COMMISSION OF THE EUROPEAN COMMUNITIES

COMMISSION RECOMMENDATION

On Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services

(Text with EEA relevance).

EXPLANATORY MEMORANDUM

1. INTRODUCTION

The Lisbon European Council of March 2000 highlighted the potential for growth, competitiveness and job creation of the shift to a digital, knowledge-based economy. In particular it emphasised the importance of access to inexpensive, world-class communications infrastructure and services. The legislative package for the electronic communications sector aims to establish a harmonised regulatory framework for networks and services across the EU and seeks to respond to convergence trends by covering all electronic communications networks and services within its scope. The national measures implementing the new legislation will apply from 25th July 2003, when it will supersede the national measures implementing the existing 1998 legislative framework. The Barcelona European Council of March 2002 encouraged Member States to ensure timely implementation of the package.

The new regulatory framework for electronic communications networks and services comprises five Directives:

> Directive of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services[1], hereinafter the Framework Directive

> Directive of the European Parliament and of the Council on the authorisation of electronic communications networks and services[2], hereinafter the Authorisation Directive

> Directive of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and associated facilities[3], hereinafter the Access Directive

> Directive of the European Parliament and of the Council on universal service and users' rights relating to electronic communications networks and services[4], hereinafter the Universal service Directive

> Directive of the European Parliament and of the Council concerning the processing of personal data and the protection of privacy in the electronic communications sector[5]

Article 15(1) of the Framework Directive requires the adoption of a Recommendation on Relevant Product and Service Markets, hereinafter 'this Recommendation'. This Recommendation will identify those product and service markets within the electronic communications sector, the characteristics of which may be such as to justify the imposition of regulatory obligations set out in the specific directives. This is without prejudice to markets

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1 OJ L 108, 24.4.2002, p. 33.
2 OJ L 108, 24.4.2002, p. 21.
3 OJ L 108, 24.4.2002, p. 7.
4 OJ L 108, 24.4.2002, p. 51.
5 OJ L 201, 31.7.2002, p. 37.

that may be defined in specific cases under competition law. The markets identified in this Recommendation will be markets defined in accordance with the principles of competition law.

This Recommendation should be considered in conjunction with the 'Guidelines for market analysis and the assessment of market power' referred to in Article 15(2) of the Directive[6] (hereinafter, “the Guidelines”). National regulatory authorities (“NRAs”) are required, taking utmost account of this Recommendation and the Guidelines, to define relevant markets appropriate to national circumstances, in particular relevant geographic markets within their territory, in accordance with the principles of competition law and to analyse those product and service markets, taking the utmost account of the Guidelines.

On the basis of this market analysis, NRAs will determine whether these markets are effectively competitive or not and impose, amend, or withdraw regulatory obligations accordingly.

The new regulatory framework aims at ensuring harmonisation across the single market and guaranteeing legal certainty. This Recommendation plays an important role in achieving both of these objectives, as it seeks to ensure that the same product and services markets will be subject to a market analysis in all Member States and that market players will be aware in advance of the markets to be analysed. It will only be possible for NRAs to regulate markets which differ from those identified in this Recommendation where this is justified by national circumstances and where the Commission does not raise any objections, in accordance with the procedures referred to in Articles 7(4) and 15(3) of the Framework Directive. As competition and convergence develops, it is expected that the range of markets identified in this Recommendation will in the future be reduced.

Looking ahead, the eEurope 2005 Action Plan promotes a multi-platform approach to broadband deployment, driven by strong competition between services provided over competing platforms. Competing network infrastructures are essential for achieving sustainable competition in networks and services in the long term. When there is effective competition, the new framework requires ex-ante regulatory obligations to be lifted. In the meantime however, those undertakings that were privileged to install infrastructure facilities under special or exclusive rights continue to benefit from those earlier investments – in particular those relating to long-lived facilities in the local access network. Granting others access to these facilities in a way that levels the playing field but does not remove incentives for new infrastructure investment ensures that users enjoy choice and competition during the transition to a fully competitive market. Investment in new and competing infrastructure will bring forward the day when such transitional access obligations can be relaxed.

In addition to the markets identified by the Commission in this Recommendation, the Directives also requires that NRAs analyse certain specific markets. For instance, the Universal Service Directive identifies the markets for the minimum set of leased lines[7], and for the provision of access to and use of the public telephone network at a fixed location[8]. The Access Directive also foresees the possibility for NRAs to limit obligations concerning

[6] OJ C 165, 11.7.2002, p. 6.
[7] Article 18 of the Universal Service Directive.
[8] Article 19 of the Universal Service Directive.

conditional access systems to undertakings with significant market power, following a market analysis, but this limitation is at the discretion of individual Member States[9].

NRAs define relevant markets appropriate to national circumstances, taking utmost account of the product markets listed in this Recommendation, in particular relevant geographic markets within their territory. The definition of relevant markets can and does change over time as the characteristics of products and services evolve and the possibilities for demand and supply substitution change. This is particularly important where the characteristics of products and services are continually evolving, where new products and services appear and where the way in which such products and services are produced and delivered evolves as a result of technological evolution. The convergence phenomenon where similar services can be delivered over different types of network is one example. This means that it will be necessary periodically to re-examine the markets identified in this Recommendation. At the same time the underlying purpose of the new regulatory framework (and its ex ante market analysis and possible regulation) is to deal with predictable problems of lack of effective competition. The fact that the new framework deals with situations where any lack of effective competition is durable means that a degree of continuity (as opposed to frequent revisions of this Recommendation) is warranted.

In accordance with Article 5 of the Framework Directive 2002/21/EC, Member States should ensure that NRAs have at their disposal whatever powers are necessary to gather data to allow a market analysis of any market which is covered by the new framework, regardless of whether it is identified in this Recommendation or not, or whether it is a wholesale or retail market.

2. TRANSITION FROM THE CURRENT TO THE NEW FRAMEWORK

Provisions in the new regulatory framework allow a smooth transition from the 1998 regulatory framework to the new regulatory framework. In accordance with Article 16 of the Framework directive, NRAs are required to carry out an analysis of relevant markets as soon as possible after the Recommendation is adopted.

In doing so, NRAs will be reviewing obligations imposed under the 1998 regulatory framework, as required by Article 7 of the Access Directive and Article 16 of the Universal Service directive. Article 16(1) of the Framework directive requires NRAs to begin their market analysis “as soon as possible after the adoption of the recommendation or any updating thereof”. The Commission would expect these analyses to be completed in most cases and where possible by 25 July 2003, the date of application of the new regulatory framework. If the analyses are not completed, or the resulting measures not yet in place, by that date, Article 27 of the Framework directive ensures continuity with the existing regulatory framework by requiring NRAs to maintain the obligations imposed under national law in implementation of the 1998 regulatory framework until such time as they have been reviewed under the new regulatory framework.

Under the 1998 regulatory framework, several areas in the telecommunications sector are subject to ex ante regulation. These areas have been delineated in the applicable directives, but are not always "markets" within the meaning of competition law and practice. Annex I of

[9] Article 6 of the Access Directive.

the Framework directive provides a list of such market areas to be included in the initial version of the Recommendation.

Table 1 sets out the market areas in which undertakings are subject to existing obligations under the 1998 regulatory framework, and lists the corresponding market areas included in Annex I of the Framework directive.

Table 1 : Market areas subject to obligations under the 1998 framework – link to Annex I Framework directive under the new regulatory framework

Market area subject to obligations under the 1998 regulatory framework	**Market area listed in Annex I of the Framework directive**
RETAIL	
Fixed public telephone networks and voice telephony services Directive 98/10/EC[10]	The provision of connection to and use of the public telephone network at fixed locations.
Leased lines, including the minimum set of leased lines Directive 92/44/EEC[11]	The provision of leased lines to end users.
WHOLESALE	
Fixed public switched telecommunications networks – interconnection Directive 97/33/EC[12] Art 7.1, Annex I part 1	call origination in the fixed public telephone network call termination in the fixed public telephone network transit services in the fixed public telephone network
Fixed public switched telecommunications networks – unbundling of the local loop Regulation 2887/2000/EC[13]	access to the fixed public telephone network, including unbundled access to the local loop
Fixed public switched telecommunications networks – carrier (pre)selection Directive 97/33/EC Art. 12(7), introduced by 98/61/EC	call origination in the fixed public telephone network
Leased lines services – interconnection Directive 97/33/EC Art. 7(1), Annex I part 2	wholesale provision of leased line capacity to other suppliers of electronic communications networks or services leased line interconnection (interconnection of part circuits)
Mobile public switched telecommunications networks – interconnection (linked to national market for interconnection) Directive 97/33/EC Art. 7(2), Annex I part 3	call origination on public mobile telephone networks call termination on public mobile telephone networks

10 OJ L 101, 1.4.1998, p. 24.
11 OJ L 295, 29.10.1997, p. 23.
12 OJ L 199, 26.7.1997, p. 32.
13 OJ L 336, 30.12.2000, p. 4.

Where a NRA concludes that a market identified under the new framework is effectively competitive, that is, no operator is found to enjoy significant market power in the relevant market, the NRA removes all existing specific obligations on operators previously designated as having significant market power.[14] Conversely, where a NRA determines that a relevant market is not effectively competitive, it must impose appropriate regulatory obligations or alternatively maintain or amend existing obligations on undertakings with significant market power. In some cases, therefore it may be that regulatory obligations imposed under the 1998 regulatory framework are re-imposed under the new regulatory framework, albeit in respect of designations of significant market power on relevant markets defined and analysed in accordance with the new regulatory framework.

3. MARKET DEFINITION, IDENTIFYING MARKETS AND DEFINITION OF OTHER MARKETS

3.1. Methodologies used to define markets

In the new regulatory framework, markets are defined in accordance with the principles of competition law, as explained in the Commission Notice on Market Definition[15] and the Guidelines.

The main purpose of market definition is to identify in a systematic way the competitive constraints that the undertakings face. The objective is to identify those actual and potential competitors of the undertakings that are capable of constraining their behaviour and of preventing them from behaving independently of an effective competitive pressure. The market definition arrived at can depend on the relative weight given to demand-side and supply-side substitutability, and can also depend on the prospective time horizon considered. It is important to recall that market definition for the purposes of the Recommendation is not an end in itself but is a means to assessing effective competition for the purposes of ex ante regulation.

As stated in the Commission's Guidelines and Access Notice[16], there are in the electronic communications sector at least two main types of relevant markets to consider, that of services or facilities provided to end users (retail markets) and that of access to facilities necessary to provide such services provided to operators (wholesale markets). Within these two types of markets, further market distinctions may be made depending on demand and supply side characteristics.

The starting point for the definition and identification of markets is a characterisation of retail markets over a given time horizon[17], taking into account demand-side and supply-side substitutability[18]. Having characterised and defined retail markets which are markets involving

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14 All obligations imposed as SMP obligations must be removed, but certain obligations may be imposed on non-SMP operators in accordance with Article 8(3) of the Access Directive. These latter obligations would not be affected by the withdrawal of a SMP designation.

15 OJ C 372, 9.12.1997, p. 5.

16 OJ C 265, 22.8.1998, p. 2.

17 Ex ante regulation addresses lack of effective competition that is expected to persist over a given horizon. Therefore, the time horizon for market definition and identification for the purposes of this Recommendation should be commensurate with the period during which possible ex ante regulatory remedies are likely to be imposed. The period may depend on whether an existing obligation is being maintained or reviewed, or a new obligation is being imposed.

18 See section 2 of the SMP Guidelines.

the supply and demand of end users, it is then appropriate to identify relevant wholesale markets which are markets involving the demand and supply of products to a third party wishing to supply end users.

As the market analyses carried out by NRAs have to be forward-looking, markets are defined prospectively[19]. Their definitions take account of expected or foreseeable technological or economic developments over a reasonable horizon linked to the timing of the next market review. Moreover, given the possibility to review a market at regular intervals, a NRA would be justified in taking into account past performance and existing market position as well as expectations concerning forthcoming developments.[20]

Markets defined in the Recommendation are without prejudice to the markets defined in specific cases under competition law. Markets identified in the Recommendation, while based on competition law methodologies, will not necessarily be identical to markets defined in individual competition law cases. As explained in paragraph 27 of the Guidelines, the starting point for carrying out a market analysis for the purpose of Article 15 of the Framework Directive is not the existence of an agreement or concerted practice within the scope of Article 81 EC Treaty, nor a concentration within the scope of the Merger Regulation, nor an alleged abuse of dominance within the scope of Article 82 EC Treaty, but is based on an overall forward-looking assessment of the structure and the functioning of the market under examination. NRAs and competition authorities, when examining the same issues in the same circumstances and with the same objectives, should in principle reach the same conclusions. However it cannot be excluded that given the differences outlined above markets defined for the purposes of competition law and markets defined for the purpose of sector-specific regulation may not always be identical.

3.2. The basis for identifying markets in recommendations

Article 15(1) of the Framework Directive requires that the Recommendation identify, in accordance with Annex I of that directive, those product and service markets within the electronic communications sector, the characteristics of which may be such as to justify the imposition of regulatory obligations set out in the specific directives. The starting point for identifying markets in the initial Recommendation is therefore the list of markets in Annex I[21].

One question that arises for the initial Recommendation is whether any markets should be added to the Annex I list. Article 15 of the Framework Directive also requires the Commission to regularly review the Recommendation.

It should be recalled that the Framework Directive is based on the premise that there is a need for ex ante obligations in certain circumstances in order to ensure the development of a competitive market (see e.g. recital 25). Section 2 of this document indicates the ex ante obligations that have been put in place as part of the 1998 liberalisation in order to create the conditions for effective competition under the old definition of significant market power.

In that regard, recital 27 of the Framework Directive indicates that ex ante regulatory obligations (with respect to electronic communications networks and services) should only be imposed where there is not effective competition, i.e. in markets where there are one or more

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19 Framework Directive recital 27.

20 See paragraph 20 of the SMP Guidelines.

21 The Framework Directive requires that markets are defined in accordance with competition law. This necessitates the market areas listed in Annex I to be re-defined accordingly.

undertakings with significant market power, within the meaning of Article 14 of that Directive, and where national and Community competition law remedies are not sufficient to address the problem[22].

Consequently, ex ante regulation and competition law serve as complementary instruments in achieving policy objectives[23] in the electronic communications sector and in dealing with lack of effective competition. At the same time, a principle underlying the new regulatory framework is that ex ante regulation should be rolled back when it is no longer needed.

It is appropriate, therefore, to identify as clearly as possible the circumstances in which ex ante regulation is justified (or conversely the circumstances in which competition law is adequate to deal on its own with problems arising) and to translate this into a basis or set of criteria for identifying relevant markets.

The experience of the initial phase of liberalisation in the European Union is that ex ante regulation has served as an important complement to competition law in dealing with two particular types of problems that market entrants have faced following liberalisation. The first is the need for a market entrant or potential competitor to obtain access to existing networks belonging to other operators in order to serve customers. The second is the fact that the competitive provision of many electronic communications services also depends on negotiating interconnection with other networks to facilitate the necessary connectivity.

This experience does not necessarily imply that these two problems will persist indefinitely or in all circumstances. The evidence arising from the establishment of mobile cellular networks (with respect to the problem of establishing networks) and from the establishment of widespread voluntary agreements to exchange Internet traffic on a best efforts basis (with respect to the interconnection problem) indicates that there have not been persistent obstacles to market entry in these two areas. In addition, technology and markets in this sector can change rapidly, so that an obstacle to the development of competition at one point in time can subsequently be removed or disappear over a given horizon.

It is considered that the criteria for identifying markets for the purposes of the new regulatory framework should include an overall assessment of the effectiveness of competition law alone in addressing the market failures concerned. Such an assessment will draw on the experience gained from the application of competition law and the imposition of ex ante regulatory obligations in the electronic communications sector as a complementary instrument. Only markets where national and Community competition law is not considered sufficient by itself to redress market failures and to ensure effective and sustainable competition over a foreseeable time horizon should be identified for potential ex ante regulation.

It is therefore considered that the following specific cumulative criteria are appropriate to identify relevant markets.

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22 Recital 27 also indicates that newly emerging markets, where de facto the market leader is likely to have a substantial market share, should not be subjected to inappropriate obligations.

23 Article 8 of the Framework Directive requires NRAs to pursue a number of objectives including: ensuring users derive maximum benefits in terms of choice, price and quality; ensuring there is no distortion or restriction of competition; encouraging efficient investment in infrastructure and promoting innovation; encouraging efficient use of and effective management of radio frequencies and numbering resources.

The first criterion is whether a market is subject to high and non-transitory entry barriers. The presence of high and non-transitory entry barriers, although a necessary condition, is not of itself a sufficient condition to warrant inclusion of a given defined market. Given the dynamic character of electronic communications markets, possibilities for the market to tend towards a competitive outcome, in spite of high and non-transitory barriers to entry, need also to be taken into consideration.

The second criterion, therefore, is whether a market has characteristics such that it will tend over time towards effective competition. This criterion is a dynamic one and takes into account a number of structural and behavioural aspects which on balance indicate whether or not, over the time period considered, the market has characteristics which may be such as to justify the imposition of regulatory obligations as set out in the specific directives of the new regulatory framework.

The third criterion considers the sufficiency of competition law by itself (absent ex ante regulation), taking account of the particular characteristics of the electronic communications sector.

1. Barriers to entry and to the development of competition

With respect to the first criterion, two types of barriers to entry and to the development of competition in the electronic communications sector appear to be relevant: structural barriers and legal or regulatory barriers.

A structural barrier to entry exists when, given the level of demand, the state of the technology and its associated cost structure are such that they create asymmetric conditions between incumbents and new entrants impeding or preventing market entry of the latter. For instance, high structural barriers may be found to exist when the market is characterised by substantial economies of scale, scope and density and high sunk costs. Such barriers can still be identified with respect to the widespread deployment and/or provision of local access networks to fixed locations.

A specific and different type of barrier to the development of effective competition can also occur in the electronic communications sector where interconnection is required to enable a calling party to make a call to a specific subscriber number. In cases where a charge is levied for terminating the call, (which is passed on as a retail charge to the calling party), the terminating network operator can affect competition adversely by raising a rival’s costs or by passing on inefficiencies to competitors. This barrier by itself need not lead to an absence of competition. For example, where the receiver rather than the calling party is responsible for paying any charge associated with incoming calls or traffic, the incentive to raise termination charges above costs is absent. Technological solutions might also provide a way round the technical barrier.

Legal or regulatory barriers are not based on economic conditions, but result from legislative, administrative or other state measures that have a direct effect on the conditions of entry and/or the positioning of operators on the relevant market.

One example is the case of a legal limit on the number of undertakings that have access to spectrum. Such a limitation is typically linked to a related technical or technological barrier, e.g., a constraint on the amount of spectrum that can be assigned and consequently a limit on the number of licences given to undertakings seeking to enter a market. Additional entry is blocked unless additional spectrum becomes available or secondary trading of spectrum is permitted.

A significant legal or regulatory barrier to entry may also exist when entry into a particular market is rendered non-viable as a result of regulatory requirements, and in addition this situation is expected to persist for a foreseeable period. Regulatory requirements may lead to some services being provided at below cost or at rates of return that deter entry. One example is the retail pricing of access to the public telephone network (and local calls) at a fixed location or address. In cases where services fail to cover their forward-looking incremental costs, entry into local access is deterred. Tariff re-balancing will address such a barrier. However, broader policy concerns and objectives may mean that the situation persists for a significant period.

2. Dynamic aspects

The second criterion, is whether or not the market has characteristics such that it will tend towards effective competition without the need for ex ante regulatory intervention. The application of this criterion involves examining the state of competition behind the barrier to entry, taking account of the fact that even when a market is characterised by high barriers to entry, other structural factors or market characteristics may mean that the market tends towards effective competition. This is for instance the case in markets with a limited, but sufficient, number of undertakings behind the entry barrier having diverging cost structures and facing price-elastic market demand. In such markets, market shares may change over time and/or falling prices may be observed. It is this structural dynamic element which may push the market to an effectively competitive outcome which is important and can be principally observed in a historical and current context. Future developments are also important but must be developments which are considered in a meaningful timeframe rather than something which may be theoretically possible. This timeframe should be linked to the period between NRA reviews, so as to capture only developments taking effect during that period.

Entry barriers may also become less relevant with regard to innovation-driven markets characterised by ongoing technological progress. In such markets, competitive constraints often come from innovative threats from potential competitors that are not currently in the market. In such innovation-driven markets, dynamic or longer term competition can take place among firms that are not necessarily competitors in an existing “static” market.

3. Relative efficiency of competition law and complementary ex ante regulation

The final decision to identify a market that fulfils the first two criteria (high and persistent entry barriers and absence of characteristics such that the market would tend towards effective competition) as justifying possible ex ante regulation, should depend on an assessment of the sufficiency of competition law by itself (absent ex ante regulation) in reducing or removing such barriers or in restoring effective competition.

Ex ante regulation would be considered to constitute an appropriate complement to competition law in circumstances where the application of competition law would not adequately address the market failures concerned. Such circumstances would for example include situations where the compliance requirements of an intervention to redress a market failure are extensive (e.g. the need for detailed accounting for regulatory purposes, assessment of costs, monitoring of terms and conditions including technical parameters etc) or where frequent and/or timely intervention is indispensable, or where creating legal certainty is of paramount concern.

In practical application NRAs should consult with their NCA and take into account that body's opinion when deciding whether use of both complementary regulatory tools is appropriate to deal with a specific issue, or whether competition law instruments are sufficient.

In summary, whether an electronic communications market continues to be identified by subsequent versions of the Recommendation as justifying possible ex ante regulation would depend on the persistence of high entry barriers, on the second criterion measuring the dynamic state of competitiveness and thirdly on the sufficiency of competition law by itself (absent ex ante regulation) to address persistent market failures. A market could also be removed from a recommendation once there is evidence of sustainable and effective competition on that market within the Community, provided that removal of ex-ante regulatory obligations will not reduce effective competition on the market. For instance it may be found that, through the use of Carrier Pre-selection and Carrier Selection, the national market for residential calls has become competitive. However, since it is the regulatory requirement to grant pre-selection that has allowed effective competition to emerge, it may not be appropriate to remove that regulatory requirement without first analysing the broader implications of such a move.

The Commission expects NRAs to follow the same basic criteria and principles when they identify markets other than those appearing in this Recommendation. These criteria need not necessarily remain unchanged over time; they could for instance be adapted in the light of the experience gained with the implementation of the regulatory framework in respect of identified markets. The Commission will use these criteria when making future revisions to this Recommendation.

3.3. The definition by NRAs of other relevant markets

In this Recommendation, care has been taken to identify (in accordance with Annex I of the Framework directive) markets whose characteristics may be such as to justify the imposition of regulatory obligations as set out in the specific directives. This list of relevant markets may not be exhaustive in the context of national circumstances, which may vary from Member State to Member State. Pursuant to Article 15(3) of the Framework Directive, NRAs may therefore identify markets that differ from those identified in the Recommendation provided they follow the procedures referred to in Articles 6 and 7 of the Framework Directive.

There may be a number of ways in which market definition at a national level, for the purposes of market analysis, might differ from the markets identified in the Recommendation[24].

[24] For example, there might be narrower market definition at a national level of an identified market. According to national circumstances, there might be a reason to broaden the market definition such that two or more markets that are identified separately in this Recommendation are identified as a single market. Similarly, there might be a reason to identify a newly developed market segment and combine it with a market identified in this Recommendation. According to national circumstances, there might be a reason to identify additional markets to those identified in this Recommendation.

The issue of the appropriateness of defining narrower markets should be kept separate from the issue of the identification and application of remedies. In dealing with lack of effective competition in an identified market, it may be necessary to impose several obligations to achieve an overall solution. For instance, it may often be the case that adjacent or related remedies are applied to technical areas as part of the overall obligation that addresses SMP on the analysed market. If specific remedies are thought to be necessary in a specific narrow technical area, it is not necessary or appropriate to identify each technical area as a relevant market in order to place obligations in that area. An example would be where an obligation to provide unbundled access to the local loop is complemented by related obligations concerning access to co-location facilities.

Conversely, an obligation in a related area that is not necessary and proportionate to solve a problem on an identified market cannot be considered to be part of the proposed remedy. If the remedy on the related area went beyond what is necessary to remedy the problem on the identified market then that remedy would not be proportionate. In this case, if the NRA had other reasons to believe such a remedy was necessary on the related area then that would need to be identified as a relevant market and analysed separately in order to impose that obligation.

When NRAs consider redefining markets more narrowly or more broadly for reasons related to national market circumstances they need to follow the principles and the methodology set out in the guidelines and in this Recommendation. There may for example be evidence that demand or supply substitution is possible in part of the market but not (over a given horizon) in the remainder, so that a narrower market definition is justified. One example could be where retail competition for certain well defined and separate categories of residential user is much better developed than for other categories.

Where a market identified by an NRA differs from those identified in the Recommendation, NRAs should follow the procedure set out in Article 6 and 7 of the Framework Directive. At the same time, it may be that the co-operation procedures between NRAs and between NRAs and the Commission (pursuant to Article 7(2) of the Framework directive) and/or the harmonisation procedures (pursuant to Article 19) result in the adoption of more detailed approaches concerning narrower or broader market definition practices across the Community.

In accordance with Article 15(3) of the Framework Directive, NRAs notify pursuant to Article 7(4) of the Framework Directive the draft measure which proposes to define a market different from those identified in the Recommendation. This requirement in Article 15(3) of the Framework Directive for NRAs to notify markets differing from those identified in the Recommendation refers solely to those markets affecting trade between Member States, in accordance with Article 7(3)(b). If a market was not notified on the grounds that an NRA did not foresee an effect on trade between Member States, but an effect on trade was subsequently demonstrated, the failure to notify that market could constitute an infringement of the Directive. Moreover, failure to notify could also have adverse legal consequences in national proceedings.

3.4 Remedies

Remedies are the final part of a process which starts with market definition and identification, which is followed by market analysis and, in the event of an SMP designation, moves to corrective action. Markets susceptible to ex-ante regulation are selected on the basis of the criteria set out in section 3.2. The identification of a market for analysis does not of itself mean that that market requires regulatory intervention. It is only where NRAs find that there is the absence of effective competition on that market that they impose remedies. Even then there needs to be careful consideration of which remedy should be applied. The new regulatory framework is very flexible. NRAs have a suite of regulatory tools at their disposal, as set out in Directive 2002/19/EC and Directive 2002/22/EC. When imposing a specific obligation on an undertaking with significant market power, the NRA will need to demonstrate the obligation in question is based on the nature of the problem identified, proportionate and justified in the light of the NRA's basic objectives as set out in the Framework Directive.

These basic objectives require NRAs to:

– promote competition in the provision of electronic communications networks, electronic communications services and associated facilities and services;.

– contribute to the development of the internal market;

– promote the interests of the citizens of the European Union.

The Framework Directive also requires NRAs to seek to agree between themselves on the types of instruments and remedies best suited to address particular types of situations in the marketplace. In particular, as noted in the Guidelines on market analysis, in order to establish that a proposed remedy is compatible with the principle of proportionality, the action to be taken must pursue a legitimate aim and the means employed to achieve the aim must be both necessary and the least burdensome, i.e. it must be the minimum necessary to achieve the aim.

A number of considerations are set out in the Directives qualifying the use of specific remedies. In particular, before imposing the more onerous remedies, NRAs need to be mindful of the initial investment by the facility owner, bearing in mind the risks involved in making the investment. The NRAs have a duty to safeguard competition in the long term which will inter alia be a function of the need to assess the technical and economic viability of using or installing competing facilities and the effect of such an intervention on possible investment in such competing facilities. This is especially important where new technologies or networks are being deployed in unproven markets.

The availability of a competition law remedy corresponding to that which might be imposed by the NRA does not preclude the NRA imposing a similar remedy. Where, for instance, a firm is in a dominant position under competition law, Article 82 of the Treaty obliges that firm to behave in a non-discriminatory manner; it may for example be appropriate for an NRA to also impose specific ex ante transparency and reporting requirements designed to facilitate the monitoring of the non-discrimination requirement by that firm (for example as regards delivery periods). In addition, imposing an ex-ante remedy would mean that the provisions of the new regulatory framework for dispute resolution and NRA intervention can be invoked in case of problems in that market, in addition to an appeal to the relevant competition authorities.

4. EXAMINATION OF MARKETS IN ORDER TO IDENTIFY RELEVANT MARKETS FOR THE PURPOSES OF THE RECOMMENDATION

This section examines the broad market areas within the electronic communications sector, analyses briefly the relevant retail and wholesale markets within those broad areas, and identifies the specific relevant markets for the purpose of ex-ante analysis of effective competition.

The starting point is a characterisation of retail markets, followed by a description and definition of related wholesale markets, as indicated in section 3.1.

A key aim of the new regulatory framework is to enhance user and consumer benefits in terms of choice, price and quality by promoting and ensuring effective competition. NRAs have powers as a last resort and after due consideration to impose retail regulation on an undertaking with significant market power. However, regulatory controls on retail services should only be imposed where NRAs consider that relevant wholesale or related measures would fail to achieve the objective of ensuring effective competition.[25] In principle, lack of effective competition may occur at the retail level or the wholesale level or both. That means that NRAs may need to examine the overall degree of market power of undertakings and the impact on effective competition. The identification of a retail market for the purposes of ex ante market analysis does not imply, where there is a finding of a lack of effective competition by a NRA, that regulatory remedies would be applied to a retail market. Regulatory controls on retail services can only be imposed where relevant wholesale or related measures would fail to achieve the objective of ensuring effective competition.

Retail markets should in principle be examined, for market definition purposes, in a way that is independent of the network or infrastructure being used to provide services, as well as in accordance with the principles of competition law. At the same time, for the purposes of the initial Recommendation, the starting point for market definition and identification is Annex I of the Framework Directive. Included in Annex I are market areas that are described in relation to specific existing networks and their technical configurations.

Over time, investments will be made to develop new networks and infrastructure as well as to upgrade and change existing networks and infrastructure (e.g. by using fibre or wireless technologies in the access network). The fact that an obligation is applied to an SMP undertaking with regard to a specific type of infrastructure (e.g., metallic local loops) does not imply that a parallel obligation will be applied when networks and infrastructure are upgraded, for example to deliver (or be capable of delivering) new services. Where new types of infrastructure are used to provide existing services, any regulatory intervention (in respect of that new type of infrastructure) would depend on a revised market analysis. Indeed, encouraging efficient investment in infrastructure and promoting innovation are explicit objectives for regulators[26].

4.1. Product and service markets in the electronic communications sector

Electronic communications networks and services are defined in the Framework Directive. Electronic communications services include telecommunications services and transmission services in networks used for broadcasting, but exclude services providing or exercising editorial control over content transmitted using electronic communications networks and services. They do not include information society services, as defined in Directive 98/34/EC, which do not consist wholly or mainly in the conveyance of signals on electronic communications networks[27].

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[25] Universal Service Directive recital 26.

[26] Framework Directive, Article 8(2)c.

[27] Framework Directive Article 2.

In examining retail and wholesale markets for the purposes of the Recommendation, a general division is made between services provided at fixed locations and those provided to non-fixed locations. A general distinction is also made between voice services and non-voice (data) services. These distinctions for the purposes of analysing markets do not imply an advance judgement that these services constitute separate markets. However, at the current time voice and data services are considered overall to be sufficiently distinct in terms of demand substitution that they are analysed separately. At a wholesale level, this distinction between voice and non-voice services may be less easy. For example a transmission channel may carry (or be capable of carrying) both voice and non-voice services[28]. These issues are dealt with in the relevant analysis sections.

Across the EU different Member States have communication network topologies which differ significantly from each other. In that context the distinction between what constitutes a service such as call origination or what constitutes a transit service in terms of what parts of the network are involved will differ across Member States. It is left to the NRAs to decide on such technical aspects, in the light of national circumstances within the constraints set out in this Recommendation.

4.2. Services provided at fixed locations

4.2.1. Public telephone services provided at fixed locations

The aim of this section is to (i) describe and define relevant retail markets for voice services provided at fixed locations[29], (ii) define the linked wholesale markets and (iii) identify markets in accordance with Annex I of the Framework directive.

Retail Markets

The retail market at a general level can be described as the provision of a connection or access (at a fixed location or address) to the public telephone network for the purpose of making and/or receiving telephone calls and related services. Such access and services may be supplied by several possible means in respect of the undertaking providing the service and the technology that is used. The most common technology currently employed is via traditional telephone networks using metallic twisted pairs. Current alternatives include cable TV networks offering telephone service, mobile cellular networks that have been adapted to provide service to fixed locations, and other wireless based networks. Of these alternatives, only cable networks have any extensive roll out in any Member States. The extent to which they are currently capable of supplying voice services varies greatly across Member States and overall is still limited. For locations where there is demand for a large number of user connections, some form of dedicated access may be used. In the future a wider range of technologies is likely to be used commercially to provide local access and the provision of services including the public telephone service.

It is common to distinguish between business and residential markets because the contractual terms of access and service may vary. In addition, it will not normally be possible for a

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[28] This raises the question of technical neutrality with respect to the treatment of services and the means by which they are delivered. As well as recognising that some services may constitute substitutes, irrespective of technical provision, it is also necessary to recognise that different services may be characterised by different technical requirements within a given network, for example in terms of delay (real-time or not) and bandwidth (and the level and variance of these technical requirements).

[29] Dial-up Internet services are treated in section 4.2.2 on access to data and related services.

supplier to the business market to respond to price increases by a hypothetical monopolist in the residential market because the economics of serving customers in the two locations may be significantly different. Therefore it is appropriate to distinguish end user categories in the markets defined.

Telephone service is usually supplied as an overall package of access and usage. Various options and packages may be available to end users depending on their typical usage or calling patterns[30]. Although many end users appear to prefer to purchase both access and outgoing calls from the same undertaking, others choose alternative undertakings from the one providing access (and the receipt of calls) in order to make some or all of their outgoing calls. An undertaking that attempted to raise the price of outgoing calls (in particular for national and international calls) above the competitive level would face the prospect of end users substituting alternative service providers. End users can relatively easily choose alternative undertakings by means of short access codes, (via contractual or pre-paid means) or by means of carrier pre-selection. Whilst undertakings that provide access compete on the market for outgoing calls, it does not appear to be the case that undertakings supplying outgoing calls via carrier selection or pre-selection would systematically enter the access market in response to a small but significant non-transitory increase in the price of access. Therefore, it is possible to identify separate retail markets for access and outgoing calls.

In respect of outgoing telephone calls, end users do not perceive local, national and international calls to be substitutes for each other. Therefore, it can be argued that these constitute separate retail markets. However, an increase in the price of calls in one of these categories by a hypothetical monopolist could induce service providers in one of the other categories to purchase the wholesale elements needed, provided that they are available, to supply the relevant services. There are however, particular restrictions which limit this ability to purchase all the wholesale elements in an international calls market.

Calls from fixed locations to mobile telephones or indeed to other non-geographic locations are likewise not perceived by end users to be sufficiently substitutable to be considered in the same market in terms of demand. A user wishing to call an individual on a mobile phone is unlikely to consider a call to a fixed line number an equivalent. However, just as with geographic equivalents service providers providing one category of services can be expected to be in a position to purchase the wholesale elements that are needed including mobile termination if a hypothetical monopolist attempts to increase prices.

Therefore, on the basis of supply substitution, it will normally be appropriate to define a broader market for outgoing calls at the retail level. However where supply-side substitution is not possible or is very limited it may be appropriate to define narrower markets.

Related Wholesale Markets

Wholesale access and call origination

At the retail level, a distinction has been made between access and outgoing calls. An undertaking may make a decision to enter the combined market for access and calls or simply enter part or all of the calls market. In assessing the relevant linked wholesale markets, it is necessary, therefore, to bear in mind that there are a number of means of addressing the retail markets.

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30 The question of whether metered and un-metered (flat-rate) access are in the same or separate markets is considered in section 4.2.2.

With respect to access, the main alternatives are between building or buying as indicated below. The latter option potentially includes any transmission path that is capable of supporting voice services, e.g. a leased circuit, an unbundled local loop or the wholesale provision of digital subscriber line or bit-stream services. Such alternatives are also capable of supporting the provision of data services or multiple voice channels and are considered in more detail in sections 4.1.2 and 4.1.3.

The main elements required to produce or supply retail telephone service are call origination, call conveyance (including routing and switching) of varying kinds and call termination. Related elements include signalling and the ancillary services needed, for example, for billing purposes. An undertaking that supplies retail telephone service could purchase these inputs separately or together, or produce all of them by constructing an extensive network, or purchase some and produce others. One direct alternative to the purchase of call origination is to establish network access to the end user location. Another alternative is to purchase or lease an established network connection to the end user location. Neither of these alternatives, which entail considerable investments, is likely to be widely possible in response to a price rise that is non-transitory but small by a hypothetical monopolist in the market for call origination. The alternatives may however be viable in the context of a broader retail market (including the provision of non-voice services) or in circumstances where end user expenditure is sufficiently high.

An indirect alternative to call origination is for an undertaking providing service to obtain retail connections to the public telephone network in relevant areas in order that end users can dial-in to a point of presence of the undertaking in order to use onward service. Such an alternative is not considered to be a close substitute to call origination.

Wholesale call origination services (originating access or interconnection) can be provided in the form of minutes or in the form of capacity. It may also be supplied together with switching and/or call conveyance services (see below). The market identified for the purpose of this Recommendation is wholesale call origination services. The relevant market is considered to comprise call origination for telephone calls and for the purposes of accessing dial-up Internet service provision. Therefore the market is defined as call origination on the public telephone network provided at a fixed location.

Wholesale Transit Services

In addition to wholesale call origination and call termination, call conveyance or transit will be needed in order to complete a call. Call conveyance or transit interconnection involves transmission and/or switching or routing. For an undertaking providing services to a limited number of end users, an alternative to using wholesale call conveyance services could be to use interconnected leased lines or dedicated trunk capacity. 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. Some parts of this transit service market are likely to become more competitive more quickly than others, but there cannot be a presumption that some switched call conveyance (from an incumbent to an entrant's network) is automatically different from other switched call conveyance (between two entrants' networks).

The provision of transit interconnection can be bought either directly or the elements necessary for the provision of such services can be bought separately and the services can be self provided. The range of operators providing services or indeed the necessary network elements is almost entirely dependent on the traffic volumes on particular transit routes. While it is clear that certain busy routes have experienced large scale entry, other less busy or thinner routes have not, meaning that geographically ubiquitous transit services still normally depend on incumbent provided transit services.

Thin routes often have little or no available capacity so that an entrant wishing to self provide would not be in a position to buy the wholesale elements necessary to self provide transit services in a speedy fashion, having instead to build out the necessary infrastructures. Often, the existing capacity on these thin routes is sufficient to supply all operator's requirements for transit services on such routes. It is clear that in a large number of Member States new entrants are dependent on the incumbent for the provision of transit services on many routes.

Along with wholesale call origination services (originating access or interconnection), switched transit and/or call conveyance services is also identified for the purposes of this recommendation. 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.

Despite the presence of certain thin routes, transit is one of the areas of fixed line telecommunications where competition can be expected to develop. Depending on experience gained over the implementation period of this first Recommendation the need for the transit market's continued inclusion will be assessed.

Wholesale call termination

Wholesale call termination is required in order to terminate calls to called locations or subscribers. Undertakings owning or operating networks to provide telephone services may interconnect at relatively high levels in the network, i.e. at a few interconnect points. Consequently call termination arrangements may in practice comprise call conveyance as well as local call termination. However, undertakings faced by a price increase in say national call termination could purchase local call termination separately from the call conveyance part. Therefore, it makes sense to focus on local call termination as the relevant call termination market.

In using demand and supply substitution possibilities to define a relevant market for competition analysis, it is normal to start with a narrow definition and expand it as appropriate. In this case, the starting point is call termination to a specified location, subscriber or number. However, it is difficult for an undertaking that supplies wholesale call termination to other undertakings wishing to terminate calls to price discriminate between termination charges to different subscribers or locations on its network. Therefore the relevant market is at least as wide as each network operator.

In considering whether a wider definition is appropriate, it is necessary to examine the possibilities for demand and supply substitution that might constrain the setting of termination charges on a given network[31]. If all (or at least a substantial number of) fixed locations or subscribers in a given geographical area were connected by two or more networks, then alternative possibilities would exist for terminating calls to given locations. Another possible source of supply substitution would occur if it was possible technically for calls to a given location or end user to be terminated by an undertaking other than the one operating the network that serves the given location. Currently no such supply substitution is possible.

Call termination charges at a wholesale level on a given network might be constrained via demand substitution but there is currently no potential for demand substitution at the wholesale level. However, there are possibilities for demand substitution at the retail level. Examples could comprise any means of communication that constituted a reasonable alternative to making a call to the location or subscriber number concerned. Such alternatives might include terminating the call to the person concerned via a mobile network, a call using a call-back arrangement, a call that does not involve a specific call termination arrangement (e.g. where parties themselves arrange to speak via IP based links) or communication via messages of varying kinds (e.g. email, voicemail, paging). It is also necessary that the alternative possibility leads to an effective constraint on the setting of call termination charges by making it unprofitable for a network to raise call termination charges.

Such alternatives for demand or supply substitution do not appear currently to provide sufficient discipline on call termination at fixed locations or an argument in favour of a wider market definition, so that the relevant market appears to be call termination on individual networks. The key aspect that gives rise to the incentive to raise call termination charges is that there is no technical alternative by which a call can be terminated (other than by the operator of the network to which the called party subscribes) and that in general the calling party pays entirely for the call. Such an incentive would not arise or would be limited if no charge was levied for incoming traffic or if the receiver rather than the caller paid any charge or if there was a very close financial relationship between the calling and the called party.

Such a market definition - call termination on individual networks - does not automatically mean that every network operator has significant market power; this depends on the degree of any countervailing buyer power[32] and other factors potentially limiting that market power. Small networks will normally face some degree of buyer power that will limit greatly the associated market power. Absent any regulatory rules on interconnection, a small network may have very little market power relative to a larger one in respect of call termination. The existence of a regulatory requirement to negotiate interconnection in order to ensure end-to-end connectivity (as required by the regulatory framework) redresses this imbalance of market power. However, such a regulatory requirement would not endorse any attempt by a small network to set excessive termination charges. Consequently, there is still likely to be an imbalance of market power between large and small networks because it would be easier for a large network than a small network to initiate the step of raising call termination charges and would be more difficult for a small network to resist a move by a large network to lower termination charges.

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31 It is also important to examine countervailing market power, in this case countervailing buyer power in negotiating call termination charges, but this is part of the effective competition analysis once the relevant market is defined.

32 Considerations of relative market power are not limited to networks (of differing size or coverage) serving end users at a fixed location or address but also networks such as mobile cellular networks serving non fixed locations. In circumstances where a ‘fixed’ network with significant market power is subject to a regulatory remedy (beyond the basic one to negotiate interconnect) such as regulated prices for call termination, market power relative to mobile networks would be affected.

Conclusion

Therefore it is considered that the following specific markets related to the provision of public telephone services at fixed locations should be included in the Recommendation:

Retail level

1. Access to the public telephone network at a fixed location for residential customers
2. Access to the public telephone network at a fixed location for non-residential customers
3. Publicly available local and/or national telephone services provided at a fixed location for residential customers
4. Publicly available local and/or national telephone services provided at a fixed location for non-residential customers
5. Publicly available international telephone services provided at a fixed location for residential customers
6. Publicly available international telephone services provided at a fixed location for non-residential customers

Wholesale level

7. Call origination or capacity (on all networks serving a fixed location).
8. Call termination on individual networks.
9. Transit services in the public telephone network.

4.2.2. Access to data and related services at fixed locations

The aim of this section is to (i) describe and define relevant markets for access to generic data services (in particular the provision of Internet service) at fixed locations at a retail level, (ii) define the linked wholesale markets and (iii) identify markets in accordance with Annex I of the Framework directive.

Retail Markets

The increased use of Internet for a mix of communications services has created potentially wide-ranging retail markets for access to data and related services at fixed locations. In general, the provision of retail Internet access consists of two parts: (i) the network or transmission service to and from the end-user's location and (ii) the provision of Internet services, in particular end to end connectivity with other end users or hosts. These two services may be bundled together.

At the current time, it is possible to identify three commonly available forms of Internet access (i) dial-up service, (ii) higher bandwidth services using digital subscriber line technologies (or equivalents) or cable modems and (iii) dedicated access.[33]

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[33] Higher bandwidth or broadband Internet services may be characterised as allowing downstream capacity to end-users in excess of 128 kbits/sec. The bandwidth of the service supplied may be

For residential subscribers and small business users accessing Internet from fixed locations, the most common form of access continues to occur using narrow-band connections, including dial-up access via analogue telephone lines and modems, and dial-up via ISDN. However, a range of other access possibilities (including those listed above) at a fixed location exist and many become increasingly attractive as the demand for data traffic, in terms of either peak or average bandwidth or connection time increases and as the retail prices of these services decline. Satellite and terrestrial TV networks (provided they have adequate capacity and are linked to a return path) are also capable of providing data services and access to Internet[34]. In the future, other wireless technologies and power-line technologies may be widely exploited for access at fixed locations.

An examination of available services and packages at a retail level reveals a wide range of service characteristics in terms of bandwidth, on-line time, price and pricing characteristics, permitted quantity of data received and sent, quality and also accompanying services. Basic Internet connectivity brings the ability to use email and messenger services, establish links with other end-users, exchange files, consult and use web-sites and make transactions. But other specialised services may also be available, including the ability to use various voice and video services.

An end user with a preference for long usage time but less sensitivity to bandwidth might choose a flat rate narrow-band offer or a broader-band (flat-rate) product, if the two are available, whilst an end user with high bandwidth requirements but limited time needs might choose a higher bandwidth offer via DSL or cable modem access (or equivalent). In response to a non-transitory small increase in price or equivalent deterioration in quality, an end user (or significant increments of end users) may well migrate to another retail service. Basic cable modem or DSL service could potentially constrain the pricing of un-metered dial-up service, although the reverse appears less likely to be true.

There are a number of technical characteristics of higher speed or broadband access that imply that certain applications are just not viable on dial-up access. On this technical basis and from the standpoint of broadband, therefore, narrow-band would be a separate market, because the services and/or the quality features of those services (including their uplink and downlink speed) which can be offered over a narrowband connection would not be seen as viable substitutes from the point of view of an end user which is making use of a broadband connection[35]. In addition, a flat-rate or un-metered narrow-band dial-up service may not be considered to be an 'always-on' service in the way that a broadband service could be, as the service is likely to be interrupted if un-used for a given period.

Price differentials can be observed between narrow-band and broadband access but these can vary and they may be a function of the specific data-rate or qualitative features of services offered, whether flat-rate narrow-band offers are available or not, whether there is

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asymmetric or symmetric. Dedicated access would typically involve the provision of symmetric bandwidth.

34 Internet access via the TV is becoming more common, although there are often limitations with respect to the content that can be accessed and the applications that can be used. In most cases a standard modem on a telephone line is used. However, the broadcast path could also be used in which case access would more closely resemble other higher speed access methods.

35 The above analysis may well lead to different results were the starting point to be services offered on narrowband connections. In other words, it may exist for this type of markets asymmetric substitutability: for example, under certain conditions a broadband connection may be a viable substitute for a narrowband connection, since it offers additional features, whereas a narrowband connection may not be a viable substitute for a broadband connection.

competition between different forms of broadband access or for other reasons. It is not therefore easy, at the current time, simply on the basis of price differentials, to discern whether separate retail markets exist.

At the same time, for the purposes of deriving wholesale markets, there are important distinguishing characteristics from a demand perspective between broadband services and dial-up or narrow-band service. At a retail level customers in the broadband market have a range of options to purchase connectivity at these speeds. Consumers can buy service from cable operators with upgraded networks using cable modems, they can buy service from new entrants using either unbundled local loops that the entrant has modified themselves or which have been modified for them or the customer can buy these services directly from the incumbent. Other technologies such as wireless local loops are not widely available but are capable of providing equivalent services. Between these options, provided prices are comparable, a consumer will be indifferent.

In the narrowband market, dial-up services may be paid for on the basis of a subscription, usage or a combination of the two. Un-metered or flat-rate retail (subscription only) service is becoming more widely available in the Community and take-up by end-users where such service is available is substantial. In general a user would switch from metered to un-metered service when the price for an un-metered product becomes low enough relative to the metered price[36]. Hence more intensive users will switch first.

Metered and un-metered (flat-rate) access can be considered to be part of the same market for a number of reasons. Firstly, the only difference between the products is the way in which tariffs are structured. Secondly, the two products appear to be substitutable for end-users, although there appears to be little evidence of end-users substituting metered service in response to a price increases in un-metered service. Thirdly, if obligations exist to allow operators to buy wholesale call origination on an unmetered basis supply substitution will be possible in that a hypothetical monopolist that raised the price of un-metered access would induce other providers (of metered products) to offer an un-metered product at a lower, competitive price level. Therefore metered and un-metered call origination do not constitute distinct markets.

It would be open to NRAs to impose requirements on the broader call origination market which included a requirement to offer un-metered call origination, provided this obligation is proportionate as stated in Article 8(4) of the Access Directive.

Related Wholesale Markets

Given the preceding description of retail markets, it is possible to define and examine the need to identify a wholesale market or markets for ex ante regulatory analysis. In order for access to data and related services to be supplied to an end user at a fixed location, an appropriate transmission channel is required, that is capable of passing data in both directions and at rates that are appropriate for the service demanded. Therefore, an undertaking providing services to end users needs to build, establish or obtain access to a transmission channel to an end user location.

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[36] The quality of an un-metered product is essentially the same as a metered one. At the same time, the un-metered subscription can be seen as the purchase of an option to use additional access time at a zero price.

Current DSL or equivalent technologies are not for the moment typically capable of providing higher speed service in excess of 2 Mbit/sec in both directions to end users. Therefore the main options for delivering such services to end users involve building fibre access or exploiting leased lines capable of supporting such higher speeds. The relevant markets for wholesale dedicated capacity (including higher bandwidth access in excess of 2 Mbit/sec) are treated in section 4.2.3.

To address an end user market intermediate between the higher speed service described above and dial-up Internet access requires the use of facilities such as DSL (or equivalent) service or a coaxial cable or satellite capable of passing data in both directions and at rates that are appropriate for the service demanded. (The services involved do not cover traditional broadcast services which are dealt with in Section 4.4.). In future, other technologies are likely to become widely available, although not in a one to two year timeframe. Such technologies could include wireless local loops, digital broadcast systems and power-line systems.

At the current time, upgraded cable systems are not sufficiently widely developed or deployed although the situation might change in some parts of the Community over the timeframe of the current Recommendation. Consequently the only reasonable widespread means of supplying the end user market is over the local access network loops of the PSTN which have been enhanced to provide broadband access services.

At the wholesale level, broadband access services include what is traditionally referred to as bitstream services[37]. For now the wholesale broadband access market is limited to bitstream services but defining the market in this way allows NRAs to take account of alternative infrastructures when and if they offer facilities equivalent to bitstream services.

An operator using unbundled local loops will not normally consider another form of wholesale broadband access service to be a substitute even if the service provided by the broadband service provider allowed the supply of all the same services that were provided over the unbundled loops. In this example, it would require that the DSL technologies or equivalents used over the loops were compatible at every level of the network. Even if such a synchronous deployment of technology existed it would require continued synchronous technology deployment in the future making it difficult for service differentiation at a technical level to evolve. Equally, it is questionable as to whether an entrant using wholesale broadband access to deliver service to the final user market could easily switch to using unbundled local loops to provide an equivalent service. From a demand perspective a wholesale provider using wholesale broadband access will only consider unbundled local loops a substitute if the wholesale broadband access operator has all the other network elements needed to self provide an equivalent service. The supply substitution possibilities depend on the same condition. It is clear therefore that unbundled local loops and wholesale broadband access constitute distinct markets. There is very limited substitution between resale of end-to-end wholesale products and access style products, both from the demand- and from the supply-side perspectives. While the former mainly appeal to service providers and resellers, the latter are needed by new entrant network operators which intend to offer a full set of competing services by using their own infrastructure and usually after having incurred

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[37] For the purpose of this Recommendation bitstream is a service which depends in part on the PSTN and may include other networks such as the ATM network.

substantial levels of investment. Wholesale end-to-end products are likely to be in a separate market and are currently sold in many countries on a commercial basis. Resale products are not considered part of this market as they are not sufficient to address the needs of the wholesale broadband access market and the inclusion of such resale products in this recommendation is not justified. The aim of the new regulatory framework is ultimately to achieve a situation where there is full infrastructure competition between a number of different infrastructures. This can occur within or between platforms. Regulation mandating access to existing networks serves as a transitional measure to ensure services competition and consumer choice until such time as sufficient infrastructural competition exists. Investment in new network infrastructure will hasten the day when ex-ante regulation can be withdrawn from this market.

The inclusion of ULL in the list of markets, while satisfying the criteria for inclusion and so justified on an economic basis, it is also a legal necessity given the requirement to adhere to Annex I of the Framework Directive in drawing up the list of markets. The question arises whether the wholesale broadband access market also justifies inclusion in this Recommendation. For wholesale broadband access there are clearly very high barriers to entry since a network will need to be deployed in order to provide the service. The dynamic of competition behind the barrier is more complicated. For there to be the possibility of dynamic competition on the wholesale broadband access market depends on the existence of competing networks regardless of questions regarding the nature of competition between these networks. The question is whether the alternative infrastructures which compete are sufficiently widespread to justify the inclusion of this market in this Recommendation, that is whether cable, fibre optic, satellite and wireless networks which provide wholesale broadband access are sufficiently widely deployed or developed in the Community. While these networks are well deployed in some member states in most they are not. If alternative infrastructures continue to be developed and upgraded and competition increases, this market could become effectively competitive but for the moment alternative infrastructures are not available and so this market must be included in the initial recommendation. While wholesale broadband access on alternative infrastructures to the PSTN are in principle covered by the definition of wholesale broadband access, the extent to which such alternatives are part of the market that is analysed in detail by the NRA will be limited by, amongst others, supply substitution considerations.[38]

The relevant markets for the purposes of this Recommendation are unbundled access (including shared access) to metallic loops and sub-loops (including shared access) for the purpose of providing broadband services and the market for wholesale broadband access . The point in the network at which the wholesale broadband access market will need to be supplied will depend on the market analysis and in particular on the network topology and the state of network competition.

Wholesale inputs to dial-up Internet access and services - wholesale call origination

An Internet service provider (ISP) supplying dial-up Internet access requires wholesale call origination and wholesale call termination as inputs as well as wholesale Internet connectivity. A wholesale market corresponding to the retail market for access to the public telephone network at a fixed location would be necessary for the provision of dial up internet services or other narrow band services depends on a number of factors. Users encountering a hypothetical monopolist on the call origination market would be able to easily switch service

[38] See in particular paragraphs 52-54 of the SMP Guidelines.

provider through the use of Carrier Pre Selection (CPS) or Carrier Selection (CS). Switching call origination service providers is in general both easy and cheap. This may result in there being more separate bills to be paid as the access provider and the service provider(s) cease to be the same entity or entities. While there is undoubtedly a cadre of customers who value the ease of single billing it is not clear that this population would be significantly large to mitigate the disciplining role of those not concerned with single billing. Whether service is supplied on a metered basis or on a un-metered basis (or a combination of the two), call origination frequently takes place using appropriate number ranges which route calls to the network used by an ISP for onward connectivity with the public Internet. Depending on the specific call origination arrangements used, ISPs may compensate originating network operators on behalf of their end-users or call origination may be paid for directly by end-users.

In general, end-users accessing the Internet via dial-up means at a fixed location use the undertaking that provides access to the public telephone network. The relevant market includes both call origination for the purpose of speech communications and for other forms of communication such as fax or data. Therefore, the relevant market for wholesale call origination for dial-up Internet service is call origination on the public telephone network provided at a fixed location (the same market defined in section 4.2.1).

Call termination

In order to provide dial-up end-users with Internet access and connectivity, ISPs need to ensure that dial-up calls are terminated; i.e. go through a terminating operator en route to the ISPs server.

Wholesale call termination as part of Internet service provision is different from call termination on fixed or mobile networks for the completion of calls between two end-users. In the case of call termination for Internet service provision, end-users have a contractual relationship (implicit or explicit) with an ISP but normally have no notion of the undertaking terminating dial-up calls. The ISP chooses the terminating operator (or operators) that receives the dial-in calls and may itself pay the terminating charge[39]. Since any terminating charge is incorporated into the overall amount that is charged by the ISP (and faced by the end-user), and end-users can switch between competing ISPs, ISPs have an incentive to minimise the termination charges that they pay.

In general, ISPs will have a wide choice with respect to terminating operators and there is evidence of ISPs switching terminating operators. However, in certain Member States it may be that there is less choice of terminating operators or that one or more operators that have market power on originating access are in a position to more fully exert that market power with respect to call termination. The more limited choice may occur because operators may need to build out networks in order to terminate dial-up calls under un-metered arrangements. Therefore if NRAs consider it necessary to define Internet termination market they can do so by following the Art. 7 procedure.

Whilst the relevant wholesale call origination market fulfils the criteria to warrant identification in the Recommendation, the relevant wholesale call termination market does not for the purpose of this Recommendation.

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39 A number of actual business models may exist. In the metered approach, a portion of the retail usage charge may be passed from the originating to the terminating operator and on to the ISP. In a subscription model, the terminating operator may compensate the originating operator and charge this to the ISP.

Wholesale Internet connectivity

Irrespective of whether end-users access Internet via dial-up or broadband means, ISPs still need to ensure connectivity with other ISPs and their end-users.

To ensure that data packets sent by end-users reach the intended destinations and also that incoming traffic is received, undertakings need to make the necessary arrangements to permit connectivity with all other Internet end users or at least with the networks that they use. This global connectivity can be arranged in a number of ways. It can be purchased from a network that is in a position by its own arrangements to guarantee such connectivity. It can be obtained by interconnecting and exchanging traffic with a sufficiently large number of networks that all possible destinations are covered. Or it can be arranged by a combination of interconnecting with certain networks and purchasing the remaining connectivity that is needed.

Two questions arise for the purposes of the Recommendation. Is it necessary to identify a market for Internet connectivity or packet delivery for the purposes of ex ante market analysis, and if so, what is the relevant market? There are a number of differences between the typical arrangements for terminating calls on the public telephone network and delivering packets to destination addresses on the public Internet. In the latter case, end users are implicitly paying to both send and receive packets. It is not automatically or typically the case that incoming traffic is charged for and that this charge is passed to the traffic sender via the sender's network. As indicated above, traffic connectivity can be arranged in a number of ways.

Entry barriers to this market are low and although there is evidence of economies of scale and that the ability to strike mutual traffic exchange (peering) agreements is helped by scale, this alone can not be construed as inhibiting competition. Therefore, unlike the case of call termination in section 4.2.1, there is no a priori presumption that ex ante market analysis is required. Therefore, no market for wholesale Internet connectivity (or delivery of incoming packets) is identified for the purposes of the Recommendation.

Conclusion

Therefore it is considered that the following specific markets related to access to data and related services at fixed locations should be included in the Recommendation:

Wholesale level

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

Wholesale broadband access.

Call origination on the public telephone network at a fixed location.

4.2.3. Dedicated connections and capacity (leased lines)

The markets related to dedicated connections and capacity have a link to some of the markets defined with respect to access at fixed locations and the provision of services at fixed locations. For example dedicated connections may be an alternative to unbundled local loops and vice versa in certain circumstances. Also dedicated trunk or long distance connections may be an alternative to long distance call conveyance.

Dedicated capacity or leased lines may be required by end users to construct networks or link locations or be required by undertakings that in turn provide services to end users. Therefore it is possible to define retail and wholesale markets that are broadly parallel.

The key elements in the demand and supply for dedicated connections are bandwidth, distance and the location or locations to be served. There may also be qualitative characteristics because in some cases distinctions are still made between voice grade and data grade circuits.

At the retail level, specific reference is made in the Universal Service Directive to the provision of the minimum set of leased lines[40]. The minimum set of leased lines refers to specified leased circuits with harmonised characteristics that must be made available under particular conditions throughout the national territory. Therefore this minimum set of leased lines is identified in the Recommendation as a specific set of retail markets. It is not felt necessary to identify specific markets for each category of leased line in the minimum set since it is likely that the market structure will be similar for each sub-set. It is not necessary to expand the retail leased line categories to capacities beyond the minimum set since there must always be a presumption that an intervention at a wholesale level will be sufficient to address any problems that arise. There is no a priori reason to believe that this would not be the case in a leased line context.

At the wholesale level, it is possible to distinguish separate markets, in particular between the terminating segments of a leased circuit (sometimes called local tails or local segments) and the trunk segments. What constitutes a terminating segment will depend on the network topology specific to particular Member States and will be decided upon by the relevant NRA. In addition while many trunk segment markets on major routes are likely to be effectively competitive in certain geographic areas in Member States, trunk segments may not support alternative suppliers. For this reason trunk segments are also identified. Additional market segmentation is possible between high and low capacity leased lines.

Conclusion

Therefore it is considered that the following specific markets related to the provision of dedicated connections and capacity (leased lines) should be included in the Recommendation:

Retail level

Retail leased lines in the minimum set[41].

Wholesale level

Wholesale terminating segments of leased lines.

Wholesale trunk segments of leased lines.

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40 OJ C 339, 7.11.1998, p. 6.

41 The leased lines in the minimum set are identified in the List of Standards published in the Official Journal of the European Communities in accordance with Article 17 of the Framework Directive.

4.3. Services provided at non-fixed locations

4.3.1. Mobile voice services

The aim of this section is to (i) describe relevant retail markets for mobile voice services, (ii) define the linked wholesale markets and (iii) identify markets in accordance with Annex I of the Framework directive.

Retail markets

With respect to the overall retail mobile market, it is not clear whether residential and business customers can be considered to be part of the same market or not as there does not appear to be a clear way to separate them even if there may be significant differential pricing of services in order to attract certain types of customer or use[42]. With respect to demand substitution, end users may be indifferent between tariff packages designed for business or residential users provided the terms suit their usage profile. With respect to supply substitution, an undertaking serving the business market may easily switch to supplying residential users in response to a small but non-transitory price increase by a hypothetical monopolist. Such ability contrasts with the situation for the supply of services to fixed locations where lack of network coverage (and the economics of extending networks to serve fixed locations in other geographical areas) constrains such supply substitution.

Pre- and post-pay mobile services can also be considered to be part of the same market. Supply substitutability is relatively easy, as is demand substitutability (in particular from pre-pay to contractual terms).

Several separate mobile markets can be defined at a retail level. Mobile telephone users have no apparent substitute for mobile access. And there is no supply substitute unless new spectrum becomes available. Therefore it seems that access can be considered as a market that is separate from the supply of services over the network at a retail level. However, every end-user purchases access to a mobile network with the objective of making calls or receiving calls or both (nationally or whilst roaming internationally). Even if a user purchasing service chose not to originate calls, their decision to have service must be based on a need for call termination (to receive calls) otherwise access would be meaningless. This has implications for the definition of corresponding wholesale markets.

Retail services for roaming on other national networks

Similar considerations exist for international roaming at a retail level. Retail international roaming services include the ability to make and to receive calls whilst in a country other than the one where the end user has established his or her network subscription. From a demand perspective, the retail provision of international roaming services appears to be a separate market.

However, a domestic supplier of other mobile telephony services could respond to a price increase by a hypothetical monopolist by making agreements with foreign operators so as to supply retail roaming services. Therefore it is possible to define a broader outgoing calls market at the retail level that includes national, international and roaming calls. This does not prevent a specific national market for international roaming to be defined at a wholesale level (see below).

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[42] One area where a specific business market might be identified is in the retail provision of national and international services (including international roaming) for large corporate customers. Such a market is not identified for the purpose of ex ante regulatory analysis.

Retail short message services

Given the widespread development and growing use of new retail services such as SMS (short messaging service), the question arises as to whether additional retail markets can be defined. In certain circumstances SMS can be considered as a reasonably close (demand) substitute to a mobile call.

In addition, a supplier of mobile voice calls could switch resources into supplying SMS in response to a price rise by a hypothetical monopolist. However, a supplier of SMS may not be able to similarly switch to provide voice services, so this asymmetry may argue in favour of separating the retail markets, although most users seem to buy SMS services as part of bundles of mobile telephony services. No specific retail SMS market is defined for the purposes of this Recommendation.

Related wholesale markets

Access and Call Origination

The key elements required to produce a retail service are network access, call origination and call conveyance (of varying kinds) and where necessary call termination on other networks. 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.

The Commission does not at this stage anticipate that this market will be included in future revisions of this Recommendation.

Wholesale international roaming

Wholesale international roaming services provide access and capacity (airtime minutes) to a foreign mobile network operator for the purposes of enabling its subscribers to make and receive calls while on another operator’s network abroad. International wholesale roaming services are thus provided by a domestic mobile network operator (visited network) to a mobile network operator in another country (home network).

Wholesale international roaming satisfies a demand by foreign mobile network operators whose main objective is to offer their own subscribers a seamless service, not limited to the territory in which they have their own physical network. This operators’ demand results from a demand from their subscribers to be able to make and receive calls on their mobile terminals abroad without having to acquire a new SIM card, or enter into another subscription with a foreign GSM operator, while enabling them to keep the number they use on their home network. In addition, international mobile roaming is characterised by requirements of coverage (having signal), accessibility (being reached by use of a given number on a particular SIM card) and mobility (ability to be reached when on the move), three features that are important in considering potential demand- and supply-side substitutes.

There are entry barriers to this market because only licensed mobile network operators are able to supply international roaming services in any given national market. In addition, there appear to be entry barriers because of restrictions governing the negotiation of roaming agreements. On the other hand, there are clear incentives for mobile network operators to negotiate lower-priced wholesale agreements for roaming if it means that they can generate more traffic on their networks or attract and retain end-users. However, the ability of mobile network operators to direct roaming traffic is reported as being limited for the time being.

National roaming provided to mobile network operators within the same Member State (usually based on regulatory measures), although likewise provided on a wholesale basis, is a distinct service from wholesale international roaming for two main reasons. First, because national roaming arises in most cases from a temporary regulatory obligation[43] imposed on existing mobile network operators to provide roaming to subscribers of a new entrant network operator in the initial phase of its network roll-out, outside of the new entrant's coverage area. Secondly, even if a product of commercial negotiations, national roaming does not involve foreign mobile licensed operators and does not entail a cross-border element, as international roaming always does.

Domestic wholesale mobile services involving access and provision of airtime ("wholesale airtime access"), provided by licensed mobile operators to service providers in their home country, cannot be viewed as alternatives to international roaming by foreign mobile operators. The main reason is that such services do not include the service that enables identification and recognition of a foreign operator's subscribers. If the foreign operator entered into a wholesale airtime agreement with an operator in the territory which its customers were visiting, that would require the foreign operator's subscriber having to acquire a new SIM card and a new mobile number issued by the visited operator's network.

Wholesale international roaming cannot be substituted by any other form of access to fixed telephone services abroad because such access cannot ensure accessibility (in being reached on the usual mobile number) and mobility.

Indirect access through carrier selection (i.e. wholesale call origination and access) would not be an effective supply substitute on the supply side, because in the current state of technology and commercial reality this service cannot provide the features of coverage, accessibility and mobility inherent to international roaming provided by mobile operators. This conclusion is likewise valid for carrier pre-selection on a call by call basis and wholesale airtime access for the same reasons.

Service providers and mobile virtual network operators (MVNOs) could not viably switch to providing wholesale international roaming on their own, as for the time being mobile network operators sell wholesale roaming services to other licensed mobile network operators only. They do not conclude international roaming agreements with service providers and MVNOs.

Therefore, it appears that there is a very limited scope for either demand or supply side substitution for wholesale international roaming. The Framework Directive (Annex I) also identifies an additional market for inclusion in this initial Recommendation, "the national

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43 Finland is an exception because of some remote areas that justify national roaming not limited in time.

market for international roaming services on public mobile telephone networks". Therefore, this market is identified for the purposes of this Recommendation.

Wholesale call termination on mobile networks

Two questions are examined. What is the appropriate relevant market in respect of call termination on mobile markets? Should an appropriately defined relevant market be identified for the purposes of this 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 or influence termination charges. This is the case under the calling party pays principle which is currently common in Europe.

This externality, whereby the called party may independently and adversely affect the calling party, can potentially be internalised, so that the ability for a network to set excessive call termination charges is constrained. Whether such a process can be expected to occur does affect both how a relevant call termination market is defined and whether a relevant call termination market should be identified for the purposes of the Recommendation. These issues are examined in more detail below.

At a retail level a call to a given user or user's terminal is not a substitute for a call to another user and this limitation on demand substitution follows through at the wholesale level. In addition there is a legal obligation at the wholesale level to supply any to any interconnection so operators are legally obliged to conclude interconnect agreements. In respect of supply substitution, if the supplier of call termination raises its price, it is not easy for alternative suppliers to switch to supply that market because they would need the SIM card details of that user to do so. However, the market is wider than call termination on a given user terminal because it is not possible for an operator to readily price discriminate between termination charges to different users across their network. Therefore the relevant market is at least as wide as termination for each operator.

However, with such a starting point in market definition, the supplier and the product are perfectly linked. It is important therefore to consider the possibilities for demand and supply substitution that might constrain termination charges and also the behaviour of network operators in setting termination charges. A constraint would exist if when a network operator tried to raise termination charges (or resisted lowering them), the overall impact were unprofitable. Such supply side substitution is not currently possible but may become feasible at some point in the future.

This could become the case with software enabled SIM cards, something that is likely to be exploited first in cases where operators establish preferred arrangements for their end-users when they are roaming internationally.

Mobile termination charges might be constrained via demand substitution. There is no potential for demand substitution at a wholesale level. Demand at the wholesale level is inextricably linked to supply. The operator (of the caller) is unable to purchase call termination on a given network from an alternative source (as indicated above).

However, there are various possibilities for demand substitution at the retail level. It may be that other forms of calls or communications are reasonably close substitutes for the calls considered above, such as call back, call forwarding and SMS messaging but in order for that potential substitution to broaden the market it would need to constrain the behaviour of the operator setting termination charges by lowering its overall profitability.

There may be substitutes for different classes of call, for instance a possible substitute for a fixed to mobile call is a mobile to mobile call[44]. The substitute call would need to be on net to lower profitability and constrain behaviour. In conjunction with the possibility for closed groups of users to exert buyer power (as described below), the potential substitution has a stronger impact because it could lead not only to the loss of termination charges but also to the loss of subscribers from one network to another.

A possible substitute for an off-net mobile call could be a mobile to fixed call. This would result in the loss of the termination charges but it is likely that the alternative call is only a close substitute in specific circumstances (e.g. knowing that the called party is close to a given fixed phone).

To summarise, some of these potential substitutions could constrain termination charges but whether they do so in practice also depends on empirical circumstances. There is no reason to believe that any of the demand substitutes above would operate a level that would constrain the operator's behaviour.

Another specific way in which end-users and their operators can avoid excessive termination charges is by tromboning (traffic re-file) or re-routing. In particular, it is possible to re-originate traffic so that it appears that it is coming from the mobile network on which calls are due to terminate. The latter practice is only viable for end-users that originate a significant amount of traffic for termination on a mobile network. In addition, it is possible for mobile operators to design differentiated tariff services in order to separate such user groups.

Another possible constraint on the ability of operators to set excessive termination charges may come from buyer power at the retail level. Two main types of buyer power may arise.

The first is where users of mobile phones are sufficiently concerned about receiving incoming calls that the price of incoming calls affects their choice of supplier. For this to exert a constraint on the pricing of call termination it is necessary that such a factor is as important to users as the pricing of other services such as outgoing calls, rental subscriptions etc. Under the calling party pays (CPP) principle, the calling pays for the call, and the called party does not, therefore there is no direct relationship between the charges applied and demand for the service by the user of the mobile network who receives the call. Mobile users have shown little price sensitivity to termination charges on their own network, i.e. how much it costs others to call them.

A second type of buyer power can come from closed user groups where a particular group of users (whether or not they pay for part of the bill associated with incoming calls) make sufficient calls between them that intra-group calls constitute a significant proportion of their bill. If a given network raised termination charges and thereby increased the price of incoming calls, group members could switch networks to be on a given network and take advantage of lower on net prices. However, mobile operators are able to price-discriminate among the various categories of users and use of on-net tariffs and offering closed economic groups discounts for calls to a particular mobile number for instance are used to such an end.

In general therefore, whilst it is apparent that end-users who subscribe to mobile services have a choice about the network to which they subscribe and that it is relatively easy to switch between networks, there is limited evidence of widespread constraints on the pricing of wholesale call termination. The first option for market the scope of the market definition is one for call termination on each mobile network. This would imply that currently each mobile network operator is a single supplier on each market. However, whether every operator then

[44] It is possible for these alternatives to be substitutes (as well as complements) even if broadly speaking the fixed market is defined separately from the mobile market.

has market power still depends on whether there is any countervailing buyer power, which would render any non-transitory price increase un-profitable.

Another option for the scope of the market definition would be a national market for (mobile) call termination but the supply side substitution necessary for such a definition does not currently exist.

A third option for the scope of the market definition would consist of linked national markets for mobile services. For this definition to be valid, mobile subscribers must be concerned about the price of calling mobiles and therefore termination charges (as an important determinant of such charges). It is also necessary that the services are strong complements so that subscribers do not consider the prices of the services separately when choosing a network but rather the price of the overall bundle or package. This would mean that a mobile operator could only raise termination charges and thereby the retail price of incoming calls, (without losing subscribers) if at the same time it reduced prices for other services in the bundle. In this case the assessment of market power in call termination would be similar to that for other services in the bundle. If call termination were less important, there might be scope for a higher degree of market power in call termination.

The conclusion at the current time (under a calling part pays system) is that call termination on individual networks is the appropriate relevant market. However, such a definition would be undermined by (i) technical possibilities to terminate via other networks (this would broaden the market definition to call termination on all networks) (ii) evidence that users employ alternative means to circumvent high termination charges or (iii) evidence that users subscribe to networks on the basis of what it costs to be called (the last two would imply a linked market definition, comprising access, call origination and termination).

A market definition for call termination on each mobile network would imply that currently each mobile network operator is a single supplier on each market. However, whether every operator then has market power still depends on whether there is any countervailing buyer power, which would render any non-transitory price increase un-profitable. The situation will have to be closely followed and will be part of the review in June 2004.

Wholesale Data Services

SMS

Wholesale SMS, including both SMS origination and SMS termination, or more generally narrowband mobile data services, exhibit a number of features which justify separate treatment from voice call origination and termination dealt with above. At the retail level, it is not clear whether users consider SMS a sufficient substitute for a voice call in sufficient numbers for short voice calls and SMS to be considered part of the same market. While there is undoubtedly some substitution possibilities these are unlikely to operate to the extent necessary to place SMS in the same market as voice. In order for two products to be in the same market it is not necessary that these products are perfect alternatives for all users, only that there is a sufficient number of users who find them sufficiently close substitutes to constrain a hypothetical monopolist from raising prices profitably. It seems likely that from both a demand and supply perspective, instant messaging services over mobile networks, multi-media messaging services and general new data services that are currently available on 2.5G networks and which will be developed further on 3G networks will act as effective substitutes for SMS services. This would imply that SMS might be considered part of a broader data market, at least from the perspective of narrowband services.

From an origination perspective there is, in addition to the normal competitive forces at work in voice call origination, a choice of different media to initiate SMS messages. These are developing and in addition to Internet other fixed line operators are entering this market.

However it is on the termination side that differences appear between mobile voice origination and SMS. In the first instance SMS is not time dependent in the same way as voice calls, and this creates a number of different routing possibilities for operators. Furthermore, it also creates opportunities for different operators to enter the market and by aggregating demand to possibly create the kind of countervailing buyer power that is absent on the voice termination market. This may mitigate the degree of market power which MNOs enjoy in terminating SMS over their own networks. It is apparent that a large number of SMS origination generates an SMS response through for example, value added services which can typically entail the receiver of the message having to pay a price for the content of the message. In such circumstances senders of SMS are concerned with the cost of receiving an SMS since it is very often an explicit portion of the price paid for the service bought. It is clear that in this particular circumstances a receiving party pays dynamic is created and may restrain operators' ability to exercise market power[45].

No wholesale SMS market is identified for the purposes of this recommendation.

Other Mobile data services

In addition to voice and SMS services mobile or wireless cellular networks can be used to access data and related services, including Internet and such services are developing. Current generation networks are in the process of being modified and upgraded to enable data rates in excess of those possible using dial-up access, and next or third generation networks will be capable of providing yet higher rates.

Retail services are currently less developed than their equivalent provision to fixed locations and it remains to be seen how services will be supplied and priced in the context of third generation networks. It is difficult at this stage to foresee how data services and access to Internet will develop, and also how voice and non-voice services will develop in the context of third generation networks.

For example, although the basic technologies for deploying upgraded second generation networks and third generation networks are now established, there is still uncertainty about the way in which services will be deployed, the protocols that will be used and the way in which services will be tariffed and sold. It might be for instance that voice services will be priced in a way that resembles the approach used in packet data networks, where receivers as well as senders pay for part of a communication. Such a development would modify the incentives to set excessive termination charges.

Most of these issues can currently be dealt with only with a high degree of uncertainty, and it is not possible to evaluate substitution patterns until more services are offered and establish

[45] The receiving party pays principle in this particular case would apply only to the relation between a content provider or value added service provider and the final client. However it would appear that the ability of terminating operators to exploit their market power over content delivered to their own subscribers would still persist. In particular, it may happen that content providers would not find it profitable to offer services to end users given the wholesale SMS termination price set by the mobile operator, and that the mobile operator itself could diversify its offering by commercialising content provision and possibly by applying discriminatory practices to prevent service providers from competing effectively.

themselves on the market. On this basis, no retail or wholesale markets are identified for the purposes of the Recommendation.

Conclusion

Therefore it is considered that the following specific markets related to the provision of Voice Services provided at non-fixed locations should be included in the Recommendation:

Retail level

No markets are identified.

Wholesale level

Access and call origination on public mobile telephone networks.

Voice call termination on individual mobile networks.

National market for international roaming services on public mobile telephone networks.

4.4. Markets related to Broadcasting Transmission

Electronic communications services include transmission services in networks used for broadcasting but exclude services providing or exercising control over content transmitted using electronic communications networks and services. The provision of broadcasting services therefore lies outside the scope of this regulatory framework, but the networks and associated facilities used for the delivery of broadcast services are within its scope.

Consequently no retail market is identified for the purposes of the Recommendation. However, a brief characterisation of retail services is made in order to derive wholesale markets for transmission services and assess whether any wholesale markets should be identified for the purposes of the Recommendation.

The overall retail market or markets supplied to end users consists of the delivery of radio and television broadcasting and includes free-to-air broadcasting as well as subscription and pay broadcasting and also the delivery or transmission of interactive services.

Radio and television broadcasting, including subscription broadcasting and also pay broadcasting can be delivered over analogue or digital platforms. To deliver subscription and pay broadcasting, (and in some cases free-to-air broadcasting) some means of both accessing end users and controlling end user access is required. Conditional access systems (and other associated facilities) are used by broadcasters to deliver services to end-users that are authorised to receive them. In order to provide fully interactive services (beyond end-user choice of broadcasting or related content), a return path is required. The return path may be provided as part of the network or separately, for example, using a telephone line. Delivery and control of interactive services is typically undertaken by means of software and related applications for navigating and interaction, incorporated in a set-top box (along with conditional access systems and where necessary appropriate decoders).

Currently, end users, depending on their particular circumstance, may receive radio and television broadcasting via terrestrial, cable or satellite transmission networks. In the future other transmission channels are likely to become more common, e.g. telecommunications networks whose bandwidth is increased using DSL or other technologies.

It is possible to characterise the market both in terms of the services that are delivered and the transmission network over which they are delivered. Whether services broadcast over these transmission systems constitute separate markets or not (and thereby affect the definition of wholesale markets) depends on a number of factors. An important factor is whether they can be considered to constitute effective demand substitutes in terms of price and product for a significant number of end users. A related factor is the coverage or availability of the different transmission networks. Also relevant is the ability of end-users (or a significant proportion of them) to be able to switch between broadcasting or transmission platforms.

In respect of the linked wholesale markets, several general market links are possible in respect of the delivery of broadcast content over transmission networks to end users. The undertaking owning or operating a transmission network may seek broadcast content that it delivers or transmits to its retail customers or end users. The programme provider or broadcaster may provide content to a transmission or broadcast network or negotiate conditional access arrangements by which it can transmit broadcasting content to the end user via an access arrangement. The broadcaster that has content or rights to content may own or operate a broadcasting network or transmission network and also supply conditional access services by which other broadcasters or content providers may supply services to end users[46].

As indicated above, three main platforms are currently available (terrestrial, cable and satellite) for the digital transmission or delivery of content and others are likely to become more common in the future. The existence and coverage of digitally capable broadcasting transmission platforms varies between Member States of the European Union. In some, cable networks have not been built or widely developed. In many digital terrestrial networks have not developed. The upgrading of telecommunications networks, such that broadcasting services could potentially be transmitted, is in its early stages.

In the absence of some limitation on switching between platforms, the first wholesale market that is identified is broadcasting transmission services and distribution networks in so far as they provide the means to deliver broadcast content to end users. Demand and supply substitution conditions between the different delivery platforms may be such that the feasibility of switching between platforms is limited. In that situation a hypothetical monopolist on one platform may not necessarily be constrained by the activities of operators of other platforms.

In order to deliver subscription or pay broadcasting or interactive services to end users, the undertaking supplying such services (unless it owns or operates its own transmission network) typically needs access to ancillary technical broadcasting services such as conditional access systems, application programme interfaces and electronic programme guides on one or more transmission networks.

However, no wholesale market for ancillary technical broadcasting services (including conditional access systems) is identified for the purposes of the Recommendation. Articles 5 and 6, in conjunction with Annex I of the Access Directive permit Member States to require all operators of conditional access systems to offer access on fair, reasonable and non-discriminatory terms or to apply such access terms only in respect of operators found to have SMP on the relevant market. Therefore, by virtue of the Access Directive, there is no requirement to identify relevant product and service markets in this area in the Recommendation.

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46 In a fully converged environment, the market is likely to be one that is more generally described as the delivery of broadband content over a broadband capable network.

When a Member State chooses to permit its NRA to undertake a market analysis for the purpose of determining whether to apply such access terms only in respect of operators found to have SMP on the relevant market, which it may do under Article 6.3 of the Access Directive, the following considerations apply.

The relevant issue for undertakings seeking access to ancillary technical broadcasting services (including conditional access systems) is considered to be the ability to deliver to, or negotiate access to, sufficient end users to sustain a viable business, rather than to negotiate access to all delivery platforms or to all possible end users. In addition, end users may switch between delivery platforms in response to the services offered and expectations about overall prices. Only where there was a non-transitory price increase by a hypothetical monopolist across all delivery platforms would an undertaking (seeking to deliver to end users and demanding wholesale access) have no substitution possibilities. However, if switching costs for a substantial proportion of users between alternative delivery platforms were sufficiently high[47], it might be argued that the relevant market could be for ancillary technical broadcasting services <u>on a given delivery platform</u>.

The relevant market for the purposes of ex-ante market analysis, where a Member State so decides, is therefore considered to be the market for wholesale ancillary technical broadcasting services across all relevant delivery platforms, unless specific national situations in respect of switching costs and available delivery platforms justify a narrower market definition.

Conclusion

Therefore it is considered that the following specific markets related to broadcasting transmission should be included in the Recommendation:

Wholesale level

Broadcasting transmission services and distribution networks in so far as they provide the means to deliver broadcast content to end users.

5. TRANSITION TO THE NEW FRAMEWORK – DEFINING MARKETS IN ACCORDANCE WITH ANNEX I OF THE FRAMEWORK DIRECTIVE

Section 2 describes how the new regulatory framework provides for the transition from the 1998 framework, and in particular for the review of existing obligations on the basis of the provisions and principles in the new regulatory framework.

As the title of Annex I of the Framework directive makes clear, all the market areas listed therein need to be included in the initial version of the Recommendation in order that NRAs can carry out a review of existing obligations imposed under the 1998 regulatory framework. If they were not so included, Article 15(3) of the Framework directive would require NRAs to notify them individually to the Commission under the procedure set out in Article 7 of the Framework directive.

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[47] Switching costs may be taken into account by end users when subscribing to a given delivery platform. In addition, depending on the size of switching costs relative to expected profitability; suppliers may compensate end users for switching costs in order to build a subscriber base.

However Article 15(1) of the Framework directive requires the Commission to define markets in accordance with the principles of competition law. The market areas set out in Annex I of the Framework directive cannot all be regarded as such on the basis of the examination undertaken in section 4. The Commission has therefore defined markets (corresponding to the market areas listed in Annex I of the Framework directive) in accordance with competition law principles. Where NRAs have imposed obligations on SMP operators in market areas under the 1998 regulatory framework, they should therefore analyse whether there is effective competition on the corresponding competition law markets identified in the Annex to the Recommendation.

The provisions concerning the review of existing obligations which are contained in Article 7(2) Access Directive and Article 16(2) Universal Service Directive state that the Commission shall indicate relevant markets for the obligations under the old framework specified in those Articles in the initial recommendation on product and service markets. This requirement is satisfied by the list of markets set out in Annex I of this document. The correspondence between market areas regulated under the old framework and Annex I of the framework directive is made in Table 1. The correspondence between the Framework Directive Annex I markets and the markets identified in this recommendation is made in Table 2 below.

Provided that NRAs analyse relevant markets using the precise product or service market definitions listed in the Annex, there is no need to notify the market definition to the Commission in accordance with Article 15(3) and Article 7(4a) of the Framework Directive. However, measures to designate or not designate undertakings as having significant market power on these markets do need to be notified in accordance with Article 7 of the Framework Directive.

As section 4 of the SMP Guidelines explains in more detail, Article 16 requires that where an NRA concludes that a market identified under the new regulatory framework is effectively competitive, the NRA removes any existing specific SMP obligations. Where a NRA determines that a relevant market is not effectively competitive, it must identify undertakings with SMP and either impose appropriate regulatory obligations or alternatively maintain or amend existing obligations. In some cases therefore it may be that regulatory obligations imposed under the 1998 regulatory framework are re-imposed under the new regulatory framework, albeit in respect of designations of significant market power on relevant markets defined and analysed in accordance with the new regulatory framework.

A summary of the market areas listed in Annex I, together with their corresponding competition law markets and an indication as to where they appear in the Annex to the Recommendation, is set out in the following table.

Table 2 : Treatment of Annex I market areas in this Recommendation

Market areas listed in Annex I of the Framework Directive	**Corresponding competition law market set out in Annex I of the Recommendation**
Retail	
The provision of connection to and use of the public telephone	1. Access to the public telephone network at a fixed location- residential

network at fixed locations.	2. Access to the public telephone network at a fixed location - business 3. Publicly available local/and or national telephone services provided at a fixed location-residential 4. Publicly available local/and or national telephone services provided at a fixed location - business 5. Publicly available international telephone services provided at a fixed location- business 6. Publicly available international telephone services provided at a fixed location –residential
The provision of leased lines to end users.	7. The minimum set of leased lines
Wholesale	
call origination in the fixed public telephone network	8. Call origination on the public telephone network provided at a fixed location
call termination in the fixed public telephone network	9. Call termination on individual public telephone networks provided at a fixed location
transit services in the fixed public telephone network	10. transit services in the public telephone network provided at fixed locations
call origination on public mobile telephone networks	15. Access and call origination on public mobile telephone networks
call termination on public mobile telephone networks	16.Voice Call termination on individual mobile networks
leased line interconnection (interconnection of part circuits)	13. Wholesale terminating segments of leased lines 14. Wholesale Trunk segments of leased lines
access to the fixed public telephone network, including unbundled access to the local loop	11. Wholesale unbundled access (including shared access) to metallic loops and sub-loops, for the purpose of providing broadband and voice services.- 12. Wholesale broadband access
access to public mobile telephone networks, including carrier selection	15. Access and call origination on public mobile telephone networks
Wholesale provision of leased line capacity to other suppliers of electronic communications networks or services	13. Wholesale or terminating segments of leased lines 14. Wholesale Trunk segments of leased lines
Services provided over unbundled (twisted metallic	11. Wholesale unbundled access (including shared access) to metallic loops and sub-loops, for the purpose

pair) loops.	of providing broadband Internet services.-
The national market for international roaming services on public mobile telephone networks.	17. The wholesale national market for international roaming on public mobile networks

6. PUBLICATION OF RECOMMENDATION AND SUBSEQUENT REVISION

This Recommendation was adopted following a public consultation on a draft text that took place in July 2002 and a further consultation with NRAs and NCAs that took place in October 2002. The Recommendation will be periodically reviewed by the Commission depending on the speed of market developments, the period needed by NRAs to undertake market analysis, the principle set out in section 1 that the imposition of ex-ante regulation to address lack of effective competition implies a degree of continuity, and the need for predictability and legal security for market players.

National regulatory authorities will regularly review their market analysis on the basis of the market identified in any updating of the Recommendation, as stated in Article 16 of the Framework Directive.

In reviewing the Recommendation, the Commission will consult Member States, NRAs and NCAs, and all interested parties via a public consultation.

The Commission will consider no later than 30 June 2004 the need to review this Recommendation in the light of market developments.