

COMPETITION COMMITTEE



Defining the Relevant Market in Telecommunications

Review of Selected OECD Countries and Colombia

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and Colombia

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FOREWORD

This report sets out the experiences of OECD in applying the concept of market definition in the telecommunications sector, with a particular focus on triple- and quadruple-play services.

The findings are then related to existing regulations in Colombia to verify whether the relevant markets defined in regulatory decisions are consistent with the competition economics approach to identifying relevant markets.

This report was prepared by the OECD Secretariat at the request of the Comisión de Regulación de Comunicaciones of Colombia (CRC) with a view to assisting the CRC in applying competition analysis in an ex ante regulatory setting.

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INTRODUCTION*

A proper market definition is critical in most competition and regulatory cases. The delineation of the relevant market, one of the most decisive and most litigated issues, is not, however, an end in itself. Closely related to the objectives pursued by competition law and sector-specific regulation, it is a means used to help identify the market participants and the area of effective competition. This, in turn, requires the determination of whether one or several undertakings present in the market jointly possess dominance or significant market power (SMP).

The definition of the relevant market permeates analysis in essentially every branch of competition law. In abuse of dominance cases, competition authorities (CAs) define the relevant market in order to help determine whether there is a company holding a dominant position, and whether the conduct of such company produces anti-competitive effects. Also, with respect to mergers, market definition is useful in order to identify overlaps and thus evaluate effects of the transaction. Finally, even if market definition plays different roles in the assessment of agreements and in abuse of dominance cases, it is still necessary in order to determine whether there is an effect on competition.

In regulated sectors, the definition of the relevant market is also essential given that intervention should be limited only to those markets where competition is ineffective and where it is unlikely to develop without policy intervention. This means that regulatory authorities first need to identify such markets. Second, they need to regularly evaluate the state of competition in those markets in order to assess whether regulation can be withdrawn as markets become competitive.

The conventional antitrust methodology for market definition applies in the same manner in the telecommunication sector as in any other. However, telecommunications markets exhibit certain features which may complicate a straightforward application of the SSNIP (small but significant and non-transitory increase in price) test, a tool most commonly used to define markets.

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CHAPTER 1: GENERAL PRINCIPLES OF MARKET DEFINITION

Market definition is one of the most important analytical tools competition authorities use to examine and evaluate competition problems. By defining a relevant market and then calculating market shares or other concentration measures for the companies present in the market, competition authorities seek to identify in a systematic way the competition constraints that the undertakings involved face.

Given the importance of market definition, it is not surprising that various jurisdictions publish documents which provide a systematic conceptual framework that should be followed when defining relevant markets. For example, in the EU, the European Commission published *Notice on the Definition of the Relevant Market for the Purposes of Community Competition Law*.² In the US, market definition methodology is laid down in the *Horizontal Merger Guidelines*,³ while in Mexico it is described in the report '*Market Definition: Assessment of the Relevant Market in Competition Matters*'.⁴

Even though such documents often lack the binding force of the law, they are of considerable importance as they increase transparency and predictability of the competition policy practice. Predictability is particularly relevant as firms often have to self-assess whether their conducts, transactions and agreements fall under the scope of competition law and if so, whether they are compliant with the relevant provisions.

Market definition adopted by regulatory authorities (RAs) in the course of an *ex ante* intervention might be different from definitions adopted *ex post* by competition authorities in a merger or abuse of dominance case. Since in each of

² Commission Notice on the Definition of the Relevant Market for the Purposes of Community Competition Law, O.J. [1997] C 372/5.

³ U.S. Department of Justice and the Federal Trade Commission (2010), *Horizontal Merger Guidelines*, available at: <http://ftc.gov/os/2010/08/100819hmg.pdf>.

⁴ Comisión Federal de Competencia (2011), Documento de referencia sobre definición de mercado relevante, available at: <http://www.fne.gob.cl/wp-content/uploads/2013/09/doctoreferenciadefmercrelevant.pdf>.

these cases the starting point of the competition analysis is different, it is not surprising that definitions of the relevant market may not coincide.

Markets are most commonly defined on the basis of the ‘hypothetical monopoly’ test, also known as the SSNIP test, which is well established in antitrust practice.⁵ The objective of this exercise is to define the smallest possible markets both in the product and geographic dimension, whereby a hypothetical monopolist could profitably and permanently raise the price of the products by 5 to 10 per cent above the competitive level. Loosely, a market defined by such a methodology is “something worth monopolising”, and therefore high market shares within such a market might imply the ability to exercise market power. The relevant market includes all those products which the consumer regards as sufficiently interchangeable or substitutable to prevent such a price rise. To empirically test whether identified products impose significant price constraints, economists examine cross-price elasticities and diversion ratios.⁶

In merger cases, the SSNIP test is performed on the existing price. This is because merger review is prospective, i.e. it examines possible future effects of the merger, in particular possible price increases, and compares them with the prevailing situation. In abuse of dominance or monopolisation cases, a mechanical application of the SSNIP test may lead to overly broad markets, and consequently, also to an underestimation of a firm’s market power. This is because, in contrast to merger review, the analysis is retrospective. This means that anticompetitive effects may have already materialised in the market and that prevailing prices may already be set at supra-competitive levels.⁷

The ability of any given firm to increase prices is constrained by: demand substitution, supply substitution and potential competition. Demand substitution is usually regarded as the most important competitive constraint affecting firms. According to the European Commission *Notice on the Definition of the Relevant Market*, “demand substitution constitutes the most immediate and effective

⁵ For a detailed analysis of the market definition concept see OECD (2012), Roundtable on Market Definition.

⁶ The cross-price elasticity measures the percentage change in the demand for product X when the price of product Y increases by 1 per cent. The diversion ratio between products X and Y, on the other hand, determine how much of the demand for product X reduced because of a price increase is diverted to product Y.

⁷ This generally accepted critique of the SSNIP test is known as the cellophane fallacy.

disciplinary force on the suppliers of a given product, in particular in relation to their pricing decisions.” As such, it constitutes the core element of any market analysis.

Supply side substitutability, which is the second competitive constraint that firms face, refers to the ability of other firms to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices. This implies that firms producing substitutes must have the necessary production facilities and the technological know-how.

Different jurisdictions treat supply substitution differently. In the EU, supply substitution may be taken into account when defining markets when its “effects are equivalent to those of demand substitution in terms of effectiveness and immediacy”.⁸ In the US, on the other hand, reaction of suppliers is considered when identifying market participants and assigning market shares. Clearly both approaches recognise supply substitution as a relevant economic force in antitrust analysis - the difference is the stage of the competition assessment when this is done. Both approaches should lead to similar results if analysis is carried out correctly.

Finally, market entry and potential competition can constrain the suppliers of a given product. Potential competition refers to a threat of entry that either takes place in the long term or that involves substantial sunk costs. In the latter case, potential entrants may not respond to small but significant price increases because given irreversible investment that is involved, they are committed to enter the market. Because potential competition is distinct from supply substitution which takes place immediately, it is not taken into account when defining markets. It is dealt with at a later stage of competition analysis, when competition authorities assign market shares to the companies present in the relevant market. Consequently, this competitive constraint is not considered further in this note.

⁸ *Telekomunikacja Polska* [2011], para. 579.

**Box 1. A non-exhaustive list of sample questions to be asked
when defining relevant markets**

- Which products and/or services are relevant for the investigation?
- What are the characteristics, functionalities and end-use of the products/services in question?
- Are there any substitutes to the products and/or services in question?
- How would customers react to a small but significant (e.g. 5-10%) and non-transitory price increase (SSNIP) of the product/service in question?
- Do consumers have to incur any costs when switching from product A to a substitute product B? Is there evidence of switching?
- Would another firm start providing the product or service in question in case of a SSNIP?
- How far would customers go to buy a substitute product in case of a SSNIP? Are conditions of competition homogenous across the country?

CHAPTER 2: MARKET DEFINITION PROBLEMS IN TELECOMMUNICATIONS

In principle, the outcome of the market definition exercise, whether carried out by a competition or a regulatory authority, should coincide. Yet, it might happen that in specific cases markets will be delineated differently under competition law. First, the forward-looking analysis of RAs goes beyond the circumstances of a given case, while CAs have to define the relevant market on the basis of case-specific facts. In other words, the starting point is different. Second, the different time horizon used by the RAs and CAs might likewise lead to different delineation of the market. The scope for divergent analysis is of course decreased where *ex ante* analysis undertaken by RAs follows the same methodology as analysis undertaken *ex post* by CAs.

The risk of reaching divergent conclusions on the precise boundaries of relevant market is not just of theoretical importance. Different conclusions on the definition of relevant market have, for example, been reached by the European Commission and by the French regulatory authority with respect to the conduct of Wanadoo in the broadband market.⁹ In *Wanadoo*, the Commission explicitly admitted that its “market definition is broader than that used by the [French regulatory authority] ART”. While the Commission identified the relevant service market as the market for high-speed Internet access for residential customers, the ART distinguished a high-speed Internet access market using ADSL technology, “notably because of the difference in its penetration potential compared with Internet access cable”.¹⁰

In addition to different time horizons used by the RAs and CAs, telecommunications markets exhibit certain features which may complicate a straightforward application of the SSNIP test, as we now discuss.

⁹ European Commission, Case COMP/38.233, *Wanadoo Interactive* (2003).

¹⁰ *Ibid*, para. 204.

2.1 The sequencing of market definition: retail and wholesale markets, indirect constraints and chains of substitution

2.1.1 Retail and wholesale markets

In telecommunications it is typical to distinguish between retail/downstream markets where firms sell services/products to end users, and wholesale/upstream markets where firms sell inputs to other firms, which then use it to deliver services to end users. This distinction is particularly important for regulation because regulatory authorities should always seek to impose the least burdensome remedy to address the identified competition concerns.¹¹ Because bottlenecks in telecommunications, which justify the existence of regulation, can be found at the wholesale level, it is typically considered that regulation should focus on ensuring access to bottlenecks in order to facilitate development of competition in downstream markets.¹²

In the presence of two vertically-linked markets, one of the first questions is whether it makes a difference whether the upstream or downstream market is delineated first. The EU Recommendation on relevant product and service markets¹³ indicates that market definition should start from the delineation of a

¹¹ For example, In accordance with Article 17 of the Universal Service Directive, appropriate regulatory obligation on a retail market can be imposed as a measure of last resort on undertakings with significant market power only where (i) a given retail market is not deemed to be effectively competitive, and (ii) according to the NRA, obligations imposed on the upstream market would be insufficient to ensure the achievement of the objectives set out in Article 8 of the Framework Directive.¹¹ Decision to regulate retail market suggests therefore that neither retail nor upstream markets are effectively competitive. *A contrario*, decision not to regulate an upstream market entails that such market is already competitive, likely because of the availability of inputs from alternative providers. This in turn further implies that downstream market should also be competitive, in which case retail regulation becomes inapplicable.

¹² Justification for economic regulatory intervention in telecommunications is typically justified upon the existence of natural monopoly, network externalities and high and non-transitory barriers to entry, which cause market failures.

¹³ Recommendation [2007], para. 4, and Recommendation [2003], para. 7: “The starting point for the definition and identification of markets is a characterization of retail markets over a given time horizon, taking into account demand-side and supply-side substitutability. Having characterized and defined retail markets which are markets involving the supply and

relevant retail market. This is so because demand for the upstream product or service is a derived demand, i.e. it is the demand for the retail services that determines the demand for the wholesale product. Therefore, an analysis of dominance in an upstream market depends on the competitive conditions in the related downstream market.¹⁴

The starting point makes a difference. This is illustrated by different approaches to the inclusion of technologies other than DSL bit-stream in the wholesale broadband access product market. Essentially, those national regulatory authorities that started market analysis at the wholesale level (i.e. Arcep in France, PTS in Sweden, or NITA in Denmark) did not include cable in the relevant wholesale market because cable operators, with few exceptions, do not provide wholesale access. In contrast, regulatory authorities that started market analysis from the retail market (i.e. BNetzA in Germany, ComReg in Ireland, Anacom in Portugal and Ofcom in the UK) found cable-based services to be part of the relevant market.¹⁵

2.1.2 The role of indirect constraints

The inclusion or exclusion of cable from wholesale broadband market is to some extent linked to the concept of indirect constraints. Indirect constraints are not specific to telecommunications. They may arise in any vertically integrated industry. Consequently, they may often be found in competition and regulatory cases. Where they arise they play an important role in the definition of the relevant market and in the assessment of market power. Therefore, it is

demand of end users, it is then appropriate to identify relevant wholesale market [...]"

¹⁴ Take for instance a retail broadband market with strong inter-modal competition coming from cable. Certain parts of incumbent's copper infrastructure may still constitute an essential or important input, even where cable operators supply or can supply significant part of the retail market. Demand for the incumbent's wholesale products, however, depends on the structure of the retail market, and therefore incumbent's ability to set prices independently of market conditions may be indirectly constrained by supply-side substitution in the retail market. On the relevance of indirect constraints see point 2.3.3 below.

¹⁵ Inderst, R. and T. Valetti (2007), 'Market Analysis in the Presence of Indirect Constraints and Captive Sales', *Journal of Competition Law and Economics*, vol. 3, no. 2, pp. 203-231.

important that competition and regulatory authorities adopt a consistent approach to the assessment of indirect constraints.

To explain the concept of indirect constraints, note that a firm active in an upstream market may be directly constrained if other firms operate at that level. For example, the ability of firm A to raise prices above the competitive level for a wholesale input X used to provide retail services is constrained by the ability of firms B and C to switch to wholesale input Y (substitute of X) supplied by firm B (demand substitution) or the ability of firm B to begin supply of the wholesale input X (supply substitution). However, when inputs X and Y are not substitutes, and firm B is unable to supply input X within a short-term, firm A may be still indirectly constrained in imposing a price for input X as long as there is competition at the retail market between firms using X and Y as inputs.

In Europe, controversy about the role indirect constraints should play in competition analysis is particularly visible in the context of broadband telecommunications services. Such services are provided over different technologies: DSL, cable, fiber, etc. The decision whether to include or exclude a particular technology from the relevant market is particularly relevant in regulated markets because of the direct link between the finding of significant market power and the imposition of *ex ante* remedies.

The inclusion of non-ADSL wholesale access in a market definition very much depends on the market characteristics prevalent in each country. First, wholesale broadband access over cable technology is not a ubiquitous solution. It is provided by cable operators only in a few countries. Second, even when such a solution exists, switching to cable-based access may be both time-consuming and costly as internet service providers (ISPs) may have to bear significant costs in case of switching and would probably need to sign contracts with multiple cable operators due to often high fragmentation of cable networks.

The provision of retail broadband services via alternative technologies therefore raises a question of whether indirect constraints should play a role in market analysis, and in particular in the definition of the relevant wholesale market. If they should, the next question is how retail substitution should be taken into account when defining wholesale markets. The overview of regulatory practice and competition case law where indirect constraints were discussed led

CRA (Charles River Associates) to distinguish the existence of two alternative approaches:¹⁶

- only direct constraints are considered when defining the relevant markets, while indirect effects are deferred to the market power/competitive effects assessment;
- both direct and indirect constraints are considered when defining the relevant market.

In the past, various authorities followed the direct constraint approach, i.e. they defined markets directly at the wholesale level, and applied the SSNIP test directly to the wholesale products. CRA International explains that “this approach is driven by practical considerations such as the desire to define markets including only clear substitutes”.¹⁷ In contrast, the second approach which is more consistent with an economic approach, seeks to identify and take into account all competitive constraints.

The existence and the impact of indirect constraints on the incumbent’s wholesale pricing was taken into account by Ofcom in a number of cases. For example, in the BT’s residential broadband pricing (*Freeserve*, 2010) case,¹⁸ the UK authority first explained that consideration only of direct, with the exclusion of indirect, constraints leads to the narrowest possible definition of the market and risks overstating incumbent’s market power. Second, it examined whether a small but significant price increase of BT’s ADSL intermediate wholesale service (IPStream) of 10% would be passed through to the retail market. As there was little functional difference between the retail broadband services offered via cable and ADSL, Ofcom found that a 10% increase in the price of ADSL-based broadband would be unprofitable as it would have caused sufficient demand-side substitution to broadband delivered via cable. Therefore,

¹⁶ CRA International (2006), *Indirect Constraints and Captive Sales: Overview of regulatory practice and competition case law with regards to indirect constraints and captive sales in market definition and market power assessment* (prepared for Ofcom). Available at: http://www.crai.com/ecp/assets/Indirect_constraints_and_captive_sales.pdf

¹⁷ Ibid.

¹⁸ Ofcom (2010), *Investigation into BT’s residential broadband pricing*, CW/00613/04/03. Available at: http://stakeholders.ofcom.org.uk/binaries/enforcement/competition-bulletins/closed-cases/all-closed-cases/cw_613/decision.pdf

if an increase in the wholesale price would be passed to the retail market, its impact would have been restrained by the retail substitution pattern.

In the *Freeserve* 2010 case, Ofcom chose to include sources of indirect constraints both at the market definition and assessment of dominance phase. Such an approach was in its view justified on two grounds. First, the indirect constraints exercised by cable operators produce a demand-side effect. While supply-side substitution and potential entry may also affect the overall analysis, “the constraining effect of cable operators does not depend on any perceived threat of entry to the wholesale market”.¹⁹ Second, the calculation of market shares would not reflect constraints coming from cable operators, if indirect constraints were taken into account only in the assessment of dominance.

While the second approach better reflects the economic purpose of market definition, it may artificially broaden the wholesale market in order to properly reflect competitive conditions at the retail market and to infer upstream market shares from the downstream market. The 2008 Australian Merger Guidelines take such a situation into account and provide an alternative solution.²⁰ In addition to the possibility of expanding market horizontally, the Guidelines also allow to define a single functional market covering both the upstream and downstream levels.

The Guidelines first explain that “the purposive nature of market definition can require the product or geographic dimension of a market to be extended beyond what can be substituted for products of the merger parties to include other functional levels in the vertical supply chain or other products that are typically purchased or supplied together with those of the merger parties”. The Guidelines then explain that “where merger parties are vertically integrated or compete against vertically integrated firms, the ACCC must determine whether competition analysis is best conducted in the context of one relevant market encompassing the whole vertical supply chain or a series of separate markets each comprising one or more stages of the chain. This delineation depends on the economics of integration. Importantly, there need not be trade between the relevant stages of the vertical supply chain for there to be separate markets—the potential for exchange can be sufficient. However, where there are overwhelming efficiencies of vertical integration between two or more stages in

¹⁹ Ibid, para. 2.166.

²⁰ ACCC (2008), Merger Guidelines. Available at: <http://www.accc.gov.au/system/files/Merger%20guidelines.pdf>

the vertical supply chain, the ACCC will define one market encompassing all those stages”.²¹

2.1.3 *Chains of substitution*

With the upgrading of copper access networks to next generation access networks (NGANs) and the deployment of fibre networks new issues have emerged with respect to market definition. In particular, in the EU regulatory authorities had to decide whether to include or exclude certain technologies and networks in the market definition. This issue concerns predominantly products delivered on FttN/FttC (VDSL)²² and FttH networks.²³

To illustrate one of the problems, consider a situation where end-users may choose between two extremely different broadband services in terms of speed: on the one hand, they can use a service with almost symmetrical uploading and downloading speed of 100 Mbit/s provided over fibre-to-the-home (FFTH) network, while on the other they can use a basic asymmetrical ADSL service with downloading and uploading speeds of 2Mbit/s and 256Kbit/s respectively. Even though these two services are not direct substitutes, they can belong to the same market as long as there is a chain of substitution between them. Such chain of substitution exists where the price of a broadband access service provided over ADSL is constrained by the price of the service provided over FFTH network. Such constraint, in turn, exists if substitution exists, for example, between ADSL and VDSL, on the one hand, and VDSL and FFTH on the other.

The notion of ‘chains of substitution’ has been endorsed by various competition authorities. For example, in the EU the Market Definition Notice states: “In certain cases, the existence of chains of substitution might lead to the definition of a relevant market where products or areas at the extreme of the market are not directly substitutable”. Where product B is a demand substitute for products A and C, then “even if products A and C are not direct demand

²¹ Ibid, paras. 4.41-4.42.

²² VDSL (Very High-speed Digital Subscriber Line) can offer download speed of 52Mbps and upload speed of 16Mbps. FttN (Fibre to the Node) or Fttc (Fibre to the Cabinet).

²³ FttH (Fibre to the Home).

substitutes, they might be found to be in the same relevant product market since their respective pricing might be constrained by substitution to B”.²⁴

This means that the relevant market may comprise products that may differ substantially in terms of characteristics (such as speed) and price. Such broadly defined markets reflect the economic purpose of market definition since the boundaries of the market are defined by the extent to which products and services, even if provided over different networks, exercise competitive constraint on each other’s prices.

Where markets are defined broadly because of a chain of substitution, it is important to corroborate the existence of such chains “by actual evidence, for instance related to price interdependence at the extremes of the chains of substitution”.²⁵

2.2 Complementarity between retail products and services and its impact on retail and wholesale market definitions

As already explained, demand substitution is important for market definition. In telecommunications, however, its analysis may be influenced by the fact that many services are consumed by end-users in bundles. Services in a bundle may be substitutes (mobile and fixed broadband services are considered as such in Austria), complements (access to the network and calls) or can be consumed independently (as is the case with broadband and voice telephony).

The nature of the relationship between two products is of crucial importance, for example, for the assessment of mergers. A merger between two firms offering substitute products is likely to result in price increase of both products. In contrast, while a merger between two firms offering complementary products has more ambiguous effects on competition, it is acknowledged that it can lead to lower prices by eliminating double-marginalisation.

With respect to market definition, bundles of substitutes do not pose any particular problems. When dealing, however, with complements, which have exact opposite properties, or products that can be consumed independently, competition and regulatory authorities need to consider whether the relevant

²⁴ Notice, para. 57. See also OFT Market Definition Guidelines, OFT 403, December 2004, para. 3.11. In Australia, the Merger Guidelines consider chains of substitution under the notion of indirect substitution.

²⁵ EU, *Ibid*, para. 58.

product market should be defined at the aggregated level of the bundle or at the level of its individual elements.

Box. 2.

***Deutsche Telekom* (EU, 2003)**

For the purpose of the decision, which concerned abuse of dominance through margin squeeze, the Commission identified three relevant markets: (i) the wholesale market for access to local fixed networks and two retail markets in (ii) narrowband and (iii) broadband access. Deutsche Telekom (DT) was found to be dominant in all of them, and it disputed neither the definition of the relevant markets nor its dominant position.

The DT's wholesale product, unbundled local loop, could be used to provide a variety of retail services (analogue, ISDN and ADSL access). However, in the absence of an individual wholesale tariff corresponding to an individual retail tariff, the Commission decided to test the existence of margin squeeze on the aggregated - and not individual - service level. Such methodology has been criticised for the exclusion of call revenues. Deutsche Telekom argued that the relevant retail revenues should include revenues from access as well as other telecommunications services, in particular telephone calls since “[...] the wholesale costs for the local loop are overheads both for the provision of retail access and for telephone calls, so that any attempt to allocate costs to individual services in order to investigate the possibility of below-cost selling makes no economic sense and is consequently arbitrary”.²⁶

Certainly, most users consider access to the network and calls to be complementary products. It is hard to think of a situation where an end-user would be interested in paying a monthly fee for the access without possibility of using complementary services such as call or internet connection. However, the inclusion of call revenues in the calculation of the margin squeeze would not be consistent with the market definition, which did not include calls and which Deutsche Telekom did not dispute.

Markets where consumers demand and producers supply several distinct products jointly are known in the literature as cluster markets.²⁷ Cluster markets exist because of transaction complementarities between individual components

²⁶ Commission Decision, *Deutsche Telekom* (2003), para. 117.

²⁷ The concept of ‘cluster markets’ was first used US by the US Supreme Court in *United States v. Philadelphia National Bank*. Since then it has been extensively used in the US, mainly in cases concerning financial and healthcare services.

of a bundle, which arise when economies of scope in the production lead to lower transaction costs for the consumer.²⁸

The decision of the European Commission in the *FAG* case shows how complementarity affects market definition.²⁹ The first question the Commission had to answer was whether ground-handling services on the ramp in the Frankfurt airport formed a separate market from the bundled service of providing airport facilities for the whole process of landing and take-off of aircraft. While *FAG* argued that the services should not be provided separately because they complemented each other, the Commission considered that they actually formed two separate markets. Such a conclusion was motivated in particular by the fact that (i) as regards the demand side, the airport customers were usually charged separately for landing and ground-handling services;³⁰ and (ii) as regards the supply side, while the provision of airport facilities for the landing and take-off of aircrafts exhibited the characteristics of a natural monopoly, competitive provision of ground-handling services was feasible as demonstrated by the experience of several other European airports.³¹

In Hong Kong, in deciding whether a cluster market exists, the telecommunications regulator will take into account various factors. In particular, it will consider whether:³²

- unbundling imposes identifiable costs on consumers;

²⁸ Transaction cost savings enjoyed by the consumer may be reinforced when joint provision of given products gives rise to economies of scope and scale on the supply side.

²⁹ Commission Decision 98/190/EC of 14 January 1998, IV/34.801, *FAG/Flughafen Frankfurt/Main AG*, O.J. [1998] L 72/30.

³⁰ In examining the demand side the Commission pointed out that there was “no possibility of substitution between the two services”. Of course, the reason services were not substitutable, which generally supports the finding that such services fall within separate markets, was that they were complementary. In the Commission’s view, however, “the degree of complementarity is not such that these services have to be purchased from the same supplier”. *Ibid*, para. 65.

³¹ *Ibid*, para. 65.

³² Telecommunications Authority Guidelines: Mergers and Acquisitions in Hong Kong Telecommunications Markets, CB(1)2416/10-11(02), para. 3.30. Available at: <http://www.legco.gov.hk/yr09-10/english/bc/bc12/papers/bc120607cb1-2416-2-e.pdf>

- unbundling costs are substantial relative to the price paid for a bundle;
- demand for the components in a bundle is correlated among consumers or, alternatively, is focused on one core component; and
- a supplier's market share for one component responds in accord with the market share for the other in response to a price change.

The fact that complementary products are demanded and provided in bundles does not therefore change the basic principles of market definition.³³ Consequently, the conventional SSNIP test applies. Thus, if following a price increase end-users instead of the bundle purchase the bundle's elements separately, then such individual elements constitute the relevant market.³⁴ However, if strong complementarities in demand are not taken into account and the process of delineating the relevant market starts from the narrowest product, there is a risk that market definition will be construed too narrowly.

2.3 Asymmetric one-way substitution: the case of fixed-to-mobile substitution

The process of defining relevant markets can also be complicated by the existence of asymmetric (one-way) substitution. In telecommunications, one-way substitution is likely to take place with respect to switching from less capable networks and services to more capable ones, but not the other way round.

Fixed to mobile substitution has important implications for regulatory and competition authorities. Where mobile and fixed (voice and broadband) networks are likely to converge the authorities need to review the extent to which the two networks compete. This will have an impact on a number of regulations as well as on antitrust investigations in abuse of dominance and merger cases. For example, in December 2006, the FCC reviewed and approved a merger between AT&T and BellSouth – two large US fixed-line operators.³⁵

³³ See EUROPEAN COMMISSION (2002), Market Definition in the Media Sector – Economic Issues, Report by Europe Economics.

³⁴ For the discussion on the impact that bundled offers have on market definition see BEREC (2010), Report on impact of bundled offers in retail and wholesale market definition, BoR (10) 64.

³⁵ Federal Communications Commission (2007), Memorandum Opinion and Order, WC Docket No. 06-74, In the matter of AT&T Inc. and BellSouth

The FCC found that the transaction was unlikely to have anti-competitive effects on the mass market for voice telephony because neither of the parties was at the time or was likely to become over time active in the market outside of its own region. However, the FCC also added that the rapid growth of intermodal competitors – from cable telephony, mobile wireless service providers as well as providers of certain VoIP services was likely continue to provide end-users with viable alternatives.³⁶

To date, one-way substitution has been most extensively discussed with respect to fixed and mobile telephony (FMS) services. In Europe, the majority of national RAs have examined the extent to which fixed and mobile services can substitute each other and found that such services belong to separate retail markets. As BEREC Reports explains most NRAs reached such conclusions given: (i) “the existence of different characteristics between fixed and mobile offers (e.g. differences in price, bandwidth, mobility and usage limitations); and (ii) the existence of different preferences and different usage patterns between fixed and mobile services users”.³⁷ However, in a refinement of this, the Finnish regulatory authority, FICORA, found “that retail fixed access for voice services was fully substitutable with mobile access services, but not the other way around. That is, there was no two-way substitution between these services. If there was a SSNIP for retail fixed access services, fixed subscribers would switch to mobile telephony subscriptions. But if there was a SSNIP for retail mobile access services, mobile subscribers would not switch to fixed telephony subscriptions”.³⁸

Asymmetric substitution is also likely to arise with respect to fixed and mobile broadband services, narrowband and broadband services, double- and triple-play offers, and now - with the deployment of NGAs and increasing consumption of high-speed dependant services - between high-speed and regular-speed broadband services. For example, in 2003 the European Commission concluded in *Wanadoo* that given extremely asymmetrical substitution between low-speed and high-speed internet access “the relevant service market to be used in analysing Wanadoo Interactive’s conduct is the

Corporation application for transfer of control, FCC 06-189. Available at: http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-06-189A1.pdf

³⁶ Ibid, para. 83.

³⁷ BEREC (2011), Report on Impact of Fixed-Mobile Substitution in Market Definition, BoR (11) 54.

³⁸ Ibid, p. 15.

market for high-speed internet access for residential customers”. Also the Federal Communications Commission (FCC), the Federal Trade Commission (FTC) and the Department of Justice (DoJ) in the United States have all independently held that residential high speed broadband internet access service constitutes a separate market from narrowband services.

Thus, one-way substitution has important implications for market definition. In Finland, FICORA concluded that, “the non symmetric substitution led to the definition of two separate markets: retail mobile access is a distinct adjacent product market which gives rise to competitive constraints being exercised on operators in the fixed access market.”

Box 3.

Fixed and mobile broadband in the same relevant market (Austria)³⁹

In September 2009 the European Commission registered a notification from the Austrian regulatory authority (RTR) concerning the market definition for wholesale broadband access in Austria. In order to define such market, RTR started its analysis by examining the corresponding retail market. To determine which access technologies should be included, RTR carried out a SSNIP test. Its result revealed that in contrast to the prevailing trend of delineating separate markets for fixed and mobile services, in Austria the residential retail market for broadband access included mobile broadband and cable TV (CATV) connections in addition to copper-based DSL connections.

In October 2009 the Commission expressed serious doubts with respect to the inclusion of mobile broadband access in the residential customers’ retail broadband access market. According to the Commission, RTR did not substantiate its finding that mobile broadband access is an adequate substitute of fixed broadband access. In particular, the Commission stated that “in order to correctly define the substitutability of two different products a proper assessment of the functionality and end use of the relevant products is necessary”. Such assessment, required in particular the analysis of “whether all fixed and mobile broadband connections can be used for specific applications such as the download of music or films and whether they provide sufficiently secure connections allowing customers to use any of the connections for internet banking and other applications requiring a protected connection, as many residential broadband users use such functionalities of their broadband connection”.

In response to the Commission’s serious doubts letter, RTR provided additional information concerning the inclusion of mobile broadband in the residential customers’ broadband access market. According to RTR, its broad market definition could be justified on the following grounds:

³⁹ Case AT-2009-0970.

- A price analysis based on price regressions showed that prices of fixed and mobile broadband connections moved closely together and that fixed broadband providers directly react to price reductions introduced by mobile broadband operators;
- The customers' survey revealed that residential customers consider mobile broadband as a substitute rather than a complement to fixed broadband: 76% of residential mobile broadband customers use their connection on a stand-alone basis, and only 24% couple it with a fixed connection.
- There are no significant differences with respect to functionalities of fixed and mobile broadband internet.

The BEREC Report (2011) points out that in case of an asymmetric substitution, it is important to define the focal product of the market analysis, i.e. the main product under investigation. Such focal point can, for example, be defined with respect to a product where competition problems are believed to exist. On the basis of the analysis carried out by RAs in the EU, BEREC identified two approaches to asymmetric substitution:⁴⁰

- RAs consider the effects of asymmetric substitution on the focal product when delineating the relevant market;
- RAs consider the effects of asymmetric substitution on the focal product (i) when analysing whether the three criteria test for imposing *ex ante* regulation is met; (ii) in the competition assessment or (iii) when defining the appropriate remedies.

Under the first approach, if there is substitution from the focal product to another product, both products belong to the same market. If, on the other hand, there is no substitution from the focal product to the alternative product, but there is substitution in the opposite direction, the two products belong to separate markets.

⁴⁰ BEREC (2011), p. 13.

The BEREC Report (2011) also points out that bundles may have a substantial impact on the evolution of fixed to mobile substitution. The uptake of bundles can increase end-users' loyalty towards their fixed operator, which in turn can have a negative impact on fixed-to-mobile substitution. In fact, "countries such as Finland (14%) or the Czech Republic (19%) that exhibit an increasing number of mobile only households have the lowest rate of bundle penetration. Countries such as Sweden (50%), the Netherlands (67%) and France (55%) that exhibit high and steady rates of fixed access penetration also have higher rates of bundles penetration". Accordingly, given that "there appears to be a correlation between the penetration of bundles and fixed mobile substitution patterns" BEREC considers bundles to be an "important parameter that need to be considered in a FMS".⁴¹

2.4 The impact of emerging services on market definition: the case of VoIP

In the fast evolving and innovation sensitive communications sector, emerging services (such as VoIP) can effectively constraint behavior of the market players. Where such services are considered by end-users as potential substitutes for traditional telecommunications services, they may have a considerable impact on the delineation of the precise boundaries of relevant markets. However, given that conclusions on market definition need to be reached on a case-by-case and empirical basis, instead of implying whether VoIP service is a substitute for PSTN⁴² or a different service, this section simply illustrates the impact that emerging technologies may have on market definition.

⁴¹ BEREC (2011), p. 54.

⁴² PSTN – Public Switched Telecommunications Network.

Box 4.
VoIP and VoB (France, 2005)⁴³

In 2005, ARCEP (the French telecommunications regulator) asked Conseil de la Concurrence (the French Competition Authority) for an opinion on its draft decision concerning the definition of the fixed telephony market. The Council requested ARCEP to revise its definition in order to include Voice over Broadband (VoB). This was a new type of Voice over Internet Protocol (VoIP) service. According to ARCEP, the provision of VoB could not be separated from the provision of retail broadband access, and since it was offered on the retail broadband market it should be excluded from the fixed telephony market. However, the competition authority disagreed. It argued that while VoIP services, such as peer-to-peer, were not sufficiently substitutable with traditional telephony services because of quality issues, this was not the case of VoB services. In contrast to services provided over public Internet, VoB services are routed by specific network equipment that monitors the quality of service offered.

The Council explained that differentiated products, but with the same function or intended for the same use may well be considered interchangeable in terms of the application. In order to assess substitution between various voice services from the end-users' perspective, it is appropriate to consider quality, how end-users actually use the product as well as functionalities that can be provided with respect to a particular voice service. For example, the Council acknowledged that in the analysis it was necessary to highlight the difference between traditional voice services and VoB in terms of the attribution of geographic numbers. However, since the numbering plan takes into account the impact of convergence, the regulator held that "under the principle of technological neutrality, the allocation of geographic numbers to operators offering voice over broadband should follow the same rules as for operators of traditional telephony service. Consequently, in the Council's view the specific characteristics of VoB did not preclude the finding of substitution from the end-users' perspective between VoB and traditional fixed voice telephony service.

Since regulations should reflect the current state of competition in the market, the Council referred to France Telecom's announcement concerning the plan to have DSL technology on 90 per cent of lines at the end of 2005. This, in the Council's opinion, implied that VoB could in the short-term exercise sufficient competitive pressure on traditional fixed voice telephony to consider that these two services belong to the same relevant market.

⁴³ Conseil de la Concurrence (2005), Opinion No. 05-A-05 of 16 February 2005 concerning market analysis of retail and wholesale fixed-line telephony. Available at: <http://www.autoritedelaconcurrence.fr/pdf/avis/05a05.pdf>.

The French case illustrates the growing importance of services provided in IP environment as well as the fact that technology underlying the provision of a given service does not in itself define the boundaries of the relevant market. Given the progressive migration from the traditional telecommunications network to IP networks, regulatory and competition authorities need to correctly assess the potential competitive constraints imposed by VoIP or other emerging services in order to properly delineate the relevant markets in IP environment.

2.5 Market definition for business services

On the retail level, relevant markets are often defined with respect to different categories of users: sometimes residential and business users fall within the same relevant market, sometimes they fall within two separate markets. However, it is clear that first, some businesses have very different needs than residential users, and second that business users may not form a uniform category given their different nature and size. For example, the needs of small and medium enterprises (SMEs) may resemble more the needs of residential users. In the merger between Vodafone and TelstraClear, cleared by the New Zealand Commerce Commission, the Commission found that certain categories of businesses (i.e. businesses operating from home and small business having their own premises) form part of the residential market as the telecommunications products they purchase are typically equivalent to products purchased by residential customers.⁴⁴ The Commission also found that while for the purpose of the case at hand it was not necessary to form a conclusive view as to whether fixed-line services provided to different categories of firms are in separate markets or whether they are segments within a larger differentiated market, the competition analysis considered separately the SME segment.

Large and multi-national firms generally have more complex and sophisticated needs and often telecommunications firms offer them tailored-made services.

⁴⁴ Commerce Commission, New Zealand (2012), Vodafone New Zealand Limited and TelstraClear Limited (2012) NZCC 33. Available at: <http://www.comcom.govt.nz/business-competition/mergers-and-acquisitions/clearances/clearances-register/detail/760>.

Box 5.

Telefónica: Tailor-made broadband solutions (EU, 2007)⁴⁵

In *Telefónica*, for example, the European Commission defined the relevant market as the market for all the non-differentiated broadband products, whether provided through ADSL or any other technology, marketed in the “mass market” for both residential and non-residential users. The relevant market, however, did not include tailor-made broadband solutions, which are mainly offered to large corporations.

The Commission found that there was no substitution between standard ADSL and tailor-made ADSL products. This is because ADSL “caters for customers with common and nonspecific need”, while tailor-made products are “destined to meet the special and specific needs of certain customers in terms of electronic communications services in general and of data transmission services in particular”. Tailor-made services, in particular, “incorporate more advanced functionalities (much higher download speeds, greater web-page hosting capacities, the possibility of multi-terminal use and networking operation) and their prices are higher than the standard access services marketed in the mass market.

Lack of substitution existed both on a demand- and supply-side. Given the features of tailor-made offers it is clear that customers of such services will not switch to standard broadband offers even if the price of the tailor-made offer is increased by around 5-10%. On the supply-side, lack of substitution exists because “the inputs used to provide tailor-made services on one hand, and standard ones on the other, are different in terms of the technologies used, the distribution networks and the marketing tools. Standard products are marketed through mass-media publicity, reach the consumers through non-specialized distribution networks and are built on the technologies that better fit the needs of mass-market end-users that will be looking at ease of usage and low price. Conversely, tailor-made services are usually marketed by specific offers to companies, often presented in bidding processes, designed and implemented by sectoral experts and built on sophisticated technological solutions aimed to meet particular needs. Broadband internet access for business customers can also be achieved through other options such as fiber-optic networks, leased lines, wireless local loops and satellite connections suitable to meet their particular requirements. These options are costly but are viable in the case of business customers”.

⁴⁵ European Commission, Case COMP/38.784, *Wanadoo España vs. Telefónica* (2007).

The Telefónica case shows that the boundaries of the relevant product market may be determined by the category of users. There are, however, some telecommunications services, in particular leased lines, that are purchased almost exclusively by business customers. Leased lines, also known as private circuits, provide dedicated transmission capacity to carry voice and data traffic between a customer's premises. They are characterised by special quality features, such as symmetric bandwidth. When defining the scope of the retail leased line service market, a number of issues can arise. For example, when examining demand substitution, it is necessary to consider whether other data transmission services, such as Virtual Private Networks (VPNs), Symmetric Digital Subscriber Loop (SDSL) or Ethernet in the First Mile, should be included in the same retail market.

Ofcom, for example, found that retail leased lines constitute a distinct market from other data services. In its view, the sub-division of symmetric services into separate markets is justified in light of the unique characteristics of leased lines. In particular, a leased line offers dedicated, symmetric transmission between two points, with guaranteed bandwidth. In contrast, other data services (such as VPN), are shared at some point, and thus do not provide guaranteed bandwidth. Moreover, there are different degrees of flexibility enjoyed by the users and different levels of customer care. Given these characteristics, Ofcom considered that “consumers who require a leased line are unlikely to switch to an alternative data service if a hypothetical monopolist was to increase the price of leased lines by 5 to 10 per cent above the competitive level”. Also, on the supply side, suppliers of symmetric data products other than leased lines would not be in a position to exert constraint on the hypothetical monopolist providing leased lines because a proportion of the existing suppliers of these other symmetric data products actually buys retail leased lines in order to supply their services. Ofcom considered also whether competitive cable access network could facilitate supply substitution. It found that they could not because first, in the UK cable networks are inherently asymmetric, and second, they have been deployed mainly in residential areas whereas leased lines are typically purchased by businesses, and thus are typically deployed in business districts.

2.6 Call termination markets: the case of mobile termination

A telephone call between two end-users requires two essential services: call origination and call termination. When defining the market for the termination services it may be necessary to consider the impact on market definition of a calling-party-pays (CPP) versus a receiving-party-pays (RPP) approach to charging.

In most countries, the CPP arrangement applies. In such case, the person initiating the call pays the full cost of the call. In a few countries, and most notably in the US, the recipient of the call pays the higher cost of receiving the call on his/her mobile phone.⁴⁶ This arrangement is known as RPP.

Where the RPP principle applies, termination service may be a part of the market for retail mobile services. In contrast, where the CPP applies, wholesale call termination on a single mobile network can constitute a relevant product market, with the owner of the network holding 100 per cent market share. This is because mobile operators face virtually no competitive pressure in the wholesale market for call termination.

Because narrowly defined markets generally imply a higher market share for a particular firm, it is not surprising that market players have an incentive to argue that the relevant market is broad. If no firm has SMP in the market, *ex ante* obligations, in principle, cannot be imposed. In the UK, for example, four mobile operators (O2, Orange, T-Mobile and Vodafone) argued that it is inappropriate to consider call termination as a separate market, as it is just one element of a bundle of interconnected mobile services. They also submitted that there was a single market for the provision of all mobile services in the UK, which was competitive since none of the mobile operators “had the ability to earn excessive profits from call termination because the competitive pressures they all faced in respect of the totality of the services they offered competed away any such profits”.⁴⁷

However, under the CPP approach, call termination is not an element of a bundle of retail mobile services because it is not subject to the same competitive constraints as other elements of the bundle. Moreover, call termination is a wholesale service, and as such it is not purchased by end-users. Whether it is a fixed-to-mobile or mobile-to-mobile call, it is always the operator of the user initiating the call who buys call termination service. End-users simply buy an off-net telephone call service. Also, in terms of demand substitution, it has to be

⁴⁶ The RPP usually applies in countries where, historically, the subscriber of fixed telephony service benefited from free local calls.

⁴⁷ See Competition Commission (2003), “Vodafone, O2, Orange and T-Mobile: Reports on references under section 13 of the Telecommunications Act 1984 on the charges made by Vodafone, O2, Orange and T-Mobile for terminating calls from fixed and mobile networks”, London. Available at: http://www.ofcom.org.uk/static/archive/oftel/publications/mobile/ctm_2003/ctm1.pdf

noted that mobile users generally do not care about the termination rates when they choose a network.

2.7 Geographical segmentation of telecommunications regulation

In principle, market analysis should be conducted separately for every individual geographic market. In telecommunications, regulatory and competition authorities in most OECD countries have traditionally defined relevant markets as national in scope. This is not surprising given that geographical scope is often defined by the licensing regime: if the license is national, then so likely is the market. However, as the number, coverage and market share of alternative networks and alternative operators increases, competitive conditions may no longer be homogenous across the country. This, in turn, the argument goes, should be reflected in competition analysis and decisions issued by regulatory and competition authorities.

As a matter of fact a number of OECD countries have already applied regulation on a sub-national basis.⁴⁸ In Australia, for example, the ACCC acknowledged that *ex ante* regulations should reflect the fact that infrastructure-based competition is likely to develop in a heterogeneous manner across the country.⁴⁹ Sub-national regulation of telecommunications markets arises where either relevant markets are defined on a sub-national basis, or where remedies are differentiated geographically even if markets are defined nationally.⁵⁰

⁴⁸ For a detailed analysis of geographical segmentation of telecommunications regulation, see OECD (2010), 'Geographically Segmented Regulation for Telecommunications', *OECD Digital Economy Papers*, No. 173, OECD Publishing.

⁴⁹ ACCC (2006).

⁵⁰ For example, in 2008, the Austrian regulator, TKK proposed to define the wholesale broadband market as national in scope (despite certain geographic variations), and designate Telekom Austria as operator with significant market power (SMP). However, while the TKK considered that the incumbent operator enjoyed SMP on a national level, it found that competition problems existed mostly in areas with limited infrastructure competition. The EU regulatory framework does not preclude the imposition of different remedies in the same relevant market. However, the TKK's decision was appealed and overturned by the Austrian court, and the regulator had to re-notify its revised market review.

Box 6.
Definition of sub-national markets (UK, 2008)⁵¹

The very first example of sub-national geographic segmentation in telecommunications in the EU comes from the UK. In November 2007, Ofcom submitted to the European Commission a notification concerning the wholesale broadband market, in which it proposed to significantly modify the existing *ex ante* regulation. In particular, in contrary to its first market review, Ofcom proposed to regionally segment the relevant market in the UK excluding the Hull area.⁵² This resulted in the deregulation of wholesale broadband access to 65 per cent of all UK homes and businesses.

According to Ofcom such modification was necessary because it accurately reflected these developments which suggested that there may no longer be a national geographic market. In particular, Ofcom pointed to:

- The introduction by BT of geographically de-averaged prices for its wholesale broadband products in response to LLU-based competition; and
- Increased competitive pressure exercised by alternative providers relying on LLU that vary geographically in terms of retail products and prices.

As a result, competitive conditions are no longer homogenous across the UK.

Ofcom considered that BT's local exchanges constitute the smallest appropriate geographic unit of analysis because this is where substitution for wholesale broadband access supply takes place. While on the basis of supply considerations each of the BT's exchanges would be a relevant market, Ofcom decided to avoid defining such narrow markets in order to establish a workable approach to market review.⁵³ Accordingly, Ofcom aggregated geographic units into markets based on the concept 'similar competitive conditions'.

⁵¹ Ofcom (2008), Review of the wholesale broadband access markets: Final explanatory statement and notification.

⁵² According to Ofcom the Hull area constitutes a distinct geographic market because, in contrast to other regions, there is only one local incumbent present (Kingston).

⁵³ For a detailed analysis concerning the choice of an appropriate geographical unit see, for example, CRTC (2006), Forbearance from the regulation of retail local exchange services, Decision 2006-15, para. 143. Available at: <http://crtc.gc.ca/eng/archive/2006/dt2006-15.htm#sIV>.

Geographical segmentation of regulation and competition analysis is likely to become increasingly important as together with the deployment of Next Generation Access Networks (NGANs) the take up of ultra-fast networks leads to the differentiation of competition conditions in broadband markets.

In principle, geographically tailored regulation may better reflect market reality and heterogeneity in competitive circumstances that has developed between various geographic regions. If regulation is not withdrawn where there no longer is a firm with significant market power, there is a risk that innovation may be stifled and that the predictability and stability of the regulatory regime may be compromised. For example, when considering applications for regulatory forbearance, the CRTC (telecommunications regulator in Canada) considered that using the incumbent local exchange carrier's (ILEC) "territory or province may result in the ILECs continuing to be regulated in certain areas beyond the point where regulation is necessary to ensure that the interests of users of telecommunications services are protected. Such over-regulation could serve to stifle innovation on the part of ILECs and could result in competition developing in an unhealthy manner as competitors could become overly reliant on the existence of regulatory protection".⁵⁴ On the other hand, there remains considerable uncertainty about the extent to which withdrawing *ex ante* regulation in geographic regions where competition has developed would effectively further promote competition as well as more efficient use of and more efficient investment in infrastructure. As the ACCC noted, "determining the precise scope of the areas to be covered by the exemptions is a 'finely balanced process involving a level of judgment'".⁵⁵

Geographical fragmentation, moreover, is a source of concern for multinational business users, especially with respect to wholesale broadband access services. Multinational business users are likely to value highly an opportunity to obtain access to seamless international network services. Fragmented national, and even more so sub-national, regulation may have a negative impact on the provision of such services. In fact, the ERG which has "acknowledged the need to distinguish between mass consumers and business users when doing market analyses [...], is emphatic that the damaging impact on

⁵⁴ Ibid.

⁵⁵ ACCC (2008), Unconditioned Local Loop Service Access Dispute between Telstra and Chime Communications – Statement of Reasons for Final Determination, March.

multi-site/business users of geographic segmentation of telecom regulation” should be recognised.⁵⁶

2.8 Bundling of communications services

Bundling is a ubiquitous commercial strategy and as such it can be found in telecommunications as well as in many other industries. Bundling refers to the sale of two or more products in one package at a price that is often more attractive than the price for the constituents part of the bundle.

Bundling can be either pure or mixed. *Pure bundling* occurs when two or more products/services are sold only as a bundle. Accordingly, consumers cannot purchase such goods individually. In contrast, *mixed bundling* occurs when consumers can purchase either the entire bundle or separately individual components of the bundle. Since consumers need an incentive to choose a bundle over its individual components - as otherwise mixed bundling would not be attractive to consumers – firms typically offer a discounted price for the bundle (*price bundling*) or some type of beneficial integration among the services without a price discount (*product bundling*).⁵⁷

An important distinction in economic literature is made with respect to tying and bundling. While these two practices are similar, they are not identical. Tying refers to a practice of a selling one product (the tying product) only on the condition that the buyer also purchases another (tied) product. Bundling, on the other hand, refers to the practice of selling two or more different products or services at a usually discounted price. Pure bundling, therefore, can be seen as form of tying. The remaining part of the note, however, focuses on mixed bundling as this form is most common in telecommunications markets.

Bundling of various telecommunications services has always been a feature of telecommunications markets since incumbent operators have always offered end-users fixed access with different pricing plans for fixed voice telephony. However, with the digitalisation and convergence, the number and the range of bundled offers has significantly increased. For example, today, more than 60% of all internet connections in Europe are sold as part of a bundled offer.⁵⁸

⁵⁶ INTUG submission to OECD concerning the draft report on “Geographically Segmented Regulation in Telecommunications”, December 2009.

⁵⁷ OECD (2011), *Broadband Bundling: Trends and Policy Implications*.

⁵⁸ European Commission (2012), *E-Communications Household Survey*, section 6.2., p. 31. Available at: http://ec.europa.eu/public_opinion/archives/ebs/ebs_381_sum_en.pdf.

This can be explained by the fact that, on the one hand, cable companies have started offering telephony and broadband services, while on the other, traditional telephony companies have entered the market for broadband internet access and television. This has been possible thanks to the transition from legacy PSTN (Public Switched Telephone Network) to IP (Internet Protocol) broadband network.

However, because of the transition to IP networks, pricing for core and strategic telecom services have either remained flat or declined. To improve their ARPU (Average Revenue per User), which in some segments of the telecommunications sector has been falling, telecommunications operators adopt short and long-term strategies to increase ARPU and secure their revenues. Bundling is one of such strategies.

Bundling can be economically attractive for a number of reasons. Some of them are legitimate and pro-competitive, while others may harm consumers. Firms, for example, may be interesting in bundling because it can lead to cost reductions in the production and distribution, quality improvements or because it allows price discrimination. However, bundling can also be used to leverage market power, thereby increasing barriers to entry for new firms. Moreover, there is a risk that consumers may be locked in with a sub-optimal service choice if switching is impossible, difficult or costly. Finally, the complexity of bundled offers makes it difficult for consumers to compare prices across different firms.⁵⁹ Because bundling can potentially distort competition, some regulatory authorities require operators with SMP to communicate offers, including bundles, prior to launching.

Increasing popularity of bundles means that competition and regulatory authorities may have to assess their impact on market definition when carrying out market analysis. The boundaries of the relevant market are important because dominance or significant market power on a given service does not automatically imply dominance in the provision of a bundled offer, and vice-versa. Therefore, depending on the boundaries of the relevant market, a given behaviour or merger may raise competition concerns or not.

⁵⁹ For a summary overview of reasons why firms bundle see, for example, OECD (2011), *Broadband Bundling: Trends and Policy Implications*, DSTI/ICCP/CISP(2011)2/FINAL.

Since bundling of telecommunications offers is not a new issue some authorities have already years ago sought to provide industry stakeholders with the information concerning the approach likely to be followed when assessing whether specific bundling offer in the telecommunications sector is anti-competitive. ACCC, for example, explained that while assessing bundling the Commission will consider in particular:⁶⁰

- “Whether the non-price effects of the conduct are anti-competitive, such as involving the leveraging of market power from non-competitive to competitive markets, or whether the conduct increases barriers to entry; and
- Whether the price(s) for the bundled services involves any elements of predatory pricing or a vertical price squeeze in the relevant market(s)”.

Accordingly, this section of the paper discusses some of the most relevant issues competition and regulatory authorities may encounter. The focus is on mixed bundling, which is most relevant in the telecommunications sector.⁶¹

2.8.1 Treatment of bundling under competition law

The treatment of mixed bundling has been one of the most controversial topics in the context of abuse of dominance and monopolisation cases. Whereas competition authorities generally recognise that bundling may harm competition or lead to anti-competitive foreclosure, they adopt different approaches to the assessment of the effects of such practice.⁶² Some CAs require a price-cost, while others do not. The choice of a specific standard may be determined by how a given jurisdiction views bundling in comparison to other potentially abusive practices such as predatory pricing, tying or exclusive dealing. For example, the Canadian Competition Bureau considers that bundled discounting may constitute predatory pricing, but also that it may produce the same effects as tying. In the US, antitrust law focuses on the discounted price at which a bundle

⁶⁰ ACCC (2003), Bundling in Telecommunications Markets, ACCC Information Paper.

⁶¹ Also, pure bundling does not raise the same methodological challenges as mixed bundling. Where two products can be purchased only as a bundle, the process of delineating the relevant market is usually more straightforward. [Not always]

⁶² ICN (2009), Report on Tying and Bundling Discounting. Available at: <http://www.internationalcompetitionnetwork.org/uploads/library/doc356.pdf>.

is sold. However, circuit courts have divergent opinions on the legality of mixed bundling. On one hand, some courts accept that mixed bundling can be anti-competitive only if “the discount given by the defendant on the entire bundle of products to the competitive product or products, the defendant sold the competitive product or products below its average variable cost of producing them”.⁶³ On the other hand, other courts consider that a discounted price of a bundle may be anti-competitive even when the firm would not be liable under the modified predatory pricing rule laid down in *Cascade Health Solutions*. For example, in *Le Page*, the Third Circuit essentially considered bundling as a form of tying, and consequently did not examine whether the price of the product fell below a certain measure of its cost.⁶⁴

Of course, to analyse the effects of bundling, it is necessary to define first the boundaries of the relevant market. The delineation of the relevant market at the level of bundles can be justified if there are strong complementarities in demand and certain characteristics of supply are present. For example, in the *NYNEX/Bell Atlantic* case, the FCC held that “to the extent that consumer demand for bundled service packages forces carriers to offer such bundles, the bundling of local exchange and exchange access services with long distance services may well become a relevant product market”. Also the European Commission in its *Explanatory Note to the Recommendation on relevant markets* recognised that “the bundle may become the relevant product market”.⁶⁵ If so, market definition may need to consider whether (i) two different bundles (A and B) are in the same market, or (ii) whether bundle A is in the same market as its individual components A_1 and A_2 .

To determine whether two or products or services are separate or whether they form an integrated bundle, competition authorities typically analyse demand substitution. Often, the authorities consider the importance of demand for each product. For example, the European Commission explains that the individual services in the bundle “[...] may be considered to be part of the same retail market if there is no more independent demand for individual parts of the bundle”.⁶⁶ To verify whether there is sufficient demand for the individual elements of the bundle, competition authorities use the SSNIP test. Starting with the bundled product, they examine whether consumers would unpick a bundle and buy its individual components if the price of the bundle increased by 5 or 10 per cent.

⁶³ *Cascade Health Solutions*, 515 F.3d

⁶⁴ *LePage’s Inc. v. 3M*, 324 F.3d 141, 155 (3d Cir. 2003).

⁶⁵ Explanatory Note (2007), Section 3.2.

⁶⁶ See *supra* note 288.

2.8.2 *Impact of bundled offers on retail markets*

With respect to triple- and quadruple-play services, regulatory and competition authorities generally consider the relevant market at the level of individual services. However, as the take up of bundles increase, the question of how bundling at the retail level might affect market definition at both the retail and wholesale levels becomes of essential importance.

One of the first questions is whether the conventional market definition methodology, based on the SSNIP test, can adequately respond to challenges raised by bundling. In the EU, for example, the Explanatory Note to the Commission's Recommendation on relevant markets explicitly recognises the impact bundling may have on market definition:

"[...] consumers may have a preference for a bundle if there are significant transactional costs. In this case, consumers may prefer to purchase the services as a bundle and from a single supplier. Hence the bundle may become the relevant product market. [...] If, in the presence of a small but significant non-transitory increase in price there is evidence that a sufficient number of customers would 'unpick' the bundle and obtain the service elements of the bundle separately, then it can be concluded that the service elements constitute the relevant markets in their own right and not the bundle".⁶⁷

Box 7.
(the Netherlands, 2005)

In its 2005 decision concerning mobile access and call origination, the Dutch regulatory authority, OPTA, discussed the issue of whether mobile (data) services such as mobile internet, SMS, WAP, MMS, etc all belong to the same relevant market as mobile access and call origination. While these services cannot be seen as substitutes for the access and call origination services, OPTA has nonetheless found that they all fell within the same relevant market. This conclusion was justified on the ground that "these services are virtually always in the bundle of services of the various service providers and competition between the service providers exists between the bundles, not the individually identifiable services".

⁶⁷ Explanatory Note (2007), para. 3.2.

The application of the SSNIP test to bundles is certainly a very complex exercise. It requires “determining substitutability between products of the same type and also the substitutability between products of different types”. In the case of a triple-play bundle, authorities would therefore have to determine “not only the substitutability between different triple-play bundles, but also the substitutability between triple-play and double-play bundles, and the substitutability between triple-play and individual products”.⁶⁸

Despite the overall tendency to define the relevant markets at the level of individual services, some authorities have sought to determine whether bundles of telecommunications services constitute separate relevant product market. For example, in its 2010 review of the wholesale broadband access market, Ofcom (UK) considered triple- and quadruple-play offers, and suggested that “services that make up a bundled package should not be treated as a single market for the purpose of this market review” and that “broadband access services purchased in a bundle are part of the same retail market as broadband access services purchased as a stand-alone package”.⁶⁹ Ofcom reached such a conclusion even though the consumer survey indicated that 70 per cent of the respondents bought their fixed broadband services as part of the package. However, the survey also revealed that consumers “are likely to respond to price differentials by switching between bundled and unbundled options” because their choice is driven by “seeking greater value through bundling of services, rather than having an intrinsic preference for bundled packages”.⁷⁰

In addition to examining the impact of bundles on market definition in individual cases, some authorities commission or carry out consumer surveys to determine whether bundled offers constitute relevant product markets. In surveys conducted for the Dutch sectoral regulator and the Hungarian Competition Authority, consumers were asked if they would switch from bundles to bundles’ individual components if the price of the bundle increased by 10 per cent. The results of the survey led the authorities to opposite conclusions on whether triple-play bundles are a relevant product market. The Dutch survey concluded that despite an increasing popularity of bundled offers, such offers did not constitute a separate market. This is because a large number

⁶⁸ Pereira, P., Ribeiro T., and J. Vareda (2013), ‘Delineating markets for bundles with consumer level data: The case of triple-play’, *International Journal of Industrial Organisation*.

⁶⁹ Ofcom (2010).

⁷⁰ Ofcom (2010).

of consumers was prepared to switch from a bundle to bundle's individual components in case the price of the latter was reduced by 10 per cent. In contrast, the Hungarian survey revealed that bundles, and in particular triple-play bundles, are or are close to be a separate market.⁷¹

Whether it is appropriate to define market for bundled offers depends on (i) the degree of substitutability between the bundle and the individual products as well as (ii) the starting point of the market definition assessment. As the BEREC Report notes, the conclusion that the authority will reach may be different depending on whether the starting candidate product is "the standalone components of the bundle, or the bundle itself".⁷² The possible outcomes, according to BEREC, are the following:

- There are markets for each of the individual services and a separate market for the bundle;
- There are markets for each of the individual services and bundles are part of these individual markets;
- There is a single market for bundles, and no separate market for the individual services;
- There is a single market consisting of the bundle and its individual services;
- There is asymmetric substitution between bundles and individual products.

⁷¹ Pápai, Z., Lőrincz, L. and B. Édes (2011), Triple play as a separate market? Empirical findings and consequences to broadband market definition, 22nd European Regional Conference of the International Telecommunications Society (ITS2011), Budapest, 18 - 21 September, 2011: Innovative ICT Applications – Emerging Regulatory, Economic and Policy Issues.

⁷² BEREC (2010), para. 86.

Box 8.**Delineating markets for bundles with consumer level data: The case of triple-play
A study by Pedro Pereira, Tiago Ribeiro and João Vareda⁷³**

Pereira et al., for example, argue that in spite of the difficulties raised by bundling, relevant markets can still be defined using the conventional tools of competition policy. In their article, the authors analyse data set from Portuguese telecommunications firms from the last quarter of 2009, which account for 99% of triple-play customers. The data set consisted of information about (i) the contract, (ii) the product, (iii) the client, and (iv) monthly expenditures. It also included billing information, with full detail of invoices, the total number of clients for each product as well as the geographical availability of each product. Finally, this set of data was complemented with information from the sectoral regulator – ICP-ANACOM.

The authors performed three versions of the SSNIP test: (i) the unilateral price increase (based on the EU Commission Notice), (ii) the equilibrium price increase (based on the 1984 US Merger Guidelines), and (iii) the upward pricing pressure (based on the test of Farrell and Shapiro). They found that in all the three cases the SSNIP test indicated that triple-play products constitute a relevant product market in Portugal.

Given a potentially large number of products, Pereira *et al.* chose to overcome the problem of carefully defining the consumers' choice alternative by applying the discrete choice framework. While they estimated four discrete choice models,⁷⁴ they found that a Cross-Nested Logit demand model provides the most adequate and parsimonious description of the substitution patterns between the large number of available products. Notably, it “captures different substitution patterns between different types of bundles and between the products of different firms, while maintaining a close probability formula. In particular, it allows modelling the clustering of products along several dimensions, which may form non-mutually exclusive groups.⁷⁵ This flexibility is important [...], since the reliability of our simulation results derives from the ability to estimate demand as realistically as possible, within the limitations of the data”.⁷⁶

⁷³ Pereira, P., Ribeiro T., and J. Vareda (2013).

⁷⁴ Namely, a Multinomial Logit, a Nested Logit, a Cross-Nested Logit and a Mixed Logit model.

⁷⁵ The authors find that some of the products are complementary. For example, this is the case of the double-play offer, consisting of fixed voice and fixed broadband, and the single-play television subscription service.

⁷⁶ Pereira et al. (2013).

The analysis moreover revealed that the demand for triple-play products is elastic: own-price elasticities range between 3.2. and 1.3. for the largest firms, while a market-own price is elasticity is 1.4. Also, competitive pressure between triple-play and other products is asymmetric since the demand for triple-play is less responsive to the prices of the other products covered by the study than the demand for those products is responsive to the price of triple-play.

Increasing popularity of bundled offers should certainly be reflected in the analysis and decisions of competition and regulatory authorities, even if in the end they find that there is no separate market for such offers. To date, only a limited number of telecommunications decisions has provided a comprehensive market definition analysis concerning bundled offers. While various authorities explicitly acknowledge the impact such offers may have on market definition, they either find that in the specific circumstances of the case a definitive conclusion on market definition is unnecessary or the conclusions reached by the authorities are ambiguous.

For example, the European Commission had an opportunity to consider whether it would have been appropriate to define separate market for multi-play service in various merger decisions. In *Liberty Global Europe/Unitymedia*, the parties offered triple-play services (TV, Internet and voice telephony) in countries covered by their commercial activities.⁷⁷ The market investigation supported the view there was a separate relevant market for triple-play services.⁷⁸ Unfortunately the question was ultimately left open as the transaction in question did not raise competition concerns regardless of the exact market definition.⁷⁹

⁷⁷ Case COMP/M.5734, *Liberty Global Europe/Unitymedia* (2010). See also Case COMP/M.4338, *Cinven-Warburg Pincus/Casema Multikabel* (2006).

⁷⁸ Eight out of 10 companies responded that there is a separate relevant market for triple-play services.

⁷⁹ The same conclusions has been reached recently in the *Vodafone/Kabel Deutschland* merger. European Commission, Case COMP/M.6990, *Vodafone/Kabel Deutschland* (2013), para. 261.

Box 9.
Telsur vs VTR: predatory pricing in triple-play (Chile, 2008).⁸⁰

TelSur filed a complaint with the FNE (*Fiscalía Nacional Económica*) accusing VTR of offering Triple Pack at predatory prices. While the abuse of a dominant position is normally assessed in the context of a specific relevant market, it is not clear what position the FNE took on that issue.

First, the FNE acknowledged that triple-play has emerged as an alternative offer to the separate provision of individual services. It also noted that technological convergence in telecommunications “implies convergence of markets”, and that the key aspect of this convergence concerns the provision of services, given that services define the relevant market. The FNE then referred to the judgment of the *Tribunal de Defensa de la Libre Competencia* (TDLC), concerning pre-paid mobile offers, in which the Tribunal found that such offers, which imply the integration of three sub-products (a mobile phone, the SIM card and the initial credit of minutes), constitute a single product. Finally, the FNE also pointed out that some of the foreign competition authorities have considered bundles to constitute a market in its own.

While the FNE has clearly acknowledged that bundles may constitute a separate market, it also noted that “regardless, it will always be necessary to consider markets for the products that make up the bundled offer, (in this case local telephony, pay TV and Internet broadband access), since bundled offers can affect these markets or market power in these markets can be exerted through the provision of bundled offers. Accordingly, the FNE briefly discussed the conditions of competition in the provision of Pay TV, broadband, fixed telephony and bundled offers. However, when analysing the geographical dimension of the market, the FNE provided information concerning market share only with respect to the first three products, without distinguishing whether these products were provided independently or as part of a bundled offer.

Overall, it is clear that the FNE is aware of the evolution in the market and the fact that bundled offers can potentially be considered as a relevant market. However, its analysis is superficial and it seems that the FNE preferred to be evasive rather than definite in reaching conclusion on the market definition issue.

⁸⁰ Fiscalia Nacional Economica (2008), *Telsur vs. VTR*, Rol C no. 138-07.

Because bundled offers in the communications markets are ubiquitous and it is expected that demand for them will continue to grow, it is important that competition and regulatory authorities develop a consistent and economically sound analytical framework to examine the impact of such offers on the market. Such analysis should, in particular, be sensitive to country specific issues as conditions of competition with respect to bundles vary significantly between the countries.

An example of a comprehensive analysis of whether bundled offers can constitute a relevant market can be found in the decision of the Portuguese competition authority concerning the merger of the two major telecommunications operators, with complementary operations in mobile and fixed communications services. The case is interesting for a number of reasons. First, the authority found that there was a separate market for triple-play offers. Second, in reaching this conclusion the authority examined also whether double- and quadruple-play offers belonged to the same market. Third, the analysis shows that while international data may be useful in terms of benchmarking, it should be considered with caution as national circumstances may vary substantially.

Box 10.***Kento*Unitel*Sonaecom/ZON*Optimus:*****Non Opposition Decision accompanied by the imposition of conditions and Obligations by the Competition Authority (Portugal, 2013)⁸¹**

ZON and Optimus filed the merger application on 1st February 2013, and on 26th August 2013 the competition authority issued a clearance decision which was accompanied by the imposition of conditions and obligations. As a result of the merger the number of operators providing triple-play services on the national level will decrease from five to four. The assessment of the transaction required the analysis of more than 40 relevant product markets, with a particular attention paid to double-, triple-, and quadruple-play bundled offers.

The notifying parties considered that it is necessary to define a separate market for triple-play offers, in parallel with the markets for the provision of the bundle's individual components. In Portugal the vast majority of end-users of telecommunications services opt for bundled offers. In late 2012, 74.6 % of end-users purchased access to fixed broadband as part of a triple play package. In terms of the subscription television and fixed telephony service, this value corresponded to 57.2 % and 46.3 %, respectively.

The competition authority noted that according to the study it internally developed⁸² it would be profitable for a hypothetical monopolist that controls all triple-play offers in the market to increase price by both 5 % and 10%. Accordingly, the study concluded that the triple-play offers are in fact an autonomous relevant product market. As regards supply-side substitutability, the authority noted that all operators with significant positions in the markets for communications products offer triple-play packages.

The notifying parties argued that a separate market for multiple-play offers could also be defined. In their view, such market should include all types of bundled offers, i.e. triple-play, double-play and quadruple-play offers. However, the authority pointed out that according to the study, the relevant market should not be defined as markets for multiple-play offers if the analysis starts from the candidate market consisting of the triple-play offers. A market for multiple-play offers could be defined only if the analysis started from the double-play or quadruple-play offers. This, the authority explained, implies the existence of an asymmetric substitution between the triple-play offers and other packages, which in turn, would justify different conclusions depending on the starting point for the SSNIP test. The authority also explained that the application of the SSNIP test should be determined by the structure that exists in the triple-play market given that approximately 75% of users who subscribe to multiple-play choose triple-play offers.

⁸¹ Available at: http://www.concorrenca.pt/FILES_TMP/2013_05_final_net.pdf

⁸² See the summary of the study in Box 8.

The independent assessment of markets for double-play and quadruple-play offers can, however, bring added value to the analysis of competitive impact of the transaction since the structure of these potential markets may be substantially different from the structure of the market for triple-play offers, and consequently also from the hypothetical market for multiple-play offers. With respect to the double-play offers, these can be subdivided into offers consisting of (i) fixed telephony service and broadband access; (ii) fixed telephony service and television subscription; and (iii) access to fixed broadband and subscription television. It is expected that normally there is no significant direct substitutability between each of these double-play offers. This is because it is unlikely that a consumer, who after a small rise in the price of double-play offer consisting of fixed telephony service and access to fixed broadband package, would switch to a double-play package consisting of fixed telephony service and a subscription television. For that reason the authority considered that it was unjustified to define the relevant market at the aggregated level of various types of double-play offers.

With respect to quadruple-play offers, the authority noted that the take up of such offers was still residual in late 2011, and that various firm launched such offers only in 2013. In its reply to the request from the competition authority for information concerning the future evolution of quadruple-play offers, the notifying parties explained that conclusions at that stage would be premature. The uncertainty concerning the evolution of the market is predominantly linked to the specific characteristics of the domestic mobile market, which may have a negative impact on the attractiveness of quadruple-play offers.⁸³

While the authority said that it could agree with the parties' comments concerning potential difficulties in increasing the take-up of quadruple-play offers, it nonetheless considered that such offers may have some relevance in the market. However, it decided that for the purpose of the decision, it could leave the market definition open with respect to quadruple-play offers.

⁸³

In particular, the parties stressed that prepaid customers accounted in the fourth quarter of 2012 for 75 % of all mobile cards, and that this number included both private and corporate clients. Such customers typically value lack of commitment to spending, a discretion over the amount to spend and the time when they intend to make use of their services. All these characteristics are incompatible with main features of the quadruple-play offers, which require the payment of a monthly predetermined fee, contractually binding period of customer retention, etc. The parties also referred to the network effect and the fact that as a result of differential pricing strategies for on-net and off-net traffic, a high proportion of traffic (about 86.8%) is on-net traffic.

In terms of the geographical dimension, the authority decided that despite the existence of a uniform pricing strategy across the country, price discrimination could occur, in particular, in areas where operators are facing increasing competition, because of the existence of a larger number of alternatives available to consumers located in these areas. To the extent that the merger is likely to affect differently the conditions of competition in different geographic areas, taking into account in particular the location of the fixed infrastructure networks of the two companies involved, the competition authority considered that competitive impact of the merger would be better assessed if the geographical scope was restricted. Accordingly, the competition authority decided to follow a sub-segmentation adopted by the sectoral regulator that identified areas 'C' and 'NC'. Areas 'C' covered the main areas of Portugal Telecom's activity where there is (i) at least one alternative operator or (ii) at least one cable operator, and where the percentage of households cabled by the main operator in the exchange area is greater than 60 %. 'NC' Areas correspond to the remaining areas.

In order to address and remove competition concerns raised by the merger in those areas where Optimus has access to a fibre optic network, the parties submitted to the competition authority the commitments:

- to extend the duration of the network-sharing agreement between Optimus and Vodafone Portugal;
- to remove the caps on possible contractual liability resulting from the unjustified termination by Optimus of the network-sharing agreement;
- to negotiate wholesale access to Optimus's fibre-optic network with interested third parties;
- to negotiate a contract with Vodafone Portugal for the option to purchase Optimus's fibre-optic network at book value, minus amortisations; and
- to suppress, for a six-month period, any fidelity clauses applying to Optimus's triple-play customers based on fibre access”.

2.8.3 *Evidence relevant for the definition of a given market at the level of bundled offers*

Determination of whether products are components of a single product or are in fact separate products in two different markets is by no means an easy task. In *Hilti*, Advocate General Jacobs stressed that it is, indeed, a “complex operation involving both findings of fact and evaluation of those facts in the light of economic principles and legal criteria”.⁸⁴

The BEREC Report on impact of bundled offers in retail and wholesale market definition lists down a range of evidence that authorities could consider when assessing whether a given market should be defined at the level of bundled offers rather than their individual components.⁸⁵ In particular, BEREC refers to:

- Economies of scope (para. 83);
- Transaction cost savings (para. 84);
- Consumers switching patterns (para. 85);
- Switching costs (para. 85);
- The take-up of bundles in comparison to individual product (para. 85).

Many of these elements have, for example, been taken into account by the Irish regulatory authority, ComReg in the analysis of retail access to the public telephone network at a fixed location (for residential and non-residential customers).

⁸⁴ See Advocate General Jacobs in Case C-53/92P, *Hilti*, para. 8.

⁸⁵ BEREC (2010), Report on impact of bundled offers in retail and wholesale market definition, BoR (10) 64.

Box 11.**Market Review: Retail Access to the Public Telephone Network at Fixed Location for Residential and Non Residential Customers (Ireland, 2012)⁸⁶**

In order to determine the scope of the fixed voice access (FVA) market, ComReg began its analysis by considering whether the relevant market is in fact broader than the traditional narrowband FVA product, and whether it consists of bundled products, for example, access and call, or additional products such as broadband and/or TV. While the authority found that the standalone narrowband FVA was the appropriate starting point for the market review, it nonetheless pointed out that “the prevalence of bundling can indicate a high degree of complementarity between products, and in some cases a broader starting point might be more justified”.⁸⁷

Economies of scope: In order to define the scope of the relevant market, ComReg analysed economies of scale and scope materialising in the supply of FVA and fixed calls as well as FVA, fixed calls on broadband access. The provision of both combinations involves common inputs and infrastructure, which explains why the additional cost of providing voice calls and broadband access can in some cases be relatively low. Comreg, in fact, found that economies of scope typically associated with the supply of FVA and fixed voice calls are more relevant for certain types of call (i.e. on-net calls) than for others (off-net calls of high value, such as, calls to mobile phones or international numbers).

End-users’ behaviour. When considering whether naked FVA, or FVA with calls and/or broadband access should constitute a relevant starting point for competition assessment, ComReg looked at consumption behaviour of end-users. With respect to FVA and calls it found that approximately 99% of consumers choose to purchase these two products together. While the evidence suggested strong complementarity between purchasing FVA and fixed calls, ComReg argued that evidence pointed both ways about whether there is a combined market or separate markets for each component. In its view, such a conclusion could be justified by the fact that on a forward-looking basis FVA and fixed calls may face different competitive conditions. As for the bundle consisting of FVA and other communications services, such as broadband, the authority cited the findings of the 2012 Market Research. According to the study, almost 40% of households and 54% of businesses with a FVA subscription purchase FVA independently.

In light of the collected evidence, ComReg concluded that FVA sold on a standalone basis, and not a bundle including other services (such as calls and broadband), was the appropriate starting point for carrying out the market definition assessment.

⁸⁶ ComReg (2012), Consultation and Draft Decision 12/117. Available at: <http://www.comreg.ie/fileupload/publications/ComReg12117.pdf>

⁸⁷ Ibid, para. 4.17.

When a large portion of consumers purchases products in question in bundles, it may be appropriate to define a market as a bundle. However, consumers' behaviour does not in itself provide sufficient evidence on the suitability of market definition. Because there are increased concerns about transparency and potentially anti-competitive impact of bundling and because assessment of bundles requires access to extensive, reliable and high quality information, it is necessary that competent authorities have adequate information gathering powers. For example, in its 2003 Information Paper on Bundling in Telecommunications Markets, the ACCC described different types of information that are required to consider whether particular bundling offer is anti-competitive. The ACCC was in particular concerned that ordinarily gathered information (on costs, revenues and usage) may have been insufficient to monitor bundling conduct in telecommunications market. Therefore, the Commission requested Australian incumbent operator Telstra to provide information concerning:

- The total number of customers obtaining each type of bundled offering;
- The total number of new customers obtaining each bundled offering; and
- Whether a discount is offered, and if so, the total accrued discount for each bundled offering.

2.8.4 Impact of bundled offers on wholesale markets

If a regulatory authority concludes that a bundle, and not its individual elements, constitutes a relevant market, one has to analyse the impact such conclusion may have on the definition of the relevant upstream market, and in particular whether it may be appropriate to define a wholesale market for bundles. Such analysis is necessary for two reasons. First, wholesale markets are delineated with reference to the associated retail markets⁸⁸ because demand for

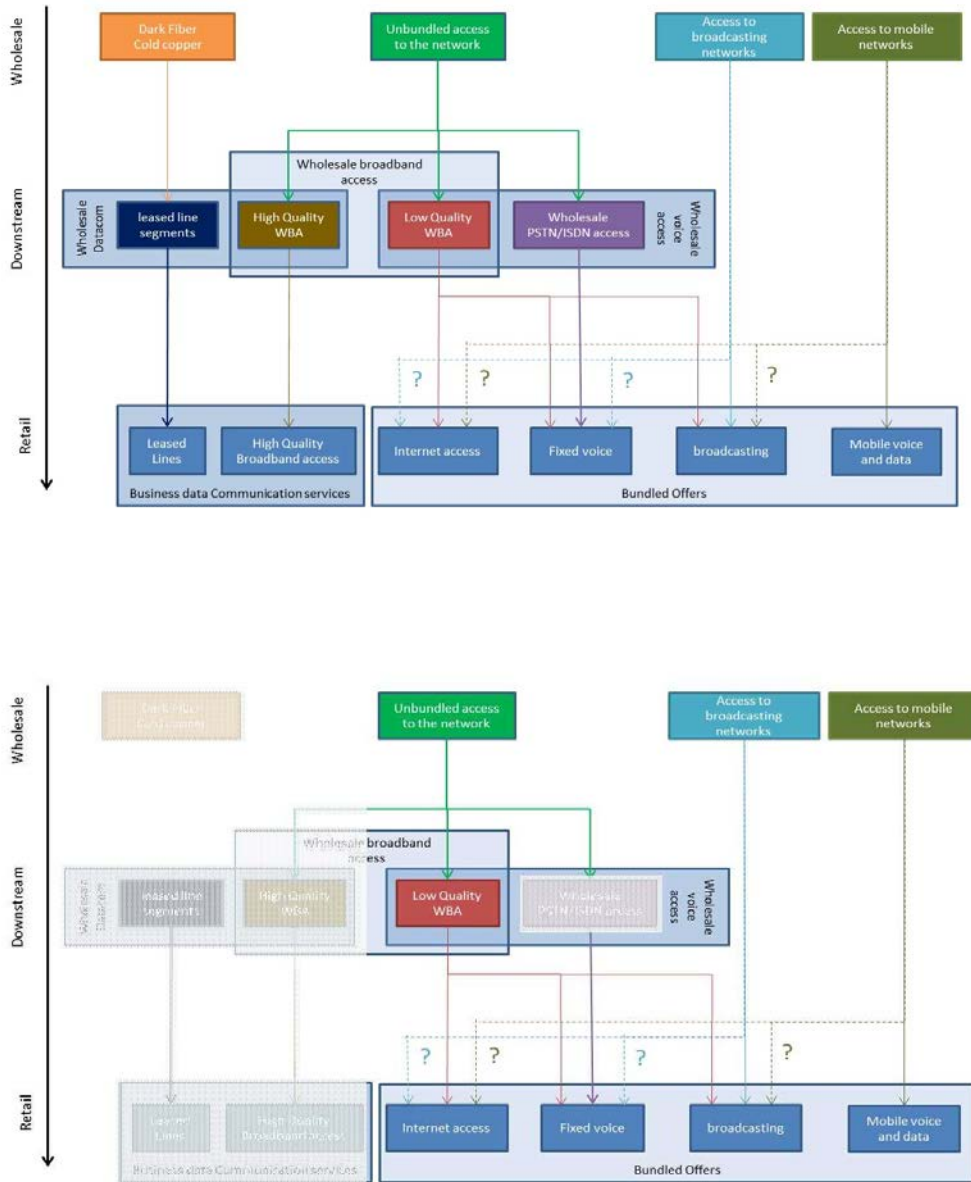
⁸⁸ Recommendation on relevant product and service markets Recommendation [2007], para. 4, and Recommendation [2003], para. 7: "The starting point for the definition and identification of markets is a characterization of retail markets over a given time horizon, taking into account demand-side and supply-side substitutability. Having characterized and defined retail markets which are markets involving the supply and demand of end users, it is then appropriate to identify relevant wholesale market [...]".

the upstream product or service is a derived demand⁸⁹ Second, in order to secure a level playing field in telecommunications markets, it is essential that enough players have the ability to provide bundled offers to end-users. If alternative operators or service providers cannot access a relevant wholesale input, the owner of that input will be in a position to defend its position in the market where it has SMP, and also perhaps to leverage market power into the adjacent markets of the bundle's other components.⁹⁰ When considering whether a wholesale market should also be defined as a bundle, competition and regulatory authorities may adopt the same analysis that is used during the delineation of retail markets.

Figures below depicts (i) and overview of retail and wholesale markets, and (ii) the relationship between retail bundles and wholesale markets.

⁸⁹ Take for instance a retail broadband market with strong inter-modal competition coming from cable. Certain parts of incumbent's copper infrastructure may still constitute an essential or important input even where cable operators supply or can supply significant part of the retail market. Demand for the incumbent's wholesale products, however, depends on the structure of the retail market, and therefore incumbent's ability to set prices independently of market conditions may be indirectly constrained by supply-side substitution in the retail market. On the relevance of indirect constraints see point 2.3.3 below.

⁹⁰ [Future electronic communications markets subject to ex-ante regulation, Final Report – 2013. (p. 64)].



Source: Ecorys (2013), Future electronic communications markets subject to ex-ante regulation – Final Report (prepared for European Commission, DG Connect).

It may be worth pointing out that it may be possible to define a wholesale market as a bundle even if the corresponding retail market is defined differently. Likewise, the mere existence of a bundled retail markets does not automatically imply that a wholesale market should be defined at the level of a bundle. For example, during the review of the wholesale broadband access market Ofcom considered that the presence of retail bundles should not affect the definition of the wholesale market.⁹¹ First, retail bundles would lead to complementarities at the wholesale level rather than substitution. Second, the provision of retail bundles, at least for now, would require the retailer to obtain relevant wholesale inputs from different suppliers.

2.8.5 *Delineation of the relevant market and its impact on remedies*

When bundles become the focal point of competition analysis, regulatory and competition authorities should bear in mind that effective competition on the retail level may depend on access of alternative operators to all relevant wholesale inputs. For example, consider a firm that provides a triple-play offer at the retail level that consists of fixed telephony service, fixed broadband and a television subscription. To supply such a bundle, a firm uses at least two different wholesale inputs: for example access to the local loop and TV content. If a significant portion of telecommunications users purchases triple-play offers, successful entry may depend on the ability of new entrants to offer triple-play services. Then access to all relevant wholesale inputs becomes necessary to ensure effective competition in the retail market.

Ability to replicate the SMP firm's offers by new entrants is considered to be one of the main regulatory issues concerning bundling. Replicability has to be ensured in a commercial/economic and in a technical sense. The first one refers to pricing, and in particular to margin squeeze practices. The second, instead, refers to the availability of a relevant wholesale input, including access to content in case of bundles that include a TV offering.

Consequently, a question has emerged whether network operators should be obliged to offer wholesale access to their Internet Protocol Television (IPTV) platform. While regulating access to IPTV would cover some traditional regulatory areas, such as ensuring access to network, it could also require regulation of inputs that may fall outside of the scope of telecommunications

⁹¹ Ofcom (2010), Review of the wholesale broadband access markets: Statement on market definition, market power determinations and remedies. Available at: <http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf>.

regulatory authorities.⁹² In any case, “a minimum regulatory intervention would require incumbents to offer multicast functionality in its wholesale broadband access offer to allow competitors to offer multiple play services”.⁹³

Box 12.
Case DK/2010/1099 (Denmark)⁹⁴

In December 2008 the Danish NRA, NITA, notified the European Commission of its decision concerning regulation of the market for wholesale broadband access. According to NITA, the incumbent operator (TDC) should be “mandated to give access to additional functionalities (such as multicasting)⁹⁵ in the scope of bit-stream remedies” as such extended remedy was in its view necessary to allow alternative operators to replicate the bundled retail offer of the incumbent.

Commenting on the draft decision, the European Commission pointed that while the relevant market in question was the upstream market for access to data services, in particular to Internet and not to broadcasting services as such, “it is possible that the market for wholesale broadband access develops in such a way that a TV offerings becomes indispensable to effectively compete at retail level, in which case such a remedy may be justified”.

⁹² This in particular is the case with TV content, which is not regulated by many telecommunications regulatory authorities. On the basis of responses provided by the EU regulatory authorities, ERG has, in fact, identified TV content as one of the most important issues raising doubts with respect to the replicability of bundles. See ERG (2009), Replicability of bundles from the perspective of the availability of wholesale inputs and access to content, ERG (09) 49rev1.

⁹³ Fredebeul-Krein, M. and M. Steingröver (2014), ‘Wholesale broadband access to IPTV in an NGA environment: How to deal with it from a regulatory perspective?’, *Telecommunications Policy*, vol. 38, no. 3, pp. 264-277.

⁹⁴ Case DK/2008/0862: Wholesale broadband access in Denmark, Comments pursuant to Article 7(3) of Directive 2002/21/EC (2009).

⁹⁵ Multicasting and unicasting are two technologies that allow for the provision of IPTV. Multicasting, however, requires less bandwidth than unicasting since multicasting requires the broadcasting server to output one video stream per broadcast channel, whereas unicasting requires one stream per viewer.

CHAPTER 3: OVERVIEW OF THE COLOMBIAN TELECOMMUNICATIONS REGULATION WITH RESPECT TO MARKET DEFINITION

The current Colombian regulatory framework is quite recent. The telecommunications law currently in force was passed in 2009, and some important modifications were introduced in 2012.

It is important not to identify too many markets that typically have competition problems, and accordingly may be susceptible to *ex ante* regulation. This is because *ex ante* regulation should be withdrawn when markets have become or tend to become competitive. Regulation is a costly, resource-intensive and most of the time highly interventionist method of controlling markets. As soon as assumptions on which it rests are no longer valid, for example because consumer preferences have changed or because a new technology has managed to bypass an existing bottleneck, regulation should be withdrawn or relaxed. While competition and regulation both pursue pro-competitive outcomes, in the end they are different tools. Whereas competition law seeks to create or maintain competition, a regulatory system that imposes through administrative mandate a set of prices at best endeavours to mimic the results of competition. This is so because price regulation, no matter how well intentioned, well designed and carefully implemented can only mimic the results of competition by forcing regulated firms to charge competitive prices. As such, it cannot produce the same benefits for consumers as undistorted and effective competition.

To provide a methodological framework for defining the relevant markets, Colombia – following recommendations of international experts - decided to follow the regulatory model implemented by the European Commission. Under the EU framework, a given market is found to be susceptible to *ex ante* regulation when it cumulatively satisfies these three criteria: (i) there are high and non-transitory barriers to entry; (ii) there is a lack of dynamic towards effective competition; and (iii) general competition law is insufficient.⁹⁶ In these criteria it

⁹⁶ Recital 27 of the Framework Directive 2002/21/EC, Recital 13 of the Access Directive 2002/19/EC.

is the market structure and the presence of particular market characteristics, rather than a particular behaviour of a firm, that renders some markets susceptible to *ex ante* regulation, and that triggers the imposition of sector-specific remedies.

The **first criterion** is satisfied by the existence of high and non-transitory barriers to entry, which can be structural, legal or regulatory. Structural barriers are mainly associated with the state of technology and specific demand and cost structures, which may effectively impede or foreclose market entry of the latter by creating asymmetric conditions between incumbents and new entrants.⁹⁷ Legal or regulatory barriers, on the other hand, result from legislative and/or administrative measures.

The **second criterion** seeks to evaluate whether the analysed market possesses such characteristics and is subject to dynamic trends that would drive the market towards effective competition within the relevant time horizon.⁹⁸ This is likely the case when an existing bottleneck technology ceases to exhibit natural monopoly features due to the emergence and adoption of new technologies.

While the first two criteria are concerned with the structural aspects of market failure, the **third criterion** seeks to establish whether general competition law can provide an effective remedy to these structural barriers. If it cannot, then a given market warrants *ex ante* regulation. The Recommendations do not provide any exhaustive list of circumstances, which would render competition law insufficient.⁹⁹ Such a situation may, for instance, arise where compliance costs of

⁹⁷ Stumpf, U. (2006), 'Markets Susceptible to Ex Ante Regulation: Methodology and Commission Recommendation', *Communications & Strategies*, vol. 64, no. 4, pp. 41-60.

⁹⁸ Take for instance market for the wholesale broadband access. Within the next few years it will likely continue to satisfy the three criteria test that warrant *ex ante* intervention. Yet, the experience of a limited number of Member States under Article 7 notification procedure indicates that this market may tend towards effective competition behind barriers to entry. Such situation takes place mostly in those States, which have witnessed successful unbundling and high broadband penetration rates, and where incumbent's competitors started to provide wholesale broadband access in large part of the country.

⁹⁹ ERG specifies that in assessing whether competition law is sufficient to address a given market failure, NRAs may wish to consider: (1) the degree of generalization of anticompetitive behaviour; (2) the degree of difficulty to address the behaviour; (3) the likelihood of irreparable damage in related markets; and (4) the need to ensure the development of effective competition in

competition-law-based intervention are extensive or where frequent and/or timely intervention is essential. Judge Green's consent decree that led to the administration of AT&T's divestiture by a district judge for the lengthy period of twelve years is a case in point.¹⁰⁰

Once a relevant market is defined, and a firm with SMP is identified, regulatory authority has to impose a remedy that is most suitable to address the previously identified competition problem. Since regulatory remedies imposed by the RAs must be proportionate to the objectives pursued, price-based remedies can be imposed only if non-price based remedies are unlikely to resolve the problem. Furthermore, cost controls, which are considered as the most intrusive form of price regulation, should be imposed on the wholesale market only when it is unlikely that the market power would diminish within a reasonable period of time.

Accordingly, a situation where downstream prices are regulated despite lack of any regulation at the wholesale level, in telecommunications does not happen often. In the EU, in accordance with Article 17 of the Universal Service Directive,¹⁰¹ appropriate regulatory obligation on a retail market can be imposed as a measure of last resort¹⁰² on undertakings with significant market power only where (i) a given retail market is not deemed to be effectively competitive, and (ii) according to the NRA, obligations imposed on the upstream market would be insufficient to ensure the achievement of the objectives set out in Article 8 of the Framework Directive.¹⁰³ A decision to regulate a retail market suggests therefore

the long run. See ERG (2008), Report on Guidance on the application of the three criteria test, ERG (08) 21.

¹⁰⁰ Weiser, P. (2008/2009), 'Reexamining the Legacy of Dual Regulation: Reforming Dual Merger Review by the DoJ and the FCC', *Federal Communications Law Journal*, vol. 61, no. 1, pp. 167-198.

¹⁰¹ Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services (Universal Service Directive), O.J. [2002] L 108/51.

¹⁰² Pursuant to Recital 26 of the Universal Service Directive: "National regulatory authorities should have powers to impose, as a last resort and after due consideration, retail regulation on an undertaking with significant market power".

¹⁰³ Explanatory Note (2007), Section 2.5: "A downstream market should only be subject to direct regulation if competition on that market still exhibits SMP in the presence of wholesale regulation on the related upstream market(s)". Yet, such option was discussed by the Commission during the preparation of the Roaming Regulation, see EUROPEAN COMMISSION (2006), Impact Assessment of policy

that neither retail nor upstream markets are effectively competitive. *A contrario*, decision not to regulate an upstream market entails that such market is already competitive, typically because of the availability of inputs from alternative providers. This in turn further implies that the downstream market should also be competitive, in which case retail regulation becomes inapplicable.¹⁰⁴ In the alternative, a wholesale market that is not competitive may remain unregulated if it does not fulfil the three-criteria test, which sets the threshold for putting a regulatory regime in place high. In the latter case, competition law intervention will have to suffice to restore the proper functioning of market forces.

Reflecting the spirit of the EU Regulatory Framework, the Colombian Resolution of 2009 No. 2058 (issued by the CRC) lays down the same three-criteria test as the EU in order to identify markets that are susceptible to *ex ante* regulation. It also declares that wholesale markets shall be analysed when market failures are identified in the retail market. However, in the Methodological Guidelines for the definition of relevant markets and dominant position in convergent telecommunications markets in Colombia, the CRC explains that: “if wholesale markets have been hypothetically regulated or no dominant position has been identified in these markets, but competition problems persist in the retail market, then the retail market would become a candidate market for *ex ante* regulation. This means that it is not possible to correct the market *ex ante* through wholesale regulation, and therefore it is necessary to resort to direct intervention in the associated retail market”. Given that in telecommunications a competitive wholesale market often implies the existence of competition in a neighbouring retail market, regulation of the retail market in the absence of wholesale regulation shall be preceded by a thorough competition analysis.

Effective *ex ante* regulation requires the adoption of a predictable and adequate regulatory framework. However, regulations and laws are in themselves insufficient to ensure effective competition in the sector. It is important that (i) the regulatory authority is vested with the necessary powers as well as human and financial resources, and that it (ii) correctly carries out market analysis.

options in relation to a Commission proposal for a regulation of the European Parliament and of the Council on roaming on public mobile networks within the Community, SEC(2006)925.

¹⁰⁴

Of course, a wholesale market can be unregulated also because it does not fulfil the three-criteria test.

In light of the European experience, for example, it is interesting to note that despite lack of competition in the fixed broadband market, Colombia has not considered it necessary to define this market as a market subject to *ex ante* regulation. It is widely agreed that the modern economy relies heavily on access to broadband internet. However, in Colombia, while some parts of the telecommunications sector have witnessed remarkable growth, “fixed broadband networks are underdeveloped and penetration and speeds are low”.¹⁰⁵ The level of fixed broadband penetration is actually very low: 8% in December 2012 (it rose to 9.2% in June 2013), in comparison to the OECD average of 26.3% (2012).

Box 13.
Broadband market in Colombia

In its 2013 Review of Telecommunications Policy and Regulation in Colombia, OECD described the situation in the Colombian broadband market:

*“Cable modem services are growing more rapidly than DSL as a result of the introduction of triple-play offers. This growth has resulted in an almost equal share of subscriptions between cable and DSL. The broadband market is essentially an oligopoly shared between Claro (cable modem, 30.55%) and UNE-EPM (DSL and cable modem, 26.62%) and Movistar (DSL, 18.53%). ETB (DSL) serves 12.94% of the market. In its most recent analysis, the CRC takes the view in that these national market shares may pose short-term challenges to competition, but it does not foresee substantial problems in the fixed broadband market. Nonetheless, local fixed markets are extremely concentrated, with EPM holding over 90% of the lines in Medellín, and ETB accounting for over 70% in Bogotá”.*¹⁰⁶

In the EU, out of twenty-eight member states, twenty-two consider their national broadband access markets not effectively competitive, and accordingly subject these markets to *ex ante* regulation, three countries (Austria, Portugal and the UK) impose partial *ex ante* regulation as their respective markets are partially competitive, and only two countries (Malta and Romania) impose no regulation as the analysis points to the existence of effective competition in the market.¹⁰⁷

¹⁰⁵ OECD (forthcoming, 2014).

¹⁰⁶ OECD (forthcoming, 2014).

¹⁰⁷ European Commission (2013), Article 7 – Market Overview, available at: https://ec.europa.eu/digital-agenda/sites/digital-agenda/files/Market_overview_25_february_2013.pdf (accessed on 20th January

In Colombia, resolution CRC 2058 of 2009 includes the retail municipal market for access to broadband internet and the wholesale carrier market in Annex I, which lists relevant telecommunications markets. However, none of these markets is listed in Annex II, which includes the list of relevant markets susceptible to *ex ante* regulation.

The CRT (now known as the CRC) acknowledged in 2008 that in a number of municipalities competition was impaired and that - in a static world - markets in these municipalities should be subjected to *ex ante* regulation. However, the CRT considered that “recent industry dynamics and uncertainty about the speed of expansion of new technologies suggest caution in exposing these developing markets to intrusive regulation that may affect the pace of investment and penetration of the service with considerable social and economic cost”.¹⁰⁸ This remains as the official position of the now CRC on fixed market regulation.

Such approach may at first sight be consistent with the approach adopted in the EU. According to the European Commission, in order to promote innovation, regulatory authorities should not impose inappropriate obligations on newly emerging markets, even if there is a first mover advantage.¹⁰⁹ The 2007 Recommendation defines newly emerging markets as markets comprising “products or services, where, due to their novelty, it is very difficult to predict demand conditions or market entry and supply conditions, and consequently difficult to apply the three criteria”.¹¹⁰ However, as the decision of the European Commission in the *Wanadoo* case concerning an abuse of dominant position reveals, the use of the term ‘emerging market’ requires caution. If, using the European Commission’s wording, “high-speed Internet access services had gone well beyond the stage of simple commercial or technical experimentation” in Colombia, one could argue that the retail market for access to broadband internet should no longer be considered as an emerging market, and thus the risk of

2014). There is almost no data on the regulation of relevant markets in Croatia, which joined the EU on 1st July 2013.

¹⁰⁸ CRT (2008), Propuesta regulatoria para la Definición de mercados Relevantes de Telecomunicaciones en Colombia.

¹⁰⁹ European Commission (2007), 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 communications networks and services.

¹¹⁰ Ibid.

hampering innovation and its further development by imposing *ex ante* obligation should be eliminated.

Another important issue concerns the geographical dimension of market analysis. The ‘CRC Revision of the Relevant Market for Data and Access to Internet’ (2011) simply accepts the municipal dimension as given and accordingly calculates the HHI at the level of municipality based on market shares of ISPs offering the relevant product in the corresponding geographic area. In the telecommunications sector, the geographical dimension of the relevant market is typically determined by two criteria: the coverage of the network and the scope of the application of legal and other regulatory instruments.¹¹¹ While resolution 2058 of 2009 lists the market for access to broadband internet as municipal in scope, regulatory authorities should not shy away from analysing the geographical scope of the market for access to broadband internet during the review process. The list of the relevant markets should provide only a starting point for the analysis. Thus, in the light of potentially anticipated technological developments the analysis of a given market may lead to the delineation of different geographical or product boundaries than those that have been initially proposed.

Given that the fixed broadband network is highly fragmented in Colombia it seems reasonable to analyse markets at a municipal level. However, to ensure effective regulation of local broadband markets a regulatory authority should be in a position to aggregate areas in a similar competitive situation in order to delineate the geographic scope of the market over which it should then conduct SMP analysis. Given the highly-innovative nature of telecommunications markets and the existence of 1120 municipalities in Colombia it would not be feasible for the telecommunications regulator to issue separate regulatory decisions for each individual municipal market. Thus, where the authority is unable to aggregate markets for regulatory purposes, there is a risk that *ex ante* regulation will not be imposed even where it may be needed to promote timely development of telecommunications networks and services.

¹¹¹ European Commission (2007), Explanatory Note Accompanying document to the 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 communications networks and services, SEC(2007) 1483 final.

CHAPTER 4: CONCLUSIONS

The overview of selected cases clearly shows that market boundaries are not fixed. Delineation of relevant markets is an economic process, and as such it should properly reflect conditions of competition in the market. This means that market boundaries should not be determined by the technologies and networks, but rather by their capacities, features and the services they support. While telecommunications markets exhibit certain features that may complicate a straightforward application of the SSNIP test, it is clear that the conventional antitrust methodology applies. However, given the multi-product nature and high technological sophistication of the sector, it is important that regulatory and competition authorities have access to reliable information in order to ensure that competition analysis is robust. Consequently, information gathering powers are essential for the effective *ex ante* and *ex post* intervention in this sector.

It is also important to stress that while this note discussed a number of issues in separate subsections, they may actually arise simultaneously. For example, when examining whether a triple-play offers is part of the same relevant market as the offer's individual components, authorities may also need to take into account asymmetric substitution, chains of substitution as well as potentially heterogeneous competition conditions across the country.

Finally, in light of the increasing popularity of bundled offers it has to be stressed that even if conditions of competition in a given market do not support the existence of a separate relevant market for such offers, competition and regulatory authorities should consider that such markets may eventually emerge. When they do, competition analysis may change considerably.

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