defined two bitstream access markets (one bitstream access market with handover at IP level, one bitstream access market with handover at ATM level). BNetzA includes wholesale broadband access via cable networks only in one bitstream access market: "IP bitstream access market". BNetzA sees 1. potential demand side substitutability between wholesale broadband access via cable-network and IP-bitstream access at wholesale level and 2. substitutability of broadband access products at retail level.

Indeed, in the case of BNetZA, the absence of a whole bitstream service in Germany meant that it had to hypothesise the existence of such a market. In this case, substitutability of the two services at the retail level was also examined, and it was concluded that DSL and cable were in the same retail market. A wholesale provider of DSL access would then be constrained from raising its prices due to the threat of switching by the corresponding consumers to cable broadband once the wholesale price rise fed through into retail prices. This constraint is stronger to the extent that wholesale input costs (wholesale prices) represent a proportion of the retail price. Given this proportion is significant, and the retail products sufficiently substitutable, a wholesale DSL provider is therefore constrained by the presence of cable broadband at the retail level and the potential offer of wholesale broadband access via cable network, hence placing both wholesale products in the same market.

The Commission disagrees with this approach, and prefers to take account of cable's competitive impact in the analysis of SMP, namely as a form of potential supply-side entry. In most cases, however, the inclusion or exclusion of cable in the wholesale market had no impact on the ultimate findings of SMP. Therefore, the Commission did not use its veto powers. In the case of PTS, however, cable was initially included in the market but was subsequently excluded in the final notification as it recognised, in accordance with the Commission's view, that cable operators did not currently provide an equivalent bitstream access service.

The issue of alternative technologies was not confined to cable, however. Various other technologies were included in the market, as follows: RTR (WLL/W-LAN/WiFi, FTTH internal sales), ComReg (FWA), NPT, ANRC (optical fibre, radio local loop), PTS (FTTH "bit-stream access lines" internal sales) , AGCOM (fibre optic, satellite), NITA (ATM-transmission).

Also technically, different delivery interfaces (ATM, IP) were included by ARCEP, BNTEZA, and technical equipment needed for providing internet access was included by FICORA and ANRC. ComReg was of the view that bitstream also includes the IP network, in Ireland ATM and IP access points generally occur at the same location and the wholesale products are functionally and priced similar. In FICORA's case the Commission stated that because FICORA's definition excludes the access link to the customer premises in the PSTN network, it constitutes a deviation from the Recommendation.

Two NRAs defined two separate products markets. OPTA distinguished markets for wholesale broadband access according to the quality and technological structure of the network. Notably, on the basis of contention ratio, cable was included in the lower quality market. Ofcom was unique in making a distinction between broadband origination and broadband conveyance.

2. Products considered as potential substitutes and excluded

Cable was considered but excluded by NITA, ARCEP, NCAH and (ultimately) PTS.

Other alternative technologies were excluded by RTR (PLC, 3 G, satellite, W-LAN hotspots), NITA (cable TV networks, optical fibres, W-LAN), ARCEP (satellite and fibre), BNETZA (fibre), NCAH (cable TV networks, wireless broadband accesses), PTS (PLC, cable TV networks, fixed wireless networks, W-LAN, satellite, digital terrestrial broadband networks and local areas), ComReg (Fibre To The Home (FTTH), satellite, mobile access).

Other products excluded:

- Leased lines: RTR, NITA, NPT, ANRC, PTS;
- Full LLU / shared access: RTR, NITA, FICORA, ARCEP, BNETZA, NCAH, ComReg, AGCOM, NPT, ANACOM, ANRC;
- Narrowband: FICORA, BNETZA, ANRC, Ofcom, ARCEP, ComReg;
- Symmetric: Ofcom;
- Broadband conveyance: BNETZA;
- Resale access and/or conveyance: BNETZA, NPT, Ofcom, ARCEP;
- Internal sales: FICORA.

3. Conclusion

The above highlights the main differences amongst the NRAs in respect of the definition of the relevant market. Notably, whether or not cable is in the market is a major difference, as is whether alternative technologies are included. BNETZA and Ofcom appear to disagree on the issue of broadband conveyance. FICORA appear to exclude internal sales, whereas these were included by all other NRAs. Whether these differences reflect different national circumstances, differences in conceptual approach, or other influences is not entirely clear. However, the interests of harmonisation would appear to be best served by a convergence of approach on the analysis of these markets, leaving only market developments specific to the member state as the main/sole explanation for differences of market definitions across NRAs.

IV.2.3 Geographic definition

11 NRAs defined the relevant geographic market as national: RTR, NITA, ARCEP, BNETZA, ComReg, AGCOM, NPT, ANACOM, ANRC, PTS, OPTA.

3 NRAs divided the relevant market into different regional markets: FICORA, NCAH, Ofcom.

The reason for this divergence appears to be national circumstances rather than analytical approach. In particular, the geographic scope of the market was given by the coverage of the relevant networks. In the cases of geographic segmentation, the coverage of the networks was not national; the markets corresponded to the geographic areas of coverage.

IV.3 Market analysis

Table 5 provides an overview of the findings on market analysis. Notably, single dominance was found in all markets with the exception of Romania where the market was found by ANRC to be an emerging market, and therefore not one appropriately regulated on an ex ante basis.

IV.3.1 Main Issues Arising

1. **Indirect pricing constraint/self supply**

Self supply of wholesale products (e.g. the provision of services by a vertically integrated operator from the wholesale division to the retail division for the delivery of retail services) was taken into account when calculating market shares by 8 NRAs (Ofcom, NITA, NCAH, ComReg, AGCOM, NPT, ANACOM, & PTS). Wholesale market share was calculated by the number retail broadband access paths per operator.

It was not taken into account by 4 NRAS (ARCEP, FICORA, BNETZA, ANRC). ARCEP noted that it did not take self supply into account when computing market shares, but did take it into account as a major additional element to assess SMP.

2. **Appropriate identification of supply side substitution and potential competition**

NRAs generally assessed the effect other broadband products (e.g. cable, new emerging technologies satellite, mobile, fibre) had on the provision of bitstream/DSL products. In many countries these products were being provided at the retail level only. The question many NRAs had to address was whether the competitive constraint imposed by these technologies would justify their inclusion in the wholesale market definition (via indirect pricing and self-supply) or at the market analysis stage (via potential competition).

Where products were not included in the market definition, it was then appropriate to assess these technologies under market analysis, specifically potential competition. 8 NRAs noted that the appropriate identification of supply side substitution and potential competition was an issue which arose in assessing market power in the market for WBA. Issues arose in relation to:

- The decision of where to consider whether competitive constraint of the product/service – e.g., as supply side substitution or potential competition.

- Proving the presence/absence of potential competition.

FICORA, BNETZA, NCAH, NITA, COMREG, NPT, ANRC, PTS, OFCOM identified this as being an issue. ComReg took the view that despite there being a number of technologies available for the purpose of broadband delivery, the current review will focus primarily on xDSL, cable and FWA services as these are the most widely used and actively utilised services in Ireland. The take up of these alternative broadband services (e.g. Fibre To The Home (FTTH), satellite, mobile access) is less than one percent of the total market for wholesale broadband access. ComReg therefore concluded that even in aggregate these technologies do not impose a competitive constraint at the moment and are not expected to do so within the timeframe of the review. ComReg also concluded that these platforms should be considered in the context of potential competition rather than supply-side substitutes. ComReg took the view that the incumbent was likely to continue to provide the significant majority of WBA services during the timeframe of this review, because it did not believe that any new entrant was intending to, or would be able to, successfully build a new access network (capable of supplying such services) replicating all or part of eircom's network, or that sufficient investment would be made in existing infrastructure to upgrade it to the point at which it is able to support the provision of broadband access. ComReg concluded that the competitive constraint imposed by cable and FWA was more significant and thus this was included in the market under supply side substitution.

The apparent conceptual divergence on market definitions across NRAs may be explained by how NRAs chose to consider the competitive impact of these newer technologies. As can be seen, some NRAs opted to place the products in the same market, whilst most considered that the appropriate place to assess their impact was at the stage of market analysis via potential competition. The ultimate outcome was the same irrespective of the approach taken, with all NRAs (bar ANRC) finding single SMP in this market. This may provide some comfort that the analytical tools are a means to an end, and that NRAs' different approaches to these tools do not significantly affect the substantive outcome of whether SMP or effective competition is found.

3. Assessment of market power 'absent regulation' - e.g., in retail markets with existing wholesale regulation

This was an issue for 2 NRAs (NPT, Ofcom.) As discussed under market definition, the assumption of absence of regulation is a complicated issue in this context, since it was argued by some NRAs that a DSL bitstream would not be likely to exist absent regulation.

However for a number of NRAs it was not an issue as there was no previous regulation in this market (e.g. FICORA, PTS).

Overall, whilst this was a major issue for market definition as discussed above, it appeared less of an issue for market analysis.

4. Forward-looking assessment of SMP versus backward-looking competition law assessment of dominance

This relates to the use of ‘prospective’ analysis & sustainability of dominance.

This was an issue faced by only 4 NRAs: (FICORA, NCAH (which found that the market in Hungary was expanding rapidly), COMREG, NPT). FICORA noted that so far the use of alternative technologies for providing broadband services is limited, however, the competitive situation may require a new analysis in the short term. For NCHA, it was necessary to examine the forward looking aspects because the broadband market is expanding rapidly. Therefore it considered infrastructure development plans. NPT consulted with the relevant NCA on this issue.

Taking a forward looking perspective, in defining the market, ComReg included the self supply of cable and FWA. It was evident that at the time of the review, these platforms were not in a position to exert significant competitive constraint on the incumbent. In total they provided approximately 20% of retail broadband subscribers and networks were able to offer broadband services only in certain areas. However there had been announcements that the cable networks were to be upgraded and the FWA licenses had only recently been issued. ComReg excluded alternative broadband services from the market definition and thus had to assess market power in the market analysis section. Again taking a forward looking perspective ComReg did not anticipate any medium term market entry from these alternative services within the timeframe of the review. ComReg made these conclusions by assessing their position currently and considering what level of investment would be needed and how long this would take. ComReg noted that it would monitor the market and would revisit any conclusion if anything unexpected occurred in the market.

AGCOM noted observation of traffic shares through the years shows that the shares are stable or slowly decreasing. No technical or economic discontinuity has been envisaged. The incumbent’s SMP is hence solid in the period in which remedies are imposed.

5. Assessment of market power in closely related markets

This was an issue faced by 7 NRAs:

- Finland with vertically integrated operators offering a range of services
- Ireland market for LLU, retail broadband services
- Italy market for LLU, retail broadband services
- Norway with vertically integrated in market 11

- Denmark with vertically integrated in market 11
- Sweden where broadband access (ADSL) bundled with access to the fixed public telephone network.
- Germany (local loop, broadband origination) and corresponding retail markets (two broadband access market, a ADSL mass market and a premium access market)

ComReg noted that, additionally, the power exerted from the retail broadband market was assessed in detail due the inclusion of self supplied services and eircom's position as a vertically integrated operator. It was noted that the incumbent is likely to have cost advantages over new entrants in the wholesale broadband access market (even where the same investments are being made), and the incumbent is likely to have economy of scope opportunities that flow from its investments in broadband equipment which need not necessarily accrue to new entrants. In addition, the incumbent has better access to potential retail customers for the new downstream services. These and other differences in risk and return might conceivably lead to a higher required rate of return on investment for new entrants. As such, they might, collectively (as well as individually), constitute another barrier to entry.

PTS noted that IP-telephony produced by alternative broadband networks, as cable TV networks and Local Area Networks, is a potential substitute to access to the traditional public fixed telephone network. TeliaSonera offers broadband access (ADSL) bundled with access to the fixed public telephone network. TeliaSonera has a similar requirement in their wholesale product. PTS considered that the market power TeliaSonera has on the markets for access to the fixed public telephone network can strengthen through these requirements.

FICORA expressed the view that wholesale broadband access in Finland is closely related to the LLU market. As the service provider needs access to the network in order to provide the Internet service to customers, the local loop products are important, but do not substitute the provision of the wholesale broadband service. In most cases both the local loop product and the wholesale broadband product provided over PSTN network are leased out by the same incumbent operator. When analysing the broadband access market in Finland, the competitive situation in the market for local loops must also be taken into account.

There was a common theme among NRAs that the SMP operator was often vertically integrated and offered a broad selection of other telecommunications products and thus had market power on other fixed network services. A number of NRAs assessed market power in the LLU and retail broadband markets.

IV.3.2 Most Important Criteria

The common theme was that many NRAs assessed potential competition and recognised new technologies as viable possible potential threats however these were, in most cases, not sufficiently prevalent, to constrain the SMP operator.

New technologies were generally in the early stages of development. In this regard, NPT noted that although this market does not have such high barriers to entry as market 11, and this market does have a rapid technological evolution, NPT concluded that the incumbent (Telenor) still warranted SMP-status.

1. **Market shares**

Market share was the most important criteria used, as can be seen by the following sample of details of NRAs' analysis of their incumbent's market shares:

- Finland, SMP operators had over 50% of the DSL connections.
- France France Télécom held 93% of market shares.
- Germany, Deutsche Telekom AG has very high market shares at related wholesale markets (ULL and broadband origination) as well as at corresponding retail broadband access markets, which are decreasing from a high level.
- Hungary; 100 % market share.
- Ireland 80% of retail broadband services or 100% of bitstream lines.
- Italy, high & growing market shares.
- Portugal high and growing market shares.
- Denmark high and growing market shares.
- Sweden; 78% of the total numbers of produced bitstream access lines.
- UK. high and growing retail market share data.

There were some difficulties encountered in this analysis. For ComReg, the inclusion of retail services provided by resellers which accounted for 1% of the retail market - ComReg noted that resellers are effectively required to acquire from eircom at its wholesale price and must set their resale price at a level that permits their customers (e.g., ISPs) to compete with eircom's retail services. As such, ComReg believes that the impact of such resellers is less than even the de minimis market shares suggests. PTS noted that bitstream Access was a new defined relevant market which caused some initial problems in understanding the market data requested.

2. **Economies of scale**

The theme running through the responses was that the types of networks required to provide a bitstream-equivalent service are characterised by economies of large scale. This represents a high barrier to entry. Ofcom noted that high fixed costs mean that economies of scale/density are important. BNetZA noted the existence of significant sunk costs, Deutsche Telekom`s high proportion of end customers and its almost total control of access network 8 years after market liberalisation as key factors in its SMP finding.

3. Control of infrastructure not easily duplicated

As with economies of scale, NRAs generally held the view that the control of infrastructure that is difficult to replicate was a critical factor justifying and underpinning the ongoing solidity of the incumbent's SMP. ComReg took the view that no new entrant is intending to, or would be able to, successfully build a new access network (capable of supplying such services) replicating all or part of eircom's network, or that sufficient investment will be made in existing infrastructure to upgrade it to the point at which it is able to support the provision of broadband access.

In Finland, a major part of the wholesale broadband access in each local area is provided in the SMP operator's fixed network. In any case, most CATV networks suitable for providing cable modem service are possessed by the local SMP operators or by their subsidiaries.

NCAH stated that high sunk costs characterise the construction of the relevant infrastructure. The star structure cable network and fixed telephone network suitable for broadband services are considered to be infrastructure not easily duplicated in economic terms. NCAH added that ownership and control of star structure cable networks mean weaker market power than ownership of fixed telephone network.

4. Vertical integration

FICORA's response was representative of the general finding on this criterion, namely that each SMP operator is vertically integrated and has a strong position on the retail market of broadband services offered to end-users.

IV.4 Types of data used

Most NRAs used data from questionnaires sent to operators.

Data used are mainly:

- Number of wholesale broadband connections (different technologies)
- Number of retail broadband connections
- Prices of wholesale and retail broadband access products
- Monthly and connection fees
- Coverage of networks (DSL, bidirectional CATV) and MDFs with DSLAMs
- Internal sales on cable networks
- Number of narrowband connections

IV.5 Remedies

IV.5.1 SMP operators from a same country have been imposed the same set of remedies

Since SMP was found in this market by 9 NRAs who had notified to the Commission, remedies on SMP operators were imposed by these 9 NRAs. The exception was ANRC, which, as discussed, found no SMP in the market, stating that this market is an emerging market and under surveillance.

Eight NRAs imposed the whole set of remedies of art9,10,11,12,13 on the SMP operators. Notably, one NRA, FICORA, imposed only the remedies of art 9,10,12. One possible reason for this divergence is that FICORA considered that these remedies would be sufficiently strong so as to address the identified competition problems, and that the further imposition of art 11 and 13 would not be proportionate, given the high number of SMP operators.

IV.5.2 Remedies imposed are homogeneous

Four NRAs found more than one SMP operator in the market, two of them did not impose the same set of remedies to the SMP operators, the other two did impose the same set of remedies to all SMP operators found in the national market. The reason for this divergence, however, is due to distinct geographic markets found in some states.

IV.5.3 Competitive problems addressed

The remedy of art 9 was generally imposed to prevent: price and quality discrimination, to ensure that alternative operators have sufficient information and clear processes to which they would not otherwise have access. These measures help to alleviate leverage of market power to the related retail market, time consuming negotiations and agreements, and the discriminatory use of withholding information.

The remedy of art 10 was generally imposed to prevent: quality and price discrimination, discriminating use or withholding of information, delaying tactics, undue requirements, discrimination in favor of the retail arm of a vertically integrated SMP operator.

The remedy of art 11 was generally imposed to prevent the problems arising from vertical integration: price discrimination, cross subsidisation, and general competition distortion by pricing means.

The remedy of art 12 was generally imposed to prevent: refusal to deal/denial to interconnect, market foreclosure by a vertically integrated operator leveraging its market power onto a related market in order to hinder the entry of competing operators.

The remedy of art 13 was generally imposed to prevent: excessive pricing, margin squeeze to the detriment of the end-users, vertical leveraging of the

SMP operator in the wholesale broadband access market into retail broadband markets, anticompetitive bundling of products.

IV.5.4 Specific content of obligations

1. **Article 9 remedy**

The publication of reference offer of broadband access is required, publication of all SLAs.

2. **Article 10 remedy**

The SMP operator should provide sufficient wholesale products to support the full range of the operators offerings, apply equivalent conditions in equivalent circumstances, ensure that information and services are provided to OLOs according to timescales, conclude legally binding SLAs with OLOs, the obliged operator does not link the provision of a network service unjustifiably to technical conditions, which can only be satisfied by a single or a small number of service providers, the SMP operator offers services and conveys information to others on the same terms and of the same quality as the services that are offered to its subsidiaries or partners.

3. **Article 11 remedy**

Divisions of access network, core network, retail and other activities: a) separated accounting reports should reflect real revenues and costs of the divisions and the invested capital b) divisions' reports should contain those transfer costs and transfer revenues occurring when a given division uses the service of another division.

4. **Article 12 remedy**

Obligation to meet reasonable requests for access to, and use of, wholesale bitstream access products, features or additional associated facilities. The SMP operator shall negotiate in good faith with undertakings, give third parties access to specified network elements, facilities or both, not withdraw access already granted without the prior approval of the NRA, grant open access to technical interfaces, protocols, or other key technologies which are indispensable for the interoperability of services of virtual network services. The SMP operator shall lease out to the other operator part of the local loop transmission capacity as a wholesale broadband access. Local loop transmission capacity is a data transmission service carried out by means of equipment items installed by the lessor to enhance throughput capacity. The price for the lessor's equipment must be included in the price charged for the transmission capacity.

5. **Article 13 remedy**

Generally, there was a mix of retail-minus and cost orientation. Price control is specified as retail minus by Comreg, who noted that the more burdensome cost orientation is not justified here. Ofcom imposed retail minus pricing rule calculated on the basis of an efficient new entrant, which ensures that incumbent cannot price squeeze downstream competition from efficient new entrants PTS imposed prices based on retail minus model for bitstream access, and cost oriented prices based on LRIC for co-location.

NITA imposes cost oriented prices using modified historical cost method (HCA).

ANACOM used retail-minus taking as reference all the retail broadband access offers provided by PT Group companies (regardless of technology), on the IP offer and cost-orientation, mainly on the ATM offer. ANACOM has estimated costs based upon: cost accounting model of incumbent; and prices available in comparable competitive markets.

ARCEP imposes cost oriented prices, but only when the tariff computed that way doesn't squeeze OLOs using LLU. AGCOM imposed Cost orientation on access at the DSLAM and Parent ATM switch level, using HCA for the access network and CCA for the transport network.

Therefore, a range of price control approaches was adopted by NRAs. It would be interesting to understand the source of divergence amongst NRAs on the specific types of price control adopted, but it is likely to be around proportionality. However, at a general level, the remedies imposed show a high degree of uniformity amongst NRAs.

V COMPARATIVE ANALYSIS ON ISSUES RELATED TO MARKET 15 OF THE RECOMMENDATION

V.1 Summary of answers

Table 6. Summary of market 15

	Summary of answers				Decision Status				Result of Market Analysis
	Answers	Market Def.	Market Analysis	Remedies	Final Decision	Notif. Process	National Consult.	Vetoed	
ComReg (Ireland)	X	X	X	X	X				Joint Dominance
FICORA (Finland)[3]	X	X	X	X	X				Effective Comp.
OFCOM (UK)	X	X	X		X				Effective Comp.
NCAH (Hungary)	X	X	X	X	X				Effective Comp.
RTR (Austria)	X	X	X		X				Effective Comp.
ARCEP (France)[4]	X	X	X	X		(X)			
PTS (Sweden)	X	X	X			X			Effective Comp.
OPTA (Netherlands)	X	X	X			X			Effective Comp.
NITA (Denmark)	X	X					X		Effective Comp.
NPT (Norway)	X	X					X		

[3] FICORA's decision was vetoed by the EU Commission, but the veto did not concern the market definition in itself. The EU Commission used its veto against FICORA's market analysis which concluded that there is a SMP-operator in the market. After Commission veto FICORA made its final decision maintaining the initial market definition but concluding that there is no SMP-operator in the market.

[4] ARCEP is in the particular situation where the market review was notified with a finding of collective dominance. ARCEP decided to withdraw its notification. The reason was not related to market definition but to the collective dominance of the three mobile operators. The market is now under supervision in order to analyse competition and the impact of the new MVNOs contracts signed during the market analysis. For the purpose of this Experiences Project, the findings of ARCEP will be noted through out this document.

PTA (Iceland)	**X**	**X**	**X**	**X**			**X**		**Single SMP**
CMT (Spain)	**X**	**X**	**X**	**X**			**X**		**Joint Dominance**
MCA (Malta)	**X**								
ANACOM (Portugal)	**X**								
ANRC (Romania)	**X**								
AGCOM (Italy)	**X**								
BNETZA (Germany)	**X**								
APEK (Slovenia)	**X**								
BIPT (Belgium)	**X**								
CRC (Bulgary)	**X**								
EETT (Greece)	**X**								
RRT (Lithuania)	**X**								
SIDEAMET (Estonia)	**X**								
SPRK (Latvia)	**X**								
URTiP (Poland)	**X**								
OCTPR (Cyprus)	**X**								
CTU (Czech Republic)	**X**								
TUSR (Slovakia)									
ILR (Luxemburg)									
Total	**27**	**12**	**10**	**6**	**5**	**3**	**4**	**0**	**9**

V.2 Market definition

V.2.1 Commission Definition

Explanatory memorandum, Recommendation

"*[…] Network access and call origination are typically supplied together by a network operator so that both services can be considered as part of the same market at a wholesale level. This might not necessarily be the case in the future, if for instance call selection were introduced for mobile networks to mirror what has happened with respect to incumbent fixed network operators.*

The relevant wholesale market appears in general to be access and call origination on mobile networks. This market is still subject to entry barriers, because undertakings without spectrum assignments can only enter the market on the basis of future spectrum allocations and assignment, secondary trading of spectrum or by purchasing a licensed operator. While in principle this is not an absolute entry barrier since there are various possibilities to share spectrum including the development of national roaming or indirect access relationships, such structures have not evolved to date in this market. However, the level of competition generally observed in this market at the retail level indicates that ex-ante regulatory intervention at a wholesale level may not be warranted.[…]"

V.2.2 Definition by products

1. **Products included**

All NRAs included mobile access and call origination in their market definition. More precisely, the answers received would indicate that the following products were considered and were included in the relevant market:

- ComReg included all wholesale access and origination services. The market was defined by examining the retail and wholesale markets. It was difficult to assess as there was no access grant to call origination or access services in Ireland (this was also noted by PTA). At the retail level consumers purchase a cluster of basic voice and SMS services. This cluster can be carried over 2G, 2.5G and 3G and hence the market is defined to be technology neutral, defined by product and not technology. The market definition is also considered at the wholesale level.

- ARCEP and RTR took a similar view and noted that voice and SMS were produced and demanded as a bundle together and therefore are part of the same market. ARCEP also included all narrowband multimedia services.

- Ofcom defined the wholesale market as broad as demand-side substitutes in the retail market. Calls and access were considered together as a cluster market since they face similar competitive conditions and a common pricing constraint. For similar reasons SMS was included in the market.

- NCAH examined market 15 at the wholesale level only and identified that this included (i) wholesale access and call origination services for MVNOs. (ii) wholesale access and call origination service in case of carrier selection ensured from the mobile network for the operator providing such a service; (iii) wholesale access and call origination for service providers of value added services and operators of colour numbers.

- 2G and 3G voice telephony were included in this market by six NRAs, ,ARCEP; CMT, ComReg; NITA NTP, and PTS . Reasons provided for inclusion were that from a consumer point of view, 3G voice is a substitute for GSM voice.

- PTA only included 2G and 3G was specifically excluded.

- Wholesale origination of SMS was included by eight NRAs: ARCEP, ComReg, CMT, NPT, Ofcom, PTA and PTS RTR. This was generally concluded because voice and SMS are purchased as a bundle at the retail level

- All mobile services other than voice e.g. SMS, mobile Internet or MMS was included by one NRA : OPTA.

- NRAs generally concluded that pre paid and post paid calls were in the same market, noting demand side substitution due to low switching costs. OPTA, PTA and ComReg noted this specifically

- NRAs tended also not to differentiate between business and private customers, due to asymmetric demand side substitution. (OPTA, PTA, noted this specifically in their questionnaire)

2. **Products considered as potential substitutes and excluded**

Seven NRAs mentioned expressly that they excluded fixed network telephony: NPT, PTS, OPTA, Ofcom, PTA, CMT and ComReg. The reasoning provided for this conclusion included the lack of mobility associated with fixed calls. Also it was stated that fixed access was attached to a place while mobile access was attached to the person, also Ofcom noted that price differentials meant that a SSNIP above the competitive price of a fixed originating call would not induce sufficient substitution. Additionally no supply-side substitution was identified due to high barriers to entry (in cost and time), such as the unavailability of spectrum and the high level of sunk costs. This was supported by a number of other NRAs. There was no substitution on the demand side due to the distinctive nature of mobile telephony.

As far as data services are concerned:

- Six NRAs specified that they excluded all data services other than SMS : NPT, NITA, ARCEP, RTR, ComReg and PTA. ARCEP included lowband data services other than SMS, however excluded access to mobile services allowing broadband multimedia services as broadband services required a UMTS license.

- 1 NRA excluded SMS: NITA noted that SMS did not satisfy the same consumer needs.

- OPTA excluded 3G access and call origination as it was too early to draw conclusions whether it was a substitute or not.

Three NRAs explicitly excluded specific products in their analysis:

- Wireless VoIp by NPT, as it did not offer the same coverage as mobile telephony
- VoIP by PTA there was a lack of demand side substitution as the product was too new and in little use, in addition to the lack of mobility,
- International roaming by PTS,
- Video telephony – NITA and RTR (considered an emerging service),
- GPRS - NITA and RTR and TETRA by NITA.

3. Conclusion

Products definition is quite common to all NRAs; it generally includes a cluster of voice services. Most NRAs included both 2G and 3G except for PTA, OPTA and Ofcom.

The Commission commented the Ofcom decision not to include 3G services within the market definition. But as it agreed that it would not have any impact on the SMP analysis, Ofcom decided to confirm its exclusion of 3G services.

Data services were treated differently among NRAs. With regard to SMS, most NRAs include SMS, however NITA excluded SMS services. A majority of NRAs decided to exclude data services other than SMS, considering they were emerging services.

In comparison to Market 16, the market definition for mobile access and call origination is quite different. In essence, Market 16 is defined as a market for wholesale voice call termination on individual mobile networks. This means that most NRAs have followed the Recommendation and defined Market 16 as a market for voice termination. This means that most NRAs have excluded SMS or mobile data. Where the market definition for both markets are similar in the treatment of technologies, most NRAs take the view that market 15 and also market 16 should be technology neutral and hence include 3G. Three NRAs have excluded VoIP from market 16, incidentally only two NRA excluded VoIP from the definition of market 15. PTA included SMS services in market 15 however excluded from market 16.

V.2.3 Geographic definition

Geographic market was defined as:

- National for CMT, ComReg, NITA, PTS, OPTA, RTR, FICORA NPT, NCAH, and PTA.
- The scope of the geographic market was generally delimitated by the geographic coverage of licence granted and frequency authorisation. Ofcom noted that a wider market definition was not appropriate because although foreign mobile operator could enter with a roaming agreement with UK operator, the prices would be too high to induce a switch from a hypothetical monopolist UK operator to respond to a price increase. A

narrower market definition was also not appropriate as mobile prices were uniform over national geographic area (Ofcom) and homogeneity of competitive conditions (RTR).

- Metropolitan by ARCEP and was defined for French Territories: Martinique, Guadeloupe, La Réunion, Guyane and Mayotte territories. due to frequencies allocated and regulatory subdivisions

V.2.4 Other issues

PTA defined a separate market to GSM services for wholesale access and call origination on NMT mobile networks. Main users are travellers on mountains and seafarers in offshore waters. NMT is mainly used where GSM is not possible. This market was defined because from the demand side the pricing of such services was found to be radically different; also there was no supply side substitution. There was also a finding of dominance. PTS explicitly included NMT450 technology in the market. NITA did not include TETRA within the relevant market as it was found that TETRA was not a functional substitute as it gave professional users possibilities of make e.g. group calls also the service was not fully developed and may not be continued in the future.

V.3 Market analysis

V.3.1 Main Issues Arising

	Indirect pricing constraint/Self supply	Potential competition Vs supply side substitution	Assessing market power 'absent regulation'	Forward-looking assessment	Market power in closely related markets	Other
ARCEP	No	No	No	Yes	No	
CMT	Yes	No	No	Yes	Yes	Backward looking analysis: Absence of MVNOs or other indepedent service providers and the existence of entities interested in offering mobile services had been taken into account to analyse joint dominance at the wholesale level.
ComReg	No	No	No	No	No	Absence of MVNO activity at wholesale so examination of retail competition
FICORA	No	Yes	No	Yes	Yes	
NCAH	No	Yes	No	Yes	No	
NITA	Yes	Yes	No	Yes	no	
OFCOM	Yes	Yes	Yes	No	No	Yes. Difficulty in practice in demonstrating the ability to effectively retaliate to deviation from a common agreement
OPTA	Yes	Yes	Yes	Yes	No	
PTA (GSM)	Yes	No	No	Yes	Yes	Joint dominance was also analysed since there are only two operators on the market.
PTA (NMT)	Yes	No	No	Yes	Yes	
PTS	Yes	No	No	No	No	
RTR	Yes	No	No	Yes	No	As there are only few operators, single dominance and joint dominance had to be analysed.

V.3.2 Most Important Criteria

The analysis below presents and compares the most important criteria used by individual NRAs which concluded that there to be:

- Competitive competition

- Single dominance
- Joint dominance

EFFECTIVE COMPETITION

The more important factors considered by those NRAs which concluded that market 15 was effectively competitive were inter alia and *not* in particular order:

- Market share
- Ease of market entry
- Pricing analysis

In response to NCAH’s notification the EU Commission called the authority's attention to the fact, that the lack of transactions on the wholesale market did not exclude the possibility to analyse the market power on the wholesale market. However the analysis would have come to the same conclusion as was stated by analysing the retail market. In the future the authority should pay special attention to the demand side of the market.

1. Market shares

Market shares were generally calculated with retail market data. Market share was considered by all and was important for some NRAs (OPTA found that no operator had more than 40% market share). NCAH noted that the market concentration had continuously decreased in terms of subscribers, traffic and revenue. The average price level had continuously decreased; the type of data used was market share data.

However market share was not a determining factor for all NRAs (RTR, PTS & Ofcom). PTS found that TeliaSonera had between 40 and 50 percent market share depending on measuring method. Other criteria were assessed to rebut the presumption of dominance of a market share above 40%. RTR identified that one operator had high (~50%) market share but other criteria indicated that the market was effectively competitive such as market share being asymmetric and unstable.

NITA showed that market share was important to their analysis. The CR4-index and HHI-index was used. Since there only are four suppliers the CR4-index is 100 pct. The HHI is the period 2001 - 2003 0,38 - 0,36 - 0,37 and the value in the period 2004 - 2006 was expected to be 0,35. Because of the fact that the resources of frequencies were limited that can indicate a situation with effective competition.

In relation to Ofcom’s (then Oftel) notification the EU Commission noted that the use of retail revenue shares may distort the view on market power at the wholesale level, Oftel's comparison of UK concentration with other countries, using Herfindahl-Hirschman Index figures, did not in itself indicate dominance or its absence, there may be other appropriate ways to assess concentration, notably concentration ratios.

Generally market share was calculated with subscriber number, turn over and traffic volume.

2. **Ease of market entry and expansion**

A number of NRAs (RTR, PTS and Opta) noted that according to national circumstances barriers to entry for mobile access and call origination were high due to scarcity of frequencies, economies of scale and sunk costs. However commercial agreements have been made on national roaming and wholesale capacity indicating less need for regulation. Also Opta noted that there were already five suppliers in the market. Ofcom decided that the NRA must assess impact of new entry, and found good prospect for entry. Other criteria were considered to understand the prospect of market entry. Opta found there to be economies of scale and scope and vertical integration to be present however these did not lead to decisive advantages. NITA also found analysis of economies of scale and scope and the overall size of the undertaking were important to their analysis. They noted that the market had some barriers to entry which could reduce potential competition, however on the other hand the market is in growth which can make it possible for new providers to establish on the market.

NCAH noted that in terms of distribution and sales network, the conditions of competition were becoming equal among the operators and that the overall size of undertaking, within the last 3 years there was a gradual equalization among the operators. RTR considered barriers to expansion and found them to be low.

The types of data used were:

- Cost structure (qualitative and quantitative average cost curves);
- Inhouse intelligence on market entry & exit at service provider level;
- Data from MNOs and public plans of MVNOs).
- Answers to the questionnaire (marketing expenses, distributors, number of shops)

3. **Pricing Analysis**

RTR noted that prices had decreased significantly since 1999; there no evidence of excessive pricing. Additionally PTS found that positive price trend at the retail level of the market was indicative of effective competition.

4. **Other criteria**

A number of NRAs considered the following in the assessment of competitive power:

- Presence of countervailing bargaining power (NCAH, OPTA and Ofcom);
- Product/services diversification (RTR, OPTA and Ofcom) Specifically Ofcom noted that incentives to compete are lower if consumers do not

respond to price changes. Oftel found contradictory evidence on awareness and falling importance of switching barriers;

- Different time of market entry strongly asymmetric interests (RTR);
- Technological advantages, easy or privileged access to capital markets, economies of scale and scope, control of infrastructure not easily duplicated, service packages, service diversification, and vertical integration). (NCAH).
- Cost and barriers to switching - The customers stated that there were some difficulties changing provider (costs and administrative difficulties) but no remedy would be able to change the actual problem (NITA)

SINGLE DOMINANCE

FICORA's initially proposed that there was single dominance in the market however the market analysis was overruled by Commission veto. After the veto FICORA made final decision concluding that there is no SMP operator. The more important factors considered by those NRAs which concluded that market 15 singly dominant were:

- Market share
- Lack of countervailing bargaining power
- Other criteria

1. Market share

Market share was an important criteria used by both FICORA and PTA. Sonera Mobile Networks had market share in excess of 60%. The market share was calculated form the originating traffic. PTA noted that Síminn has over 60% of the GSM market share depending on measuring method which they concluded indicated the presence of dominance. Market shares have also been relatively stable for the last 3 years. Data was gathered from the operators on volume of minutes, customers and revenue.

2. Lack of countervailing bargaining power

Ficora and PTA identified an absence of or low countervailing power. FICORA concluded that service providers' had limited possibility to switch from mobile network to another. The type of data used to support this conclusion was the: (i) considerable costs incurred for the service provider by the switch of network operator (ii) technical and commercial risks, particularly the risk of losing a great number of subscribers in the switch and (iii) conditions restricting or delaying the switch). According to PTAs findings there was no significant consumer price awareness and therefore little possibility of countervailing buying power on retail level, this was supported by consumer surveys. There is also a little countervailing power at wholesale level.

3. Other criteria

FICORA noted that the considerably larger volume of traffic (own traffic and that of service providers) enabled more efficient use of the base station network and allowed Sonera Mobile Networks lower unit costs in the supply of wholesale mobile services. Ficora noted the existence of economies of scale and scope and the overall size Sonera Mobile Networks as the biggest provider of mobile communications services in Finland which indicated single dominance. Furthermore FICORA identified that Sonera Mobile enjoyed technological advantage via its possession of many of the more technologically and economically feasible P-GSM 900 channels. Network effects were also identified and particularly great differences in prices for on-net and off-net calls.

PTA also considered the viability of potential competition and identified that increased concentration on the market after merger of three telecom operators in 2002 this resulted in only two vertically integrated operators on the mobile market along with one very small operator that has less then 1% market share. Furthermore Síminn had a strong position in other markets, bigger mobile network and had strong financial position. In terms of price developments there had been little price competition between the two MNOs for the last 3 years. Price data from Telegen was used in their analysis.

PTA considered (i) Market shares, (ii) Barriers to expansion, (iii) Lack of countervailing power and (iv) the absence of potential competition in the NMT market.

In response to FICORA’s initial notification, its veto decision the EU Commission stated that despite the fact that the market share of Sonera was in excess of 60 %, other factors relevant to the assessment of SMP must also be taken into account. In the circumstances of the given case, in the absence of a full assessment of the dynamics of competition, there was not sufficient evidence as to the existence of SMP. The Commission criticised FICORA's market analysis 1) Lack of taking into consideration the apparent market dynamics 2) Lack of evidence of capacity constraints 3) Lack of evidence as to high switching costs and the absence of countervailing buying power 4) Undue weight given to evidence of network effects, economies of scale and scope, and substantial financial advantages. The Commission referred to the fact that in Finland the service providers had been able to conclude wholesale agreements, including MVNO agreements, on a commercial basis with all MNO's in the relevant market.

ComReg concluded that Vodafone was not singly dominant in market 15 as the barriers to expansion particularly for O2 to be low. Similarly, other factors of dominance considered by ComReg (i.e. size and distribution of competitors, access to capital, advertising spend and brand image, leverage of size and economic strength in relevant market, historical conduct, relative economic performance, extent of vertical integration) are not uniquely characteristic of Vodafone but also of O2.

JOINT DOMINANCE

The SMP Guidelines[5] states that analysis of joint dominance is facilitated by looking at a certain number of criteria. Additionally, guidance on the appropriate criteria to be used are contained in Annex II of the Framework Directive, which have also been used by the Commission in applying the notion of collective dominance under the merger control Regulation. ECJ and CFI jurisprudence also provides guidance on the appropriate elements which should be considered (e.g. the Airtours case).

Whereas single dominance is established by proving that an undertaking can act independently of its competitors, joint dominance is proven by establishing that more than one undertaking acts dependently on each other for their own better good, and independently of their competitors and consumers. Furthermore to establish joint dominance an abuse of dominance does not have to be shown to have taken place by the NRA. Below is a summary of some of the important factors considered by the three NRAs (ARCEP, CMT and ComReg) which identified the presence of joint dominance in market 15. ARCEP withdrew its notification before Commission observations and is presently reviewing the market.

1. **Market Shares**

ComReg identified that the market shares of the operators in terms of subscribers in September 2004 was 54% (Vodafone), 40% (O2), and 6% (Meteor). CMT established that Xfera had not yet initiated its commercial activity and in the considered period of time (2 years) it does not constitute a serious constraint.

2. **Other Criteria**

ComReg considered the Airtours case and identified that in order to establish joint dominance it was necessary to adopt a two step approach notably establishing (i) structural characteristics and (ii) behavioural elements.

ComReg emphasised a number of structural characteristics of the Irish market which were conducive to coordinated behaviour between Vodafone and O2, these included the structure of the market (degree of market share, growth, profitability, market concentration, barriers to entry, parallel behaviour), the incentive to coordinate (align conduct in the market), the ability to coordinate (the existence of a focal point), the ability to detect cheating (monitoring whether terms of agreements are adhered to), the enforceability of compliance (incentive not to depart from common policy for fear of retaliation) and actual and/or potential market constraints (actions of outsiders which could jeopardise results from coordination). Due to the absence of transactions other than internal sales at the wholesale level, these criteria were assessed to a large extent based on evidence available at the retail level.

Further to outlining the structural market characteristics that were conducive to coordinated effects, ComReg identified that Vodafone and O2 were tacitly

[5] Paragraph 97

colluding: The evidence which was used to prove this were price trends, absolute price levels, profitability measures, and denial of access to wholesale airtime. ComReg presented a specific pricing analysis of user profiles to track retail price movements. It was argued that pricing was a focal point of the case for tacit collusion. Refusal to supply access on reasonable terms was also established as a focal point. The main criteria ComReg used to establish these behaviour elements as the presence of transparency between O2 and Vodafone and the presence of retaliatory mechanisms.

In response to ComReg's notification the EU Commission's letter asked ComReg to monitor the fringe competition and to assess whether it could disrupt/undermine the joint dominance. Commission also supported view that examining wholesale market was possible with no transactions and a retail examination was justified.

ARCEP mainly considered the criteria linked to Airtours criteria which were: (i) high barriers to entry not likely that there will be a new entrants to challenge the tacit equilibrium (no 2G frequencies left, little likeliness of a 3G entrant during the analysis time span) ;(ii) transparency; and (iii) retaliatory mechanisms: on wholesale (meltdown of the oligopoly by harsh competition to attract ever bigger MVNOs) and retail (price war against significant MVNOs and possibly Bouygues Telecom).

The other criteria examined by ARCEP were (i) market concentration: this was established by the fact that three MNOs tacitly agree to stay between themselves and not open up the retail market to MVNOs; (ii) similar cost structures: the MNOs have similar cost profiles at the wholesale level (same networks), and thus share a common interest in keeping retail prices at approximately the same level and (iii) vertical integration: MNOs were vertically integrated, which meant that they can shut the wholesale market in order to keep the retail to themselves.

ARCEP withdrew its notification therefore the EU Commission did not provide a formal comment however doubts were raised as to the likeliness of the retaliatory mechanism and the focal point.

CMT also established both structural and behavioural characteristics in order to prove joint dominance. The main criteria used were a (i) lack or reduced scope of price competition: The non deviating firm could react by granting access to other service provider or by lowering its retail prices (ii) a mature market: CMT noted that a deviation from the collusive strategy of denying access was visible due the appearance of a new competitor. CMT also established that there was a (iii) lack of countervailing power which existed due to an absolute barrier to entry due to spectrum is a scarce resource; other structural barriers such as sunk cost, advertising expenses, loyalty plans and huge financial needs. TME, Vodafone and Amena are the only providers of mobile services since 1999. (iv) transparency also was established as three firms account for the whole market and none of them is individual dominant. Herfindhal index was stable and above 4000 (values above 1800 reveals the market is highly concentrated)

3. Assessment of joint dominance

Four NRAs which concluded that the market was effectively competitive (Ofcom, Opta, PTA and RTR) considered the presence of joint dominance. Factors which were important in this analysis were (i) maturity of the market, growth on the demand side (ii) transparency – Ofcom specifically noted that trends indicate different success of MNOs in recent years but also none with a dominant position (iii) homogeneity of product and (iv) comparison of market share. Ofcom also noted that collective dominance requires ability to retaliate effective and that they could not be definite on this criterion. Data used (considered comments on excess capacity, availability & use of financial resources, pace of retaliation).

RTR noted that prices had decreased significantly since 1999; there no evidence of excessive pricing or evidence of collusive behaviour. Ofcom noted that prices and profits could be used to assess the ability to exert SMP/co-ordinate prices and found differences over time in MNOs' relative prices and profit. Data used was MNOs published profits data and internal ongoing tariff tracking data. Price trends were also based on price baskets.

PTA considered the presence on joint dominance however market shares were not similar (there was 29% difference in market shares measured in number of subscribers). There was transparency in part, due to the size of the market, high barriers to entry and lack of countervailing buying power. However there were no retaliatory mechanisms: and cost structures were not similar. PTA

V.4 Types of data used

Generally NRAs used data collected from market analysis questionnaires sent to operators. The following is a list of some of types of data used and the relevant source,

- Data on traffic,
- Number of mobile subscription and turnover
- Penetration
- Data on mobile network operators
- Fees and revenues
- Information on use of mobile telephony
- Numbers of call minutes
- Call cost data (source: ofcom (oftel) network charge control model and competition commission investigation into mobile call termination rates)
- Wholesale aco prices (source mvno contracts)
- Surveys on consumer behaviour, cost awareness

- Price benchmarking (source – telegen)

V.5 Remedies

V.5.1 SMP operators from a same country have been imposed the same set of remedies

PTA found single dominance in two markets for mobile access and call origination (one for GSM and the other for NMT) and imposed the same set of remedies in both of these markets and its principal remedies was one of access. ARCEP, CMT and ComReg found joint dominance in the market and imposed the symmetric remedies on all SMP operators in their relevant market (ARCEP, Orange France, SFR and Bouygues and Orange Caraibe for the Antilles-Guyane zone, CMT, TME, Vodafone & Amena and ComReg O2 & Vodafone). These NRAs relied on a remedy of access to the wholesale market to address the competition problem in this market.

V.5.2 Remedies imposed are homogeneous

PTA had proposed to impose the full set of wholesale remedies, Transparency (Art. 9), Non-discrimination obligation (Art 10), Accounting separation obligation (Art. 11), Access-obligation (Art. 12) and Price control and Cost accounting obligation (Art 13). all obligations on Siminn in both the GSM and NMT markets for mobile access and call origination.

One NRA, ARCEP proposed only an Access obligation (art12) which mandated the SMP to grant access upon reasonable request.

CMT proposed and obligation of Non-discrimination obligation (Art 10), an Access-obligation (Art. 12), Price control and Cost accounting obligation (Art 13). ComReg imposed an obligation of non-discrimination (art 10), accounting separation (art 11), access-obligation (art 12) and cost accounting obligation (art 13).

V.5.3 Competitive problems addressed

PTA had proposed to impose the full set of wholesale remedies, Transparency (Art. 9) to prevent price discrimination, it was argued that this was necessary to secure non-discrimination and access to networks at reasonable prices. A Non-discrimination obligation (Art 10) was proposed to deter price, terms or quality discrimination. PTAs reasoning to impose an accounting separation obligation (Art. 11) was to prevent excessive pricing and was justified as it was necessary to secure non-discrimination and transparency and hinder excessive pricing. Art 9, 10 and 11 obligations were proposed to deter anti-competitive behaviour and promote competition.

An Access-obligation (Art. 12) was also put forward to prevent refusal to deal and denial of access and was justified as no independent service providers or MVNOs existed in the market. Furthermore a Price control and Cost accounting obligation (Art 13) was proposed to address excessive pricing and to ensure wholesale access at reasonable prices. These obligations aimed to promote competition.

ARCEP proposed an Access obligation under art 12, to address the weak competition at the retail level and the need for MVNOs. It was argued that fair access was sufficient as countervailing bargaining power should appear once MVNO's were 'well' entered.

CMT and ComReg proposed similar obligations. CMT proposed and obligation of Non-discrimination obligation (Art 10) to address delaying tactics and discrimination in terms of quality, which was justified as the SMP MNOs were vertically integrated and had market power at the wholesale level, an Access-obligation (Art. 12) was also proposed which was intended to remedy denial of access and was deemed proportionate as there were no active MVNOs and or independent service provider in the market. Also Price control and Cost accounting obligation (Art 13) was proposed. This was based on the reasonable request of access and aimed to ensure that access conditions allowed efficient entry of competitors. CMT argued that this did not impose excessive burden on MNOs.

ComReg imposed an obligation of non-discrimination (art 10), accounting separation (art 11), access-obligation to address denial of access as there was no active MVNOs in the market (art 12) and cost accounting obligation (art 13) to ensure reasonable cost of access and that agreements are not excessive. ComReg's approach was to allow SMP operators a period of time to meet their obligations regarding access and non-discrimination during commercial negotiations. Only if these were unproductive would ComReg direct SMP operators to implement those obligations relating to price control and cost orientation.

CMT and ComReg justified the imposition of these remedies on the basis that they promoted competition in the relevant market.

V.5.4 Specific content of obligations

PTA specified that the transparency obligation (art 9) was defined as the obligation to publish RIO. The Access obligation of art 12 was mandated as the obligation to offer access at reasonable terms, specifically on national roaming, co-location, resale and MVNOs. PTA defined the specific content of the Price control and Cost Accounting obligation of art13 was defined as the retail minus method to have quicker conclusion on the wholesale prices; if the result were not satisfactory then LRIC or another appropriate cost accounting method would be used.

Access was used as the main obligation to address market failure in market 15. PTA has imposed an access obligation in the form of national roaming and collocation. ComReg, specified a national roaming obligation coupled with access for either/or MVNOs or other forms of service provider access.

In the case of ARCEP an obligation of access was proposed and was based on reasonable requests. CMT also imposed a remedy of Access, stating that there were no MVNOs and/or independent service providers in the market.

VI COMPARATIVE ANALYSIS ON ISSUES RELATED TO MARKET 16 OF THE RECOMMENDATION

VI.1 Summary of answers

Table 7. Summary of market 16

	Summary of answers				Decision Status				Result of Market Analysis
	Answers	Market Def.	Market Analysis	Remedies	Final Decision	Notif. Process	National Consult.	Vetoed	
ANACOM (Portugal)	X	X	X	X	X				Single SMP
ANRC (Romania)	X	X	X	X	X				Single SMP
ARCEP (France)	X	X	X	X	X				Single SMP
ComReg (Ireland)	X	X	X	X	X				Single SMP
FICORA (Finland)	X	X	X	X	X				Single SMP
NCAH (Hungary)	X	X	X	X	X				Single SMP
OFCOM (UK)	X	X	X	X	X				Single SMP
PTS (Sweden)	X	X	X	X	X				Single SMP
RTR (Austria)	X	X	X	X	X				Single SMP
RRT (Lithuania)	X	X	X	x	X				Single SMP
NITA (Denmark)	X	X	X	X		X			Single SMP
OPTA (Netherlands)	X	X	X	X		X			Single SMP
EETT (Greece)	X	X	X	X			(X)		Single SMP
AGCOM (Italy)	X	X	X	X			X		Single SMP
BNetzA (Germany)	X	X	X			X			Single SMP
NPT (Norway)	X	X	X	X			X		Single SMP
PTA (Iceland)	X	X	X	X			X		Single SMP
APEK (Slovenia)	X								
BIPT (Belgium)	X								
CMT (Spain)	X								
CRC (Bulgary)	X								

MCA (Malta)	X								
SIDEAMET (Estonia)	X								
SPRK (Latvia)	X								
URTiP (Poland)	X								
OCTPR (Cyprus)	X								
CTU (Czech Republic)	X								
TUSR (Slovakia)									
ILR (Luxemburg)									
Total	**27**	**17**	**17**	**15**	**10**	**3**	**5**	**0**	**17**

VI.2 Market definition

VI.2.1 Commission Definition

Explanatory memorandum, Recommendation

"[...] Mobile call termination is an input both to the provision of mobile calls (that terminate on other mobile networks) but also to calls that are originated by callers on networks serving fixed locations, that terminate on mobile networks. Since the termination charge is set by the called network, which is chosen by the called subscriber, the calling party in general does not have the ability to affect of influence termination charges. This is the case under the calling party pays principle which is currently common in Europe. [...]"

VI.2.2 Definition by products

1. **Products included**

Many NRAs used the general market definition e.g. “Wholesale voice call termination on an individual network” and did not for instance define the technology of the network. Indeed, there were differences in products that the NRAs explicitly included in their market definitions.

Whether the below listed products are also included in those NRA’s market definition, which have used the general market definition, may be a matter of interpretation.

- ANACOM; ARCEP, BNetzA and PTS included UMTS voice call termination; OPTA and NPT included voice call termination on 3G networks.
- PTS and PTA included NMT 450 in the market.

- NPT and PTS included voice call termination on MVNO networks, whereas OFCOM defined the market as voice call termination on each MNO's network

- ARCEP included GSM gateways

- RTR and RRT included both external and internal provision of mobile call termination

- ARCEP and ANACOM included explicitly voice call termination originating from abroad.

- FICORA included various products and services, which are necessary for the implementation of terminating calls e.g. opening and maintenance of the interconnection at a standard point of interconnection.

In its comments to ARCEP the Commission was not definite whether GSM gateways have to be included in the market or not. But as this would not have any impact on the SMP analysis, ARCEP did not have any obligation to modify its market definition.

RTR stated that a call to an individual network cannot be substituted. Due to calling party pays principle a 5-10% price increase is likely to be profitable for an individual network.

2. Products considered as potential substitutes and excluded

Many NRAs explicitly excluded termination of SMS or mobile data, namely RTR, NITA, ARCEP, BNetzA, PTA, AGCOM, NPT, PTS, OFCOM and ANACOM. Also the Commission market definition did not include other than voice termination into the relevant market.

Three NRAs explicitly excluded termination on VoIP (ARCEP, ComReg, PTA), WLAN (ComReg).

3. Conclusion

There seems not to be major differences in the market definitions. The market definitions of different NRAs differ mainly in precision. Many NRAs used general market definitions, which may leave room for some interpretation.

There were six NRAs that included UMTS or voice call termination on 3G networks (ARCEP, BNetzA, PTS, OPTA, ANACOM and NPT). A general argument for inclusion of voice call termination on 3G networks is that from an end-user perspective there is no difference between 2G and 3G networks. Other argument used was technological neutrality.

BNetzA mentioned that there is demand-side substitution for requesting network operator as well as for the retail customer as far as the retail product is concerned. Both do not know if a termination is GSM/UMTS and it is not important for them either. For supply-side arguments BNetzA mentioned that

GSM termination is also used in UMTS networks and GSM network operators are also in the UMTS market.

ARCEP argued that the services are the same voice services that are supplied with the two norms, GSM and UMTS. In France all metropolitan operators have both a GSM and a UMTS licence and the same tariff for a GSM termination call and for an UMTS one.

PTS stated that substitution exists between techniques. The end customer does not know which network is used for the termination due to roaming between networks and number portability.

According to Ofcom common pricing constraints imply 1) the market definition is wholesale voice call termination supplied to callers to all the subscribers of a specific network and 2) termination over both an MNO's 2G and 3G network because originating operators are charged the same rate whether the call is terminated over the terminating operators 2G or 3G network.

Many NRAs explicitly excluded termination of SMS or mobile data from the market definition. The common argument for exclusion is that these services do not substitute a voice call as they do not place significant competitive pressure on the setting of voice call termination prices in the mobile networks. RTR stated that SMS are not necessarily a bundle as in origination.

NPT and PTS included voice call termination on MVNO networks and BNetzA explicitly excluded MVNO. NPT stated that the MVNO controls access to the network termination product, from both a technical and economic perspective, and is thus included in the market definition. In Germany the MVNO in the market does not yet exist and no market entry is predictable.

VI.2.3 Geographic definition

The geographic market was defined as national or it was delineated by the coverage of each mobile network. PTA and NPT included the coverage obtained through national roaming agreements. The Commission asked ARCEP to distinguish between the metropolitan area and the overseas territories and to notify separate decisions.

VI.2.4 Other issues

ARCEP analysis was made on the basis that the French mobile operators would stop using the bill and keep system. Indeed, by ART decisions this system is not used anymore in France from 1st January 2005.

VI.3 Market analysis

VI.3.1 Main Issues Arising

The below table identifies the main issues which were encountered by NRAs when assessing market power in market 16.

	Indirect pricing constraint / Self supply	Competition vs. supply side substitution	Assessing market power 'absent regulation'	Forward-looking assessment	Market power in closely related markets	Other
Austria (RTR)	No	No	No	No	No	
Finland (Ficora)	No	Yes	No	No	Yes	
France (ARCEP)	No	No	No	No	No	
Germany (BNetzA)	N/A	Yes	N/A	Yes	N/A	
Greece (EETT)	No	Yes	Yes	Yes	No	
Hungary (NCAH)	No	Yes	No	Yes	No	
Iceland (PTA)	Yes	Yes	No	No	No	
Ireland (ComReg)	No	Yes	No	Yes	No	
Italy (AGCOM)	Yes	Yes	Yes	Yes	No	
Lithuania (RRT)	Yes	Yes	No	Yes	No	
Norway (NPT)	No	No	No	No	No	
Portugal (ANACOM)	No	No	No	No	No	Yes
Romania (ANRC)	No	No	No	No	No	
Sweden (PTS)	Yes	Yes	No	Yes	No	
Denmark (NITA)	Yes	Yes	No	Yes	No	
Netherlands (OPTA)	No	Yes	No	Yes	Yes	Yes
UK (OFCOM)	Yes	Yes	No	Yes	No	

Other issues as identified by:

- Portugal: The analysis of pricing - Operators generally stood at the maximum level permitted by regulatory intervention up to 2003.

- The analysis of countervailing buyer power - ANACOM concluded that, at the retail level, there are generally no buyers with enough countervailing power to condition the mobile network operators when supplying voice call termination services. This is mainly due to the calling party pays principle used in Portugal. As for the wholesale level it was also concluded that it is not clear that any buyer of voice call termination services has enough countervailing power to counter the monopolist position of the mobile network operators in the supply of those services and thus prevent the mobile network operators from acting independently of competitors, customers and consumers.

- The Netherlands: Benchmark illustrates that Dutch MTR are high.

VI.3.2 Most Important Criteria

There were consistent conclusions in relation to market analysis and SMP designation among respondents in this market. Very similar criteria were used by NRAs to establish market power: market share, lack of countervailing bargaining power, lack of potential competition, pricing, infrastructure advantage.

1. **Market shares**

As a result of market definition which was generally defined by NRAs in terms of operators own network, all operators were found to have 100% market share on their own network. This meant automatic presumption of dominance, this finding was substantiated by using other additional criteria in assessing market power.

2. **Lack or absence of countervailing buying power**

A criteria used by most (12) of the NRAs was absence of or low countervailing bargaining power of the customers buying the mobile termination. Based on market data it was concluded by ComReg that incumbent large fixed operator does not have countervailing buyer power as it is obliged to provide interconnection to all operators. Also EETT concluded that the fixed incumbent is unable to exert any pressure given its obligation to terminate calls originated at a regulated price. GSM gateways exert limited pressure which is not enough to reduce termination rates.

ANACOM concluded that there are generally no buyers with enough countervailing power to condition the mobile network operators when supplying voice call termination services. This is based on the use of the calling party pays system in Portugal. After analysing the behaviour of the mobile operators in Portugal, it is not clear that any buyer of voice call termination services has enough countervailing power to counter the monopolist position of the mobile network operators in the supply of those services and thus prevent the mobile network operators from acting independently of competitors, customers and consumers.

In Ofcom's view, generally, originating operators are not able to exercise sufficient buyer power to overcome the monopoly position of the terminating MNO's. It was necessary to consider the relative sizes of the terminating MNO's and originating MNO's networks. Largest originating operator is BT which is large compared to the MNO's which could mean that it might have the ability to exercise countervailing buyer power, however, BT has an obligation to interconnect with all operators (including MNO's) and therefore in Ofcom's view this dampens its ability to exercise countervailing buyer power. In the case of the other originating FNO's, Ofcom's view was that these are much smaller and would not be in a position to exercise countervailing buyer power. In the case of an MNO originating a call (buyer of termination) they would not have a credible commercial incentive to threaten to not interconnect with another MNO (exercising countervailing buyer power).

ARCEP noted that France Telecom which is the main termination call buyer within the fixed operators category does not have any real countervailing power because of its universal services obligations, as it must make available all phone calls towards all operators. Furthermore, it would not make sense for France Telecom not to offer phone calls from its network to mobile operator networks. Concerning mobile operators, they cannot refuse to route traffics towards other mobile operators. Also NCAH concluded that an operator buying a termination service has a constraint of buying since the customer's call must be forwarded, therefore the quantity of termination service can not be reduced.

OPTA analysed the following possibilities: indirect interconnection (transit), SIM-switches, closed user groups. However, because of the monopolies of MTA suppliers and because of the calling party pays principle, none lead to significant countervailing buyer power.

Both BNetzA and RTR had assessed the possibility of switching or otherwise exerting countervailing buyer power for customers at the wholesale and retail level. Their conclusion was that countervailing buyer power was low or did not exist. BNetzA based its analysis on market data, opinion surveys, RTR on qualitative arguments.

Similarly PTA concluded that there are limited possibilities of countervailing buyer power at retail level and little incentive to lower termination price at wholesale level unless the NRA intervenes. Also PTS found that the actual development of prices indicated lack of buying power, in particular by fixed network operators.

According to RRT's information the relevant undertakings were delaying negotiations concerning the network interconnection, which shows that a buyer does not have the possibility to exert the countervailing buying power.

3. Absence or lack of potential competition

A criteria used by most (9) of the NRAs was the absence or lack of potential competition. This was the most important criteria for ComReg which concluded that there are high and non-transitory barriers to entry-requirement to get a licence and to build-out network. Each MNO is a monopoly provider of voice termination on its own network.

ANACOM and PTA stated the fact that current technologies do not allow the termination service in a given network to be offered by an entity other than the operator holding the network in question. This constitutes a barrier hindering any entry into the market for termination in the network of each mobile operator. Also EETT considered new MNO market entry highly unlikely as there are no viable alternatives to allow any operator other than the terminating MNO to terminate voice calls to subscribers on its network. NCAH stated that a call can be terminated only in the network of a given operator.

ARCEP concluded that it is technically not feasible for a new operator to enter one of the existing voice termination markets and to compete on this market with the mobile operator network in place, and Ficora maintained that it is not possible to substitute termination in one network with the termination in another network. BNetzA and PTA concluded that there is no supply side substitution.

RRT referred to the existing natural technological barriers and “the calling party pays” principle which create prerequisites for a monopolistic situation in the market of voice call termination on the public mobile networks. There are no technological alternatives to create a possibility for competition on the market of voice call termination on public mobile networks.

4. **Absolute or high barriers to entry**

This criteria is linked to lack of potential competition. Ficora maintained that market entry is restricted by the required license and the construction of a mobile network is expensive and time-consuming. Also OPTA and ANRC considered the entry barriers high. For technological reasons Ofcom considered that there are effectively absolute barriers to entry i.e. it is not possible for a competing operator to supply termination on another operators network. Also PTA, RTR, RRT and NPT regarded the barriers to entry absolute.

5. **Pricing**

ANACOM analysed the pricing of the operators and considered it high. Operators generally stood at the maximum level permitted by regulatory intervention up to 2003. Market analysis by ARCEP shows that without ARCEP action on call termination prices, there will not be any incentive for mobile operators to cut down their voice call termination tariffs. Analysis was based on the calculation of average prices including the prices of mobile operators while applying the ARCEP methodology set up under the old framework. ARCEP also analysed costs given by operators and price trends on the markets.

ComReg concluded that return on Capital Employed (estimate of profitability) persistently and significantly exceeded the cost of capital and thus indicated that prices charged by particular MNOs were higher than would be found in an effectively competitive market. In its analysis ComReg used market data and financial results of the operators. RTR maintained that there are strong incentives to charge monopoly prices. The cost savings have never been voluntary passed on to end users and therefore the prices have been regulated in Austria since 1999.

Also PTA noted that termination prices are higher than the cost indicates. There is too big difference between prices of on-net calls and off-net calls. Termination prices should be more similar between the operators. RRT concluded that the prices for voice call termination on individual mobile network are not sufficiently low in comparison with the relevant retail prices of on-net calls. Such a disparity constitutes one of the major competition problems in the markets of voice call termination on individual mobile networks. It is noteworthy that the ratio of wholesale and retail prices (i.e., prices for voice call termination on individual mobile network vs. relevant retail prices for on-net calls) often exceeds one.

This price ratio creates the conditions for the rise of the so-called snowball effect and preconditions for relevant undertaking to close the relevant market. The operator can sustain prices at an extensively high level and/or apply price-squeeze, to the detriment of end-users. Also, price discrimination was observed during market analysis.

VI.4 Types of data used

Most NRAs used data from questionnaires sent to operators. Also consumer surveys, complaints from the market and information collected by the IRG Mobile WG were used.

Data used for defining the relevant markets and evidence for the most important criteria used in market analysis include:

- Mobile termination minutes and trends
- Mobile termination revenue and trends
- Mobile termination prices and price trends indicating lack of buying power
- Mobile termination prices in other European countries
- Market shares
- Number of subscribers
- Consumer research on consumers behaviour and cost awareness
- Coverage of networks
- Technological, investment and access-related barriers
- Sizes of the terminating MNO's and originating MNO's networks and operators financial results

VI.5 Remedies

VI.5.1 SMP operators from a same country have been imposed the same set of remedies

Six NRAs (Anacom, NCAH, OPTA, ARCEP, RTR[6] and RRT) imposed or proposed the same set of remedies on all SMP-operators. The rest of NRAs (10 NRAs) imposed different sets of remedies on the SMP operators. Typically the price control obligations on small or entrant operators were lighter. Some NRAs did not impose Accounting separation obligation or Cost accounting obligations on smaller entrant operators. They justified this by e.g. proportionality, size of

[6] RTR applies symmetric remedies (also for MVNOs) although the glide path designed is different for the different mobile operators (as they start at different levels).

the operators, different time of entry in the market, differences in average costs, differences in market shares, differences in economies of scale and scope. Also the fact that a MVNO does not fully control its own costs and has to “rent” the network on commercial terms, was mentioned.

VI.5.2 Remedies imposed are homogeneous

Ten NRAs made use of the full set of remedies prescribed in the Access Directive and imposed or proposed the full set of remedies at least on some of the SMPs: Transparency (Art. 9), Non-discrimination obligation (Art 10), Accounting separation obligation (Art. 11), Access-obligation (Art. 12) and Price control and Cost accounting obligation (Art 13). These NRAs in question are: ANRC[7], ANACOM, ARCEP, ComReg, Ficora, Agcom, NITA, PTS, PTA, NCAH,

Seven other NRAs made use of the same set of remedies as above, except imposing or proposing to impose the Accounting Separation obligation on any of the SMP-operators. These NRAs are: ANRC, NPT, RTR, Ofcom, OPTA, RRT and EETT. Accounting Separation is a supporting remedy in nature and it does not address any competition problem as such. Its use may depend on the price control method applied by an NRA, which may have the separated accounts from another source than through the Accounting Separation obligation.

The market definition may have an effect on the remedies imposed. For instance, PTA did not propose cost-accounting obligation on termination prices in NMT network as it did in the case of GSM networks.

The issues dealt in the market analyses may have an effect on the reasoning behind the remedies. For instance ANRC concluded that the small operators are already regulated by the countervailing negotiating power of their competitors. ANRC did not impose the cost orientation obligation on the small operators.

VI.5.3 Competitive problems addressed

The NRAs’ reasons for imposing transparency obligations (art 9) were to prevent: discrimination on price and other parameters, foreclosure tactics against greenfield operators, lack of transparency, competition distortion behavior by pricing means (redistribution of income among the operators (fixed/mobile) not justified by their costs), discrimination in interconnection agreements among the operators.

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[7] The big mobile operators have the obligation of separate accounting, within the internal accounting, for all the activities related to interconnection to the public mobile telephony network they operate, for call termination. But, applying the proportionality and opportunity principles, ANRC has not issued the detailed principles and conditions (the methodology) based on which the separate accounting is kept, and, consequently, the obligation did not enter practically into force for the time being. In comparison to accounting separation obligation, ANRC has issued the decisions for approving the methodology of carrying out the top-down costing model for the calculation of the long run incremental costs by the 2 big mobile operators.

The NRAs' reasons for imposing Non-discrimination obligations (art 10) were to prevent: discrimination on prices, terms and quality, foreclosure tactics against greenfield operators by quality and price discrimination, vertical leveraging by non-price discrimination, differentiation of buyers of the termination services based on peak, off-peak services. For vertically integrated operators and complexity of services supplied: risk of discrimination between operators and between SMP operators and the others, risk of giving their internal organization and subsidiaries more favorable terms. Internal transfer between network and commercial division charges have to be priced, in order to guarantee the same economies to operators and to internal commercial divisions

The NRAs' reasons for imposing Accounting separation remedy (art 11) were to prevent: excessive pricing, unfair cross – subsidy and discrimination, competition distortion behavior, It was considered a supportive remedy for price control and cost accounting and non-discrimination. It is imposed to guarantee wholesale price transparency and to impede unfair cross-subsidy, to monitor interconnection pricing.

The NRAs' reasons for imposing Access obligations (art 12) were to prevent: potential denial of interconnection, foreclosure tactics against greenfield operators by denial of access, refusal to deal, vertical leveraging by denial of access, rejection of the request for interconnection or access in contradiction with the interest of competitors or consumers, potential risk for subscribers to be discriminated depending on different mobile networks.

The NRAs' reasons for imposing Price control and Cost accounting obligations (art 13) were to prevent: excessive pricing, allocative inefficiencies (especially from fixed to mobile), foreclosure tactics against greenfield operators, competition distortion with pricing means.

VI.5.4 Specific content of obligations

The NRAs defined the specific content of the Transparency obligation e.g. in the following way: publication of RIO, publication of interconnection tariffs, publication of termination fees on operators' web sites, obligation to inform the NRA about changes in RIO 60 days before they happen, publish changes in access prices before implementation, submit required information and data to the NRA.

The NRAs defined the specific content of the Non-discrimination obligation e.g. in the following way: obligation of non discrimination in quality and price, non-discrimination in access and interconnection conditions, described in RIO, the operator cannot differentiate among the providers based on the peak off-peak fees of the wholesale market, the operator should not discriminate against its customers and its competitors in issues regarding access to its network, the operators shall specifically ensure that operators under equal conditions offer other businesses (who offer equal services) equal terms, and that operators offer services and convey information to others on the same terms and of the same quality as the services they offer to themselves.

The NRAs defined specific content of the Accounting separation obligation in the following way: One NRA stated that for the divisions of core network, retail and other activities – separated accounting reports should reflect real revenues and costs of the divisions of the invested capital, the divisions' reports should contain those transfer costs and transfer revenues occurring when a given division uses the service of another division. Another NRA defined the obligation as follows: the operator shall separate in its accounts the functions that concern interconnection of the mobile network and communications services as a whole from the other service provision activities of the operator. Two NRAs stated that the final details will be the subject of a public consultation and one stated that the details will be published at a later time,

The NRAs defined specific content of Access obligation e.g. in the following way: obligation to interconnect; the operator should grant all reasonable requests; the operator can not withdraw unreasonably access to specific network elements and services permitted earlier, if there is demand which is justified economically and technically; the operator is obliged to interconnect or access its network to another's operator's network; obligation to provide network access on reasonable request; interconnection obligation, obligation to provide leased lines for interconnection with other operators for three operators; obligation to provide direct accounting on reasonable request for all operators; the SMP-operator shall interconnect communications network to the communications network of another operator, obligation to offer access to its network; access should be offered in the shortest possible timeframe under reasonable conditions, meet reasonable requests for access on fair and reasonable terms.

The NRAs defined specific content of Price control e.g. in the following way: price cap regulation; cost oriented prices; LRAIC of an efficient operator, cost oriented prices based on LRAIC or LRIC; bottom up LRIC; best practice based on a comparison with prices of three other countries.

The NRAs defined specific content of Cost accounting obligation e.g. in the following way: cost accounting; the SMP operator shall use cost accounting procedures, but the SMP operator may itself select the cost accounting procedure it uses.