

BEREC report on relevant market definition for business services

February 2011

1. Introduction

1. In December 2009 the European Regulators Group (“ERG”) published a report¹ for consultation on the issue of wholesale access regulation associated with the provision of fixed retail services for high end business services. The consultation did not draw definitive conclusions, but found a number of areas of concern with regard to remedies that required further investigation. In addition, the consultation identified a number of potential issues with regard to the question of market definition for high end business services.
2. In light of this and given that the consultation was focused on remedies, one of the proposals from the consultation was that ERG should conduct further work to identify common principles of market definition which could be applied by NRAs when defining wholesale product markets which include products to support the provision of high end business services. ERG proposed that this further work, in addition to market analysis aspects, would include consideration of the effect of geographic segmentation of the market and of the application of differentiated business focused and mass market focused remedies within the context of an unsegmented market.
3. In March 2010 BEREC published a report on the conclusions from the above consultation. In this report BEREC concluded in light of the responses received to the consultation that it should continue with the areas of work for 2010 identified in the consultation, including further work on the issue of market definition. Thus BEREC included in its Work Programme for 2010 the analysis of issues related to market definition of business services.
4. In particular, BEREC should analyse:
 - a. potential justifications for product market segmentation to reflect differences between “high end” and “standard” needs (or the potential justifications for remedies differentiation in case that any differences are not so significant so as to be reflected on the market definition);
 - b. practical considerations, for example: where to delineate markets, data to inform analysis;
 - c. the need to consider how demand side factors, for example demand at multiple geographic locations might impact the assessment of possible differences in competitive conditions between “high end” and “standard” services.
5. On the other hand, the report already published referred to “high end” business customers. However, the question of how to characterise “high end” users is one of the main elements of this analysis, as there is no clear line dividing their needs from those of other business users. The reference to “high end” is intended generally to capture non-mass-marketed services, that are demanded by the business segment and that may be very different from the demand for standard (pure residential) services, e.g. due to factors such as the degree of customization necessary to attain the requirements set by the business users. The mere existence of such type of

¹ ERG Report on the regulation of access products necessary to deliver business connectivity services - ERG (09) 51. After adoption of the new EU regulatory framework in November 2009, the European Regulators Group for electronic communications networks and services has been replaced by the Body of European Regulators for Electronic Communications (BEREC).

services, as opposed to more “traditional” offerings, is however not in itself sufficient to reach the conclusion that a separate market exists.

6. Therefore this report will also tackle the elements which could characterise this part of the demand, acknowledging that there may be differences according to national circumstances as the business structure and the sector specialization of the economy has an impact on the services demanded. In this regard, it must be stressed from the outset that the report aims at providing some general guidelines for cases where an NRA deems it necessary specifically to consider the provision of high end business services. It is thus not intended to be a “binding” checklist that NRAs must follow.
7. The adoption of this report, as well as the earlier Report on the regulation of access products necessary to deliver business connectivity services (ERG (09) 51), reflect the importance that BEREC attaches to the high-end business segment. In particular, it is acknowledged that there may be supply and/or demand conditions different from the residential segment, which depending on national circumstances, may need to be taken into account either at the market definition stage or at the remedies stage.
8. In accordance with the objectives set out above, this report, which was made subject to a public consultation in October-November 2010, considers in detail the issue of product market definition with particular regard to the provision of wholesale fixed telecommunications products that support the provision of high end business services. It should be stressed from the outset that high end business services do not necessarily constitute distinct markets from other business or residential services, in particular at the wholesale level. Whether they form separate markets or not will depend on the specific features of the services supplied, the nature of demand for these services, and whether users see other services as potential substitutes. It also depends on the underlying conditions of supply and whether existing resources can be readily diverted to supplying and marketing the services in question. The appropriate market definition may vary between and within Member States due to national circumstances. We explain this further below.
9. In this report we consider services both at the retail and the wholesale level, acknowledging the relationship between them. In doing this we set out the methodological framework, drawing on available guidance where available. We also set out the evidence and analysis that NRAs could undertake to inform where high end business services should be included within their market definitions when conducting a market analysis.
10. The remainder of the report is structured as follows:
 - Section 2 provides a summary of stakeholders’ responses to the December 2009 consultation to the extent that they are relevant to the issue of market definition.
 - Section 3 provides some background, in particular around the types of services that are relevant to the issues considered in this report.
 - Section 4 sets out the methodological framework, drawing on relevant guidelines.
 - Section 5 sets out the relationship between retail and wholesale market definition.
 - Section 6 summarises the evidence and analysis that might be used to inform market definition for high end business services.
 - Section 7 considers relevant evidence for market definition.
 - Section 8 draws together the conclusions of the report.

11. We also note that this report does not seek to further address issues related to remedies of business services. BEREC's work on remedies will be taken forward separately, where appropriate.

2. Summary of stakeholders' views

12. We received 13 responses to the public consultation on the December 2009 Report. Respondents expressed the following views concerning market definition:

Approach to market definition: General remarks

13. One respondent [ETNO] agreed that NRAs should assess whether it is appropriate to define a separate product market for services supplied to some or all business customers, and to analyse carefully the geographic scope of the market. This respondent [ETNO] emphasised the need to begin market definition analysis at the retail level, and to include analysis at wholesale level.
14. Some respondents [ETNO, Telefonica] also suggested that any findings regarding market definition would depend on the case or country in question, and should be determined through appropriate market analysis and within the EU competition law framework. One respondent [Colt] stressed that in defining market sectors it is more significant and useful to define the communications needs of customers rather than the customer end user type. Regarding the practical considerations arising in market definition questions, such as the interaction between product and geographic market definition, one respondent [INTUG] called for BEREC monitoring and NRA coordination in order to promote consistent market definition for telecoms services for international business. This respondent [INTUG] also favoured BEREC recommending a consistent business market definition.
15. One respondent [ETNO] also remarked that technological developments such as the development and use of Internet Protocol (IP) and Next Generation Networks (NGN) may have an impact on the attribution of products to certain markets and product and geographic market scope. Views included the idea for example that NGNs will have many common features across national boundaries.
16. Some respondents [Colt, QSC] noted that the increased use of bundling telecoms products, such as fixed and mobile services, had implications for business services market definition.

Product market definition

17. Some respondents representing incumbent network operators [Telefonica, Telecom Italia, Orange France Telecom] argued against the definition of a separate relevant product market for high end business services. For example, Orange France Telecom said that the definition and usefulness of a separate market would be unclear. Telefonica argued that electronic communications services costs form only a minor part of total costs of Information and Communications Technologies (ICT) solutions that companies buy and hence the behaviour of business users depends more on IT than the price of connectivity.
18. The view that some market and technological developments have implications for demand and supply side substitutability at the wholesale and retail level, such that the definition of the relevant product market would be broader than high end business, was cited by two respondents [ETNO, Orange France Telecom]. For example:

- [ETNO] Wholesale access products for high end business services can use fibre and point to point radio technologies. Use of these for high end business may be more economically efficient than duplication of low bandwidth copper networks. Incumbents and new entrants face similar costs for these technologies so they may be viable supply side substitutes.
 - [Orange France Telecom] Any substitutability analysis must take into account the availability of business grade unbundling and bitstream access as fully proven substitutes for leased lines and partial circuits. The respondent citing this view [Orange France Telecom] said that the substitution of Ethernet or IP services on xDSL dedicated connections for leased lines is already well advanced in many countries at the retail and wholesale level.
19. Responses from organisations representing telecoms users [INTUG] and some communications providers [ECTA, BT, C&W] argued that substitutability was limited between high end and other business services, and so supported the definition of a separate relevant product market for business or high end business services and products at either the retail or wholesale level. Arguments included:
- [BT] Different wholesale products are needed to serve high end businesses
 - [BT] New entrant operators frequently do not offer wholesale services to other operators
 - [ECTA] The supply of business products no longer relies on wholesale leased lines, but on the combination of wholesale products. The associated need for 'quality assurance' by business therefore also applies across a wider product range.
 - [C&W] Although new wholesale access products such as broadband (bitstream) and LLU have come to market, these are generally aimed at residential customers and do not provide ancillary services necessary for operators to supply business customers. Hence customers demanding business services tend to favour leased lines and by implication are less likely to substitute to other products.
 - [ECTA] Concerning supply of business products and services, new entrant operators with a geographically dispersed customer base will not find sufficient economies of scale and hence will not find it economic to invest in their own wholesale products such as through sub loop unbundling. This position is likely to worsen in a next generation environment if access products move closer to the individual customer location.
20. Some respondents representing customer groups and some operators [BT, INTUG, IEN] suggested that large business customers demand products that have particular or different characteristics to those provided to other types of customer. For example they may demand SLAs or particular product specifications. Some of these respondents [INTUG, IEN] argued that some new entrant providers rely on incumbents to provide relevant SLAs or other specifications at the wholesale level, and that incumbents do not always provide these to new entrants to the same standard as the incumbents supply to themselves.
21. One respondent [INTUG] emphasised its view that the scope of the wholesale product market should not be solely determined by the products and services that an incumbent supplies to its own downstream retail operation. Such an approach, this respondent [INTUG] said, would completely foreclose the NGA market, and impede innovation and efficient investment in ICT by customers.
22. This respondent [INTUG] also said that a regulatory approach where there is product market segmentation between high end and standard business services could offer a partial solution concerning any lack of competition in high end business services. The respondent [INTUG] suggested that in this case it is necessary to be careful to

analyse and define substitute products in order to avoid erroneously concluding, for example, that fixed and wireless broadband are in the same market.

Geographic market definition

23. A number of respondents [IEN, C&W, Colt, INTUG, ECTA] emphasised that many large or corporate businesses demand telecom services on a national or pan-national basis, for multiple sites and that this could have implications for the definition of the relevant geographic market. Some of these respondents [INTUG, C&W, Colt] between them suggested a number of effects or consequences:

- [INTUG] Businesses find it difficult to obtain access to international seamless networks from a single supplier.
- [C&W] Geographic market definition given mainly on the basis of competitive effects and locations from the residential sector risks giving inappropriate geographic scope for large business services.
- [Colt, INTUG] The definition of sub-national markets could lead to inconsistencies in the terms and conditions of supply of critical wholesale services, including for example regulation applying in some areas and to some customer sites but not others. This could have the consequence that in practice only the incumbent would be commercially able to provide services for multi site customers across a national footprint.

24. One respondent [ETNO] suggested that competition within wholesale markets for services offered to multi site businesses may well vary within a Member State because, for example, high levels of demand within metropolitan areas can lead to additional, substitute and competitor networks being provided. These networks may include cable TV networks and new entrant fibre networks. This respondent [ETNO] said that the presence of such competing infrastructure should inform, among other things, market analysis and the geographic sub division of the market for SMP designation.

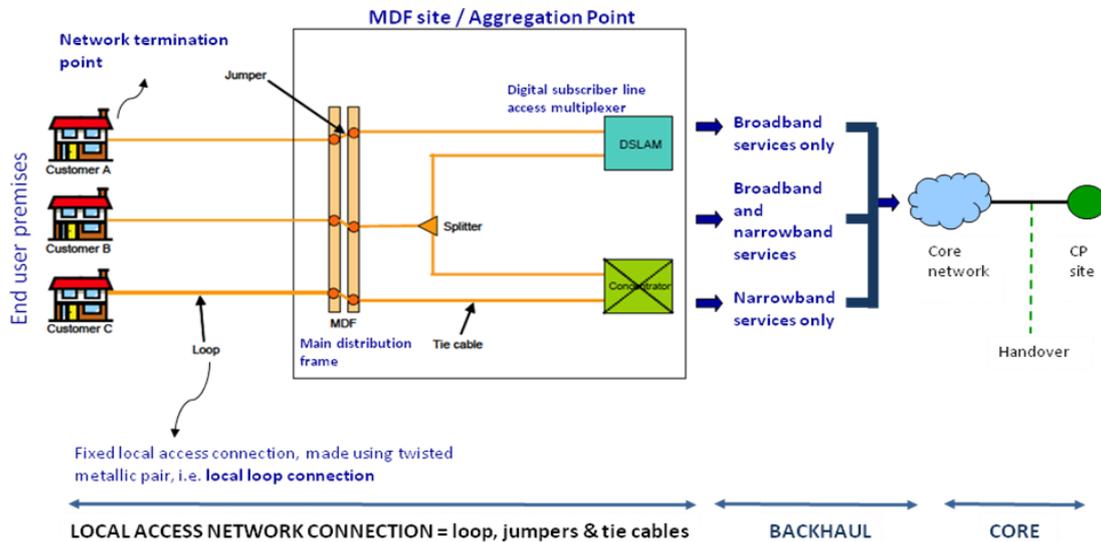
3. Background

25. Our December 2009 Report noted that conceptually it is possible to distinguish between high end businesses which need to purchase a package of telecommunications services of high quality and specification, in many cases over a dispersed geographical network, and 'standard' users who are well served by services designed for the mass market. The question of the high end business services that end customers may demand and market definition needs to be seen within the context of the telecommunications infrastructure needed to provide them and hence the potential set of markets that may need to be considered.

26. An illustrative telecommunications fixed access copper network is given in Figure 1. The "local access network", often described as the "last mile", connects a set of end users' premises to a Main Distribution Frame (MDF). Each MDF also serves as a network aggregation point and is a node on the access network. Telecommunications traffic such as voice and data, broadband and narrowband services are sent from each network aggregation point across a backhaul connection to a core network node. Core network nodes are connected to each other in a core network and this carries telecommunications traffic around the country/world. The core network has fewer nodes than the access part of the network.

27. Communications providers (“CPs”) need a local access network to supply retail services to business and residential customers. Given the high fixed costs of building local access networks, wholesale access to these networks is key to enabling competition in retail markets.

Figure 1. Illustration of telecommunications fixed access copper network



28. Given that end user premises are generally connected to MDFs and the technical capability to carry voice and data exists to and from these end users, a number of retail communications services can be supported over the local access network:

- Narrowband services, i.e. voice telephony and dial-up internet access
- Broadband services; and
- Retail leased lines services for businesses.

29. Leased lines, also known as private circuits, provide dedicated transmission capacity to carry voice and data traffic between a customer’s sites. Leased lines are almost always only purchased and used by business customers. The wholesale local access network products are used by CPs as inputs to provide the leased line retail services.

30. In contrast, retail narrowband and broadband services are taken up by both residential and business customers. Residential customers and small businesses tend to have a single local access network connection to the MDF used for both voice telephony and broadband. Larger businesses may have multiple lines as well as equipment based at the premises allowing for additional features such as calling between extensions within the office, voicemail services, directory services etc.

31. A CP providing retail broadband products to residential and/or business customers may use local access network connection as an input to create their own downstream products, or may use wholesale broadband access products, which will include local access network connection. In both cases, the CP will be able to differentiate retail broadband products offered to residential and business customers. Depending on the CP’s own network footprint it may use a combination of the two to offer for example coverage at a national level.

32. Customers using high end business products and services may require more sophisticated telecommunications services than residential customers and these services may be distinguished by, for example:

- Location, eg. multi-site;
 - Technical parameters, eg. higher upload and download speeds, lower contention ratio, symmetry or asymmetry of upload and download speeds;
 - Range and bundling of services, eg. bundled voice and data, fixed and mobile, and other IS-related services;
 - Service details, eg. guaranteed standards via Service Level Agreements;
 - Contract type and switching costs, eg. bespoke contracts.
33. In analysing the question of market definition of high end business services, it will be relevant to focus on the Wholesale Broadband Access market, although it should be stressed from the outset that this is not necessarily the only market that may need specific consideration. The WBA market is the market where wholesale inputs are combined to enable a CP to offer and differentiate retail broadband products for retail residential customers and businesses.
34. A further element which could modify substantially market definition and the competitive conditions observed in the market is the way services are sold. For example, whether or not offers are bundled can affect market definition because operators may require a particular set of wholesale services including mobile services as well as WBA. BEREC has already identified these issues in the Working Programme 2010 and therefore they are being addressed outside this report.
35. In summary, in approaching the question of market definition for high end business services, it will be important to:
- Understand the factors and service parameters that may distinguish high end business services from others;
 - Consistent with the requirements of the regulatory framework, follow principles of market definition at the retail and wholesale levels in order to establish to what extent, if any, a separate market for high end business services may exist in a particular national context.

4. Principles of market definition

36. The Commission has published guidelines (the “Guidelines”) for use by NRAs in analysing markets and effective competition under the regulatory framework for electronic communications networks and services.²
37. Under the framework, the product and service markets whose characteristics may be such as to justify regulation are identified by the Commission in its Recommendation on relevant product and service markets pursuant to Article 15(1) of the Framework Directive (‘the Recommendation’)³. In the Recommendation, the Commission makes

² Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services (2002/C 165/03), Official Journal of the European Communities, 11.7.2002.

³ 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 (2007/879/EC), Official Journal of the European Union, 28.12.2007 (‘the Recommendation’). Indeed the Commission has identified in its Recommendation the local access network described above in section 3 as a market that is susceptible to ex ante regulation; it is known as ‘Market 4’: *wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed*

reference to the three criteria (presence of high and non-transitory barriers to entry; market structure which does not tend towards effective competition within the relevant time horizon; insufficiency of competition law alone to adequately address the market failure) which should be considered and cumulatively met when identifying relevant markets as candidate markets for *ex ante* regulation.

38. However, different relevant markets can also be defined by NRAs when justified by national circumstances using the three criteria test.⁴
39. The definition of the geographic scope of markets identified in the Recommendation, and the definition where necessary of relevant product/services markets outside the Recommendation, should be consistent with competition case-law and practice. To ensure such consistency, the Guidelines are based on existing case law and specific published Community Guidelines and notices relating both to competition law generally (namely the "Notice on market definition"⁵) and to its application in the telecommunications sector.⁶
40. However the Guidelines note that an NRA's analysis is based on an overall forward-looking assessment of the market, rather than the existence of an agreement or concerted practice, abuse of dominance, or a concentration within the scope of the Merger Regulation. As such, the Guidelines note, it cannot be excluded that markets defined for the purposes of competition law and markets defined for the purpose of sector-specific regulation may not always be identical.
41. The relevant market within which to assess a given competition issue is established by the combination of the product and geographic markets.⁷

4.1. Product markets

42. A relevant product market comprises all those products and/or services which are regarded as interchangeable or substitutable by the consumer, by reason of the products' characteristics, their prices and their intended use.⁸
43. The Guidelines note that whether products/services have the same objective characteristics or price does not necessarily determine whether they are in the same market. In particular the Guidelines state at paragraph 44 that:
- According to settled case-law, the relevant product / service market comprises all those products or services that are sufficiently interchangeable or substitutable, not only in terms of their objective characteristics, by virtue of which they are particularly suitable for satisfying the constant needs of consumers, their prices or their intended use, but also in terms of the conditions of competition and/or the structure of supply and demand on the market in question. Products or services which are only to a small, or relative degree interchangeable with each other do not form part of the same market.*
44. The Guidelines cite relevant examples of case law including for example the Tetra Pak case⁹. In this case the Court (Fifth Chamber) took a view concerning the Court of

location. It has also identified the wholesale broadband access market as a market that is susceptible to *ex ante* regulation; it is known as 'Market 5': *wholesale broadband access*.

⁴ Guidelines, paragraph 4 and 18.

⁵ Commission Notice on the definition of relevant market for the purpose of Community competition law (97/C 372/03), Official Journal, 9.12.1997.

⁶ Guidelines, paragraph 24.

⁷ Notice on market definition, paragraph 9

⁸ Notice on market definition, paragraph 8.

⁹ Case C-333/94P, Tetra Pak v. Commission [1996] ECRI-5951

First Instance's (CFI) judgement relating to the relevant market in systems for packaging liquid food products and the cartons used in these systems. The Court held that relevant criteria for determining whether certain products are interchangeable with others include competitive conditions and the structure of supply and demand on the market. The Court considered two points concerning "structure of demand". These were (a) what the cartons are used for (packaging milk) and (b) that the observed stability of demand implies limited interchangeability between types of carton. Both of these arguments are relevant to demand side substitution analysis; the first is analytical evidence of substitutability (ie. if two things can be used for the same purpose, they are more likely to be substitutes), the second is empirical evidence of substitutability (ie. if demand for a good is stable regardless of what is happening to for example price and supply of other goods, those goods are less likely to be substitutes).

45. The Guidelines therefore conclude that, to complete the market-definition analysis, an NRA should also examine, where necessary, the prevailing conditions of demand and supply substitution by applying the hypothetical monopolist test (described below).

Demand-side substitution

46. Demand substitution constitutes the most immediate and effective disciplinary force on the suppliers of a given product. A firm cannot have a significant impact on the prevailing conditions of sale, such as prices, if its customers are in a position to switch easily to available substitute products. Basically, the exercise of market definition consists in identifying the effective alternatives available to customers.¹⁰
47. The hypothetical monopolist test ("HMT") consists of identifying a focal group of products of interest, and asking whether, if supply of these products were in the control of a single supplier (the hypothetical monopolist), such a supplier would be able profitably to sustain a small but significant non-transitory increase in prices (SSNIP)¹¹. The Commission typically considers a SSNIP of 5% to 10%. If such a price increase could not be sustained, because a sufficient number of customers would switch to an alternative product in response, then that alternative product should also be included in the market definition. The HMT is then applied to the broader candidate market definition.
48. In determining demand-side substitutability, the Guidelines note that NRAs should use *inter alia* any evidence of customers' past behaviour as well as historical price movements and relevant tariff information.¹² They should also have regard to switching costs or barriers, such as investment in supplier-specific technology or long term contracts.¹³

Supply-side substitution

49. Supply side substitution analysis is often carried out to identify additional constraints placed on the hypothetical monopolist through potential entrants into the market for the focal product. Suppose that two products are supplied using similar technology and assets. In this case, a small but significant increase in the price of one product

¹⁰ Notice on market definition, paragraph 13.

¹¹ Given the concept of a SSNIP, the HMT is also referred to as the SSNIP test, and we use these terms interchangeably in this document.

¹² Guidelines, paragraph 49.

¹³ Guidelines, paragraph 50.

(the focal product) could encourage suppliers of the other product to switch production into the focal product. As such, even if the products are not substitutable from the perspective of customers, the presence of suppliers of the alternative product could constrain the prices of the focal product. The two products could then be seen as supply-side substitutes and included in the same market.

50. In this analysis, it is important that the providers of the alternative product considered are not already materially present in the supply of the focal product. Providers of both the focal and the alternative products are not relevant to supply side substitution where they supply services already identified as demand side substitutes. As such their entry has already been taken into account, so supply side substitution from these suppliers cannot provide an additional competitive constraint.
51. Another key point for supply side substitution to be relevant is the ability for suppliers to be able to enter the market quickly and at low cost by virtue of their existing position in the supply of alternative products or services. Hence, for the market to be broadened on grounds of supply-side substitution, the costs of switching production in this way must be relatively negligible. The fact that a rival firm possesses some of the assets needed to provide a given service is immaterial if significant additional investment is needed. NRAs will also need to ascertain whether a given supplier would actually use its productive assets in this way, having regard to capacity commitments, and potential delays in concluding interconnection or co-location agreements, negotiating other forms of network access or obtaining rights of way for network expansion.¹⁴
52. The scope for market entry is closely related to the question of supply-side substitution, and is also a central part of competition assessment. However, the scope for entry is not a criterion to define relevant markets, as it would be the case with supply side substitution (which is based rather on an assessment of more immediate competitive constraints). Even if the conditions for supply-side substitution are not met, leading to a relatively narrow market definition, it may be that suppliers of similar products (or other/new firms) face low barriers to market entry, and that the threat of such entry acts as a constraint on prices in the relevant market which will be taken into account at the SMP analysis stage.

4.2. Geographic markets

53. Geographic market definition would typically have regard to whether customers will switch to suppliers located elsewhere in response to a small but significant price increase.¹⁵ However the scope for such switching is limited in some telecommunications markets.
54. The Notice on market definition¹⁶ describes the relevant geographic market as the area in which the undertakings concerned are involved in the supply and demand of products or services, in which the conditions of competition are sufficiently homogenous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas.
55. The process of defining the geographic market proceeds along the same lines as for product market definition in relation to the assessment of demand and supply-side substitution in response to a relative price increase. Accordingly, NRAs should

¹⁴ Guidelines, paragraph 52.

¹⁵ Notice on market definition, paragraph 13.

¹⁶ Paragraph 8. See also Guidelines, paragraph 56. The Guidelines note that perfect homogeneity of competitive conditions is not required

assess mainly consumers' preferences as well as their current geographic patterns of purchase. Operators not currently engaged in the relevant market, but who will enter it in the short term in response to a relative price increase in the region of 5-10%, should be seen as supply-side substitutes.¹⁷ NRAs should also assess the homogeneity of competitive conditions generally in terms of particular market share and pricing configurations as well as entry conditions in the areas under consideration.¹⁸

56. Regarding conditions of competition in geographic market definition, it may also be relevant to consider whether or not a common pricing constraint exists across geographic areas. That is, whether or not there is a geographic area across which a supplier voluntarily supplies the product in question at a uniform price. If there are such common pricing constraints, the geographic market could be defined to include areas where these common pricing constraints apply, even if there are no demand and supply side substitution possibilities.

4.3. Other issues of market definition

57. In exceptional cases, the relevant market may be defined on a route-by-route basis – in particular as paired countries or cities. Indirect transmission services (delivering a call from one country to another via a third country) may be a supply-side substitute for direct transmission services (or each other), but this should be decided on a case-by-case basis. However a market for the provision of services on a bilateral route would likely be national in scope since supply and demand patterns in both ends of the route would most likely correspond to different market structures.¹⁹
58. In certain cases, “chains of substitution” may lead to a market definition which includes products which are not direct substitutes for one another, because both are substitutes for other products in the market.
59. As it is stated in the Guidelines, “[I]n essence, chain substitutability occurs where it can be demonstrated that although products A and C are not directly substitutable, product B is a substitute for both product A and product C and therefore products A and C may be in the same product market since their pricing might be constrained by the substitutability of product B”.
60. The same reasoning also applies for defining the geographic market. Given the inherent risk of unduly widening the scope of the relevant market, findings of a chain of substitutability should be adequately substantiated.²⁰ In particular they must be corroborated by evidence, e.g. of price interdependence at the extremes of the chain.

5. Retail and wholesale markets

61. Next we consider the question of defining wholesale markets. This depends on the interaction of wholesale and retail markets, because demand in wholesale markets is derived from that in the related retail markets. Hence the definition of wholesale markets logically follows the analysis of retail market definitions.

¹⁷ Guidelines, paragraph 57.

¹⁸ Notice on market definition, paragraphs 28-31. Regarding potential consideration of geographic segmentation in the broadband markets, reference is made to cases UK/2007/0733, UK/2010/1064-5 and PT/2008/0850.

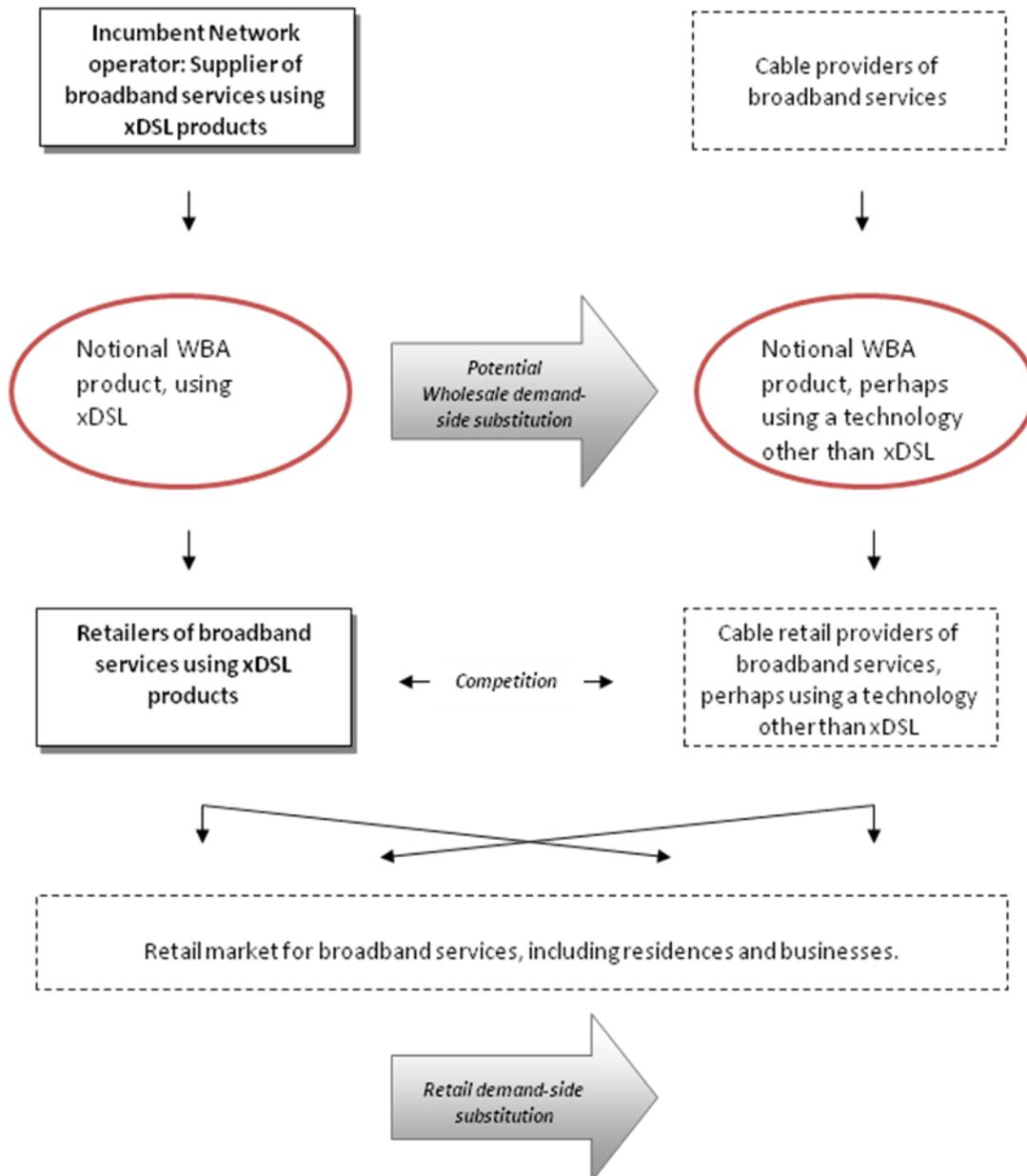
¹⁹ Guidelines, paragraph 61.

²⁰ Notice on market definition, paragraphs 57 and 58; Guidelines, paragraph 62.

62. In seeking to define either retail or wholesale markets it is important to assume that there is no regulation in place in the market under consideration. To do otherwise would mean that a subsequent assessment of market power at the wholesale market level would depend on a retail market definition that relied on a wholesale regulatory remedy arising from the finding of wholesale market power. This would be a circular and incorrect approach to market definition. It is however appropriate in defining a market to take account of any regulation that may be operating upstream of the market under consideration, since this is likely to affect (and is likely to be intended to affect) competition at the downstream level. Overall this approach to market definition is consistent with the 'modified Greenfield' approach.
63. To demonstrate these points and the approach to wholesale market definition, figure 2 sets out an illustrative supply chain for broadband products and services. It is important to point out that what is detailed below should be understood as an example, and it does not intend to reflect any particular conclusion on issues of market definition or substitutability between xDSL technology and other technologies.
64. For the purposes of the figure below, we assume that services may be provided on the basis of xDSL technology via the incumbent network operator's network or by cable operators using another technology²¹. In either case, they serve a retail market for broadband products and services. There is likely competition at this level between retail providers.
65. In either case, there are in principle products and services at the wholesale level, here labelled Notional WBA product using xDSL and Notional WBA using a technology other than xDSL, which can be inputs to the retail level. It may be the case that a WBA product using xDSL is only traded because there is a regulatory obligation on the incumbent network operator to provide it to the market. In this case it would be a wholesale input to retailers of broadband services using xDSL products. It may also be possible that cable providers of broadband services do not offer a similar WBA product using a technology other than xDSL. Absent regulation and willingness of other operators to offer WBA products at the wholesale level, it is possible that these notional WBA products are not offered at the wholesale level, but are instead self supplied products by vertically integrated providers. It is nevertheless possible to analyse the wholesale market with a view to defining it, with the assumption that there is no regulation.

Figure 2. Supply chain for broadband products

²¹ Generally it can be assumed that it is the incumbent operator's offering that is the most predominant in the market, so this could be a relevant initial point to define the relevant market although other options are available for NRAs (see BEREC Report on self-supply, BoR (10) 09).



66. It is the ability (or not) of the hypothetical monopoly network operator to sustain prices above competitive levels that is the central question for wholesale market definition, assuming no regulation is present. We can address this question by considering whether there are direct (wholesale level) or indirect (retail level) constraints on such pricing. These effects can be described as follows.

Direct constraints If an operator were to raise wholesale prices of for example the Notional WBA product using xDSL, its customers (the retail providers) could potentially respond by switching away from provision of broadband services using xDSL into provision of broadband services using other technologies.²² This effect is indicated as *Potential Wholesale demand side substitution* in Figure 2. This would be a 'direct' constraint on the network operator. However, the retailer providers could only do this, and

²² Note that, from the perspective of the monopoly network operator, this is a case of *demand side substitution* – in that its customers (the retailers) are switching their demand for wholesale access to another service in response to a price increase. In contrast, *supply side substitution* would describe the case if another network operator responded to the increase in wholesale prices by entering the market to supply other access connections to retailers.

continue to serve the same retail customers as before, if those retail customers (residential and businesses) saw broadband products and services via other technology as an acceptable substitute for broadband via xDSL.

If a sufficient number of retailers were able to switch in this way in response to a SSNIP, the monopoly network operator would not be able to sustain prices above competitive levels. This would suggest a broader wholesale market – i.e. one including wholesale broadband products using xDSL and other technologies – based on demand side substitution at the wholesale level.

Indirect constraints Alternatively, if the monopoly network operator raised wholesale prices of the notional WBA product using xDSL, retailer providers providing broadband using this input could decide not to switch. If so, they may decide to respond to this increase in their costs by raising retail prices²³. In this case, the question of interest is how residential and business customers would respond to a potential price increase at the retail level²⁴. If they responded (in sufficient numbers) by switching to broadband using other technology provided over cable, then the monopoly network operator would lose wholesale revenues from those lost customers, and the wholesale price increase would not be sustainable. This is referred to as an ‘indirect’ constraint on the network operator. This effect is indicated as *Retail demand side substitution* in Figure 2. Again, this could suggest a broader market (at both the wholesale and retail level) which potentially included broadband products provided using xDSL and other technologies.²⁵

In practice, the wholesale price of the service will account for a proportion of the retail price. For example, if the wholesale price is €1, and the retail price is €2, an increase in the price of the wholesale price to €1.10 (i.e. of 10%) will, if passed on in full, lead to an increase in the retail price to €2.10 – i.e. an increase of only 5%. This will tend to dilute the indirect constraint effect, particularly if the wholesale cost is a relatively small part of the retail price. The overall impact of the wholesale price increase on substitution at the retail level will depend on this dilution effect and how responsive in aggregate customers are to a price rise at the retail level (ie. the *price elasticity of demand*.)

67. Crucially, both types of constraint depend ultimately on the willingness of residential and business customers to use broadband provided by a technology other than xDSL as substitutes for broadband provided via xDSL – ie. on demand side substitution at the retail level.

²³ The potential pass-through of an increase in the price of the wholesale input will be dependent upon a number of conditions, in particular the degree of competition prevailing at the retail level.

²⁴ There would be no scope for supply side substitution, because any retailer seeking to enter the market to provide broadband via xDSL would have to pay the wholesale price set by the monopoly network operator, and so would be unable to undercut existing retailers.

²⁵ Note that the issue of indirect constraints and self supply is discussed at length in BEREC Report on self supply, BoR (10) 09, including the possibilities conferred on NRAs to assess self-supply either at the market definition or SMP assessment stage. It should be noted that in the framework of the Article 7 review process, the Commission has consistently maintained that indirect pricing constraints, where they are found to exist, should be taken into account in the context of the SMP assessment. In this regard the Commission has stated that if weak constraints are automatically taken into account at the market definition stage, there is a risk of prejudging the SMP assessment and understating the real extent of market power at the wholesale level by including self-supplied market shares for all vertically integrated competitors irrespective of whether the latter are actually constraining the market behaviour of the incumbent (e.g. case UK/2007/0733 and UK/2010/1065, PT/2008/0851, NL/2008/0827, EE/2009/0943).

68. For this reason, it is generally appropriate to begin any wholesale market definition by assessing the scope for retail level substitution – ie. by defining the retail market first. The conclusion on retail market definition can then be used to inform the wholesale market. This approach has been set out in the EU regulatory framework, for instance section 2.1 of the Explanatory Note to the 2007 EC Recommendation notes a cause-effect relationship between retail and wholesale markets, saying “Having defined retail markets, which are markets involving the supply and demand of end-users, it is then appropriate to identify the corresponding wholesale markets which are markets involving the demand and supply of products to a third party wishing to supply end-users.”

6. Evidence and analysis for high end business services

6.1. Introduction

69. As set out in section 4 above, the Commission Guidelines set out principles for market definition and the identification of product and geographic markets. Whether high end business services constitute a separate market will depend on (a) the willingness of customers to switch to other communications services (ie. demand side substitution), and (b) whether suppliers of other services are able to switch to the provision of high end business services (ie. supply side substitution).

70. We set out here what evidence and analysis NRAs might explore in terms of demand and supply side substitution at both the retail and wholesale levels. We begin with some general observations concerning what factors may distinguish high end business services from other business or residential services before moving on to discuss how demand and supply side substitution might be assessed, including the question of the extent to which there may be a ‘chain of substitution’.

6.2. High end business services distinguishing factors

71. Retailers provide a variety of communication services, often marketed and tailored to the different needs of business and residential customers or subgroups of these customers. This could include a range of different Internet access products targeted at residential consumers, or high specification services for customers that demand high end business services.

72. It may be the case for example that tailor-made products are demanded by companies with intensive and complex requirements for data transmission services (high end users). On the other hand, residential and SME customers may demand standard products. The characteristics of demand regarding quality requirements, bandwidths or distribution channels being used might in principle point to the existence of some differences between residential and standard business users from high end users. These characteristics will depend on several factors such as the size of the company, the sector where it operates, etc.

73. The analysis of market characteristics however demonstrates that it is often difficult to draw a line between residential and business (or "standard and high-end" business) products at the retail level. For example, regarding terms and conditions, analysis at the retail level might show that there are "standard" contracts (ie. with

General Terms and Conditions) available which might nonetheless contain individualised or tailored elements such as provision for service at multiple locations and a high service level. They might therefore resemble so-called high-end products with non-standard contracts and so it may be difficult to distinguish precisely between the products on the basis of contract terms and conditions. Similarly, volume of usage per contract may not be a useful characteristic to distinguish between 'residential' or 'business' products. A contract providing for a high volume of usage may for example simply represent a substitute for a set of smaller volume usage standard contracts, but with a discount on price. The product in question would be similar in either case.

74. To aid discussion in this document, we use the term “high end user” to refer to those business customers with connectivity and service requirements differing from those related to residential and standard business customers. We note that the differences between these will depend on the demand and supply characteristics for telecommunications in each Member State. We also note that provision of high end business services may include in some instances a cross-border element, whereby services need to be provided to one customer with physical presence in several EU Member States. Provision of high-end business services may also involve the provision of services at multiple sites of the customer, an issue that is discussed further below.
75. Our December 2009 report set out some first thoughts on high end services to business customers and our January 2010 Public Hearing in Brussels elicited further views. A number of factors that may help distinguish high end retail business services from others²⁶, include:
- Technical parameters: Some businesses will require higher specification technical parameters concerning speed, jitter, contention ratio, static IP address, ability to host websites, symmetry or asymmetry of upload and download speeds etc.
 - Location: Some businesses will want packages of services, including particular technical and service parameters, available on a multi- site and possibly multiple country basis from a single supplier.
 - Range and bundling of services: Businesses may require a suite of services including both fixed line and mobile products, or suppliers may offer packages that bundle enhanced IT services with the main product set. Alternatively, some businesses may want to self-assemble from individual services or service providers.
 - Service details: Some business customers may require Service Level Agreements concerning certain aspects of quality of service such as guaranteed very low percentage downtime, fast guaranteed fault finding and repair. Associated services may include the need for helpdesk support, perhaps extending to outside office hours and including access to highly qualified personnel.
 - Contract type and switching costs: High end business services may be bespoke, given the need to specify technical and service parameters. As a result switching costs may be higher for these business customers, given the need to identify possible offers, specify contracts, and stipulate termination clauses or invest in equipment and/or staff. On the other hand, a larger company with dedicated

²⁶ The focus here is in particular on features that – according to the circumstances of each case – may not be part of a standard offering.

procurement staff may be more willing to switch than a smaller business with fewer resources.

It should be noted at the outset that the existence of such distinguishing factors do not necessarily imply the existence of a separate business market. This will be determined by an analysis of and evidence for demand and supply side substitution, as required when applying the principles of product and geographic market definition which have been set out above. The issues pertaining to product and geographic market definition are set out in the next section.

76. On a related note, it is worth stressing that the precise line that divides high end business services from “standard” services or other types of business services may be difficult to draw. This is particularly the case also with regard to issues such as the gathering of data by NRAs, as operators may have difficulty in providing the information on the basis of the analysis that the NRA is intending to make.
77. In this regard, product providers, including CPs, will in principle be a primary source of data and information. However CPs often do not delineate between markets for the same purposes and in the same way that NRAs might choose to do. CPs’ delineations might also differ significantly between different CPs. It is therefore possible that CPs’ own delineations would only partially reflect the expectations of the NRA when deciding to request information from CPs.
78. NRAs will therefore need to make a judgement between relying on data provided by CPs or requesting more tailored data that meets better the criteria an NRA takes into account when defining the relevant market. Each approach has pros and cons, such as:

Rely on CP data

- Pros Pragmatic and potentially fast. Where the basis for the delineation is clear, the NRA may be able to use existing data as a good proxy for informing the NRA’s own views.
- Cons Available data may not correctly describe the potential segmentation of the relevant market as envisaged by the NRA. Could encourage CP to adopt delineation that favours its own position.

NRA requires tailored data

- Pros CP’s estimations and data should be tailored to inform the views (even if preliminary) of the NRA.
- Cons May be time consuming or expensive for CP to calculate, particularly if the criteria for delineation are very detailed (e.g. how to treat custom built products, certain quality parameters). It may also be necessary for the NRA to specify what happens if some of the criteria are not met.

6.3. Product market definition

6.3.1. Retail level

Demand side substitution

79. At the retail level, it may be helpful to consider first any evidence of demand side substitution between high end business services and other business services. Where there is such evidence, this could provide a basis for going on to consider whether or

not there may be demand side substitution between business and residential products and services.

80. Evidence and analysis for considering retail level demand side substitution between business and residential could include:

- Evidence that customers have switched, or would switch, between services in response to a small but significant change in the relative price of those services²⁷;
- Evidence that the services in question perform similar functions;
- Assessment of barriers to switching. Any need to use different technology with different products, the ease of switching between different products and providers and the prevalence and size of early termination payments may all be relevant here.
- Extent to which there may be a chain of substitution.

81. The assessment of the extent to which customers may switch between services in response to a change in relative prices is often undertaken with reference to a hypothetical small but significant non-transitory increase in price (ie. a SSNIP of 5% to 10%). We note that, in general terms, a high end user may differ from other business customers because its demand of telecommunications services is very sophisticated and includes several features. These offers may thus be provided at higher prices - much higher than the 5-10% SSNIP range – than standard offers directed to the mass market. However, prices do not have to be identical for products to be regarded as effective substitutes. If two products perform the same purpose, but one is of a higher price and quality, they might still be included in the same market. The question is whether the price of one sufficiently constrains the price of the other. Although one is of a lower quality, customers might still switch to this product if the price of the more expensive product rose such that they no longer felt that the higher quality justified the price differential. The extent of substitutability would depend on the number of marginal customers who are willing to make a trade off between price and quality.

82. NRAs might gather evidence from product information and sales records from CPs and/or consumer surveys concerning the extent to which services in question perform or are seen to perform similar functions, consumer purchasing behaviour and willingness to switch.

83. Concerning evidence for demand side substitutability at the retail level of high end business services with other business services, some users have mentioned that multi-site large businesses may exhibit demand for services which have a higher specification than those aimed at the mass market. They noted for example that some services:

- are sold almost exclusively to businesses such as leased lines and products using ISDN 30; and/or
- may require 'premium' service level agreements.

84. If customers for these high end business service characteristics are unwilling or unable to substitute to other products and services in response to a SSNIP, this may indicate a separate product market for these services.

²⁷ Any assessment must also take care to determine whether or not exhibited prices against which likelihood of switching is judged are competitively determined. To the extent that they are not, in particular where the supplier may already be said to be exercising market power and so pricing above the competitive level and distorting demand side substitution choices, additional evidence will need to be examined in relation to the hypothetical question of switching and demand side substitution.

85. Regarding potential barriers to switching, NRAs will need to identify and assess the strength of these. In particular there may be a number of barriers to switching between products and services provided on a standard and tailor-made contract basis. These effects might be experienced by high end or standard customers, for example, it may be relatively time consuming and expensive for a customer to seek and receive a tailor-made offer and so such contracts are less likely to be switched to by standard customers.
86. High end business services are likely to be distributed through specialised networks which have been adapted to the requirements of the high end user. Contracts for these services may be long term and difficult or costly to exit, suggesting that such contracts could be a barrier to switching. Hence from a demand side perspective, standard and tailor-made offers may present important differences in terms of prices, performance and contract terms and conditions. These elements may make it difficult to conclude that there is demand side substitution among them from the demand side perspective. NRAs will need to consider how to identify and assess these effects.
87. The extent to which there may be a chain of substitution can also be an important element in assessing the relevant market. For example, depending on their business requirements, some retail business customers who currently use high end services may be willing to substitute to lower service levels in response to an increase in price. Such substitution may be facilitated in a technical sense since DSL-based broadband connections may have 'standard' and high end variants which may provide some flexibility in terms of technical performance parameters. For example a sufficient number of businesses may consider switching to a 10:1 contention ratio service if the price of the standard 20:1 service increased by 10%. Using the chain of substitution argument it may be the case that all business asymmetric broadband services covering 20:1 to 1:1 contention ratios are considered to be in the same relevant market. Similar arguments may apply for other technical and service parameters such that high end business services can be said to be in the same relevant market as 'standard' business services or even residential services.

Supply side substitution

88. We recall from paragraph [49] above that supply side substitution is only relevant to market definition to the extent that it provides constraints not captured by the demand side analysis.
89. The scope for supply side substitution will often depend on whether CPs can access wholesale services and products needed to provide retail products. Two routes are generally open to a CP:
- use existing infrastructure, e.g. based on own network inputs or existing unbundled assets, or invest in creating its own infrastructure products, such as by investing in local loop unbundling; and / or
 - access other existing wholesale products, which may be provided on a regulated basis
90. Regarding the first route, a CP with existing network assets in place, such as those based on unbundled inputs, and which is currently active in wholesale supply may be better placed to divert its existing resources to the supply of high-end business customers. However, in the absence of such existing network assets, a CP will usually require a minimum scale of operation to have a sufficient incentive to invest in its own unbundled local loops or its own network. One consequence of this is that the likelihood of investment will depend on the geographic distribution of customers and

vary between geographical areas. As described below, business operators demand specific conditions which could influence development of the operator's infrastructure products. In particular, a minimum scale is required to reach local exchanges of the incumbent to unbundle local loops. Therefore, even if wholesale obligations are in place, particular conditions of business oriented operators could prevent the effective use of wholesale services.

91. The second route will depend on the usability of wholesale products offered, including commercial terms. Even where regulated wholesale products are offered, particular commercial conditions could prevent or impede their effective use by CPs wishing to construct retail offers. Conversely, it may be argued that the same underlying inputs are used to supply retail broadband services, and that service-related features specific to high-end business services may not in themselves preclude an operator that was currently offering residential or standard business retail broadband from switching to supply high-end business customers within, for example, a period of one year.
92. CPs may find it difficult to access wholesale products via either route. Given that investment in wholesale products may be worthwhile in some geographic areas and not others this may have the consequence that supply side substitution opportunities may be reduced in some geographic areas compared with other areas.
93. The inputs used to provide tailor-made services on the one hand, and standard ones on the other, may be different in terms of the technologies used, the distribution networks and the marketing tools. This is because standard products are generally designed, marketed and targeted in different ways to tailor-made services. Broadband internet access for business customers can also be offered through different infrastructure such as wireless local loops, or through different products such as leased lines. These are relatively costly but may be more viable in the case of business customers. The need to procure different inputs for different customers could impede supply side substitution in some cases.
94. The scope for supply side substitution in the retail supply of broadband services for the business sector, could therefore depend on:
 - Whether other operators, both ones who have their own end-to-end networks and ones whose services are based on an upstream remedy, can offer services to the business sector;
 - The extent to which wholesale inputs for residential, business and high end business services are similar;
 - The effects of commercial terms for wholesale products; and
 - The length of time which an operator would need to begin supplying business or high end businesses.
95. Supply side substitution will therefore depend in part on what wholesale inputs are available (under the assumptions of the modified Greenfield approach) and on what commercial terms.
96. It will also be informative to assess to what extent differences in technical and other parameters in offers available to the market represent significant gaps or breaks in the set of substitution possibilities. Where these exist and where providers are unable to substitute products across such gaps, this may indicate a separate product market for high end business services. Alternatively, it may be argued that such service-related features would not preclude supply of high-end business customers within, for example, a period of one year.

Other elements to be considered in the market definition. Conditions of competition

97. In some cases, NRAs refer to the concept of ‘conditions of competition’ in making their conclusions. One instance is Case DE/2008/0843 (Wholesale Call Origination): technical specifications mean that transit cannot be offered by a third party. BNetzA concluded that there were therefore homogenous conditions of competition between “call origination” and “call origination plus transit” in connection with carrier selection and pre-selection, and both were included in the same market. In Case IT/2009/0999-1000, AGCOM noted that the leased lines provided to end-users are based on the fixed infrastructure, whereas services for mobile operators are dominated by wireless technologies where end-users, i.e. mobile operators, are self supplying the required capacity. This was seen as a difference in competitive conditions and led to the conclusion that leased lines provided to end-users and to mobile operators belonged to separate markets.
98. The homogeneity of competitive conditions across products being considered can also be an aspect for analysing whether particular products should be considered to be in the same relevant geographic market.

Relevant experiences on market definition

99. Ofcom has analysed the substitutability of high end users offers in the context of its WBA market review (see box below). In the case of asymmetric products, Ofcom suggests in its consultation that a chain of substitution on the demand and supply side may exist such that offers designed for business and high end users are part of the same relevant retail market. The case study provides further details.
100. From an ex post perspective, the European Commission concluded in the Telefonica case²⁸ that the relevant broadband retail market comprises all the standard broadband products, whether provided through ADSL or any other technology, marketed in the “mass market” for both residential and non-residential users.

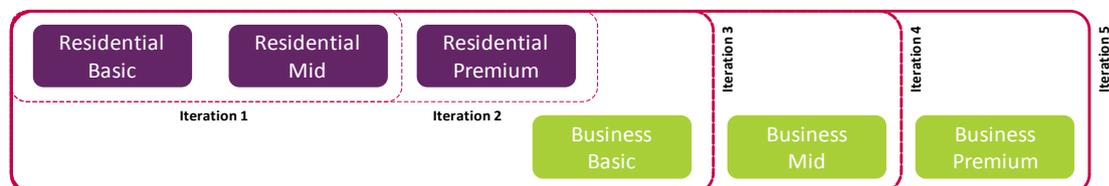
²⁸ Case COMP/37.784.

Retail market definition:

UK

1. Ofcom published a consultation concerning its review of the UK WBA market ('market 5') in March 2010¹. We summarise here Ofcom's approach to market definition at the retail level in order to illustrate one NRA's approach to these issues.
2. Ofcom's 2010 WBA market review approach to product definition started with identifying the key characteristics of asymmetric broadband access services that distinguishes them from narrowband dial up and symmetric broadband services. Symmetric broadband services, including leased lines, are only taken up by business customers. It may be the case that some of the "high end" services fall under this market, i.e. the business connectivity market².
3. Looking at specifically asymmetric broadband services, Ofcom then considered the question of business versus residential broadband services in two steps:
 - Assessing whether residential and "standard" business broadband products are in the same product market; and then
 - Assessing whether "standard" and "high end" business products are in the same product market.
4. For the first stage, Ofcom considered the "standard" packages that are currently available in the market, and noted that some of the features of the "high end" business products are available to purchase as add-on options. These packages differ from the "high end" business products considered in the second stage in that these tend to be "off the shelf" packages, and consumers self-select the option that align most with their requirements.
5. Starting with a basic residential package, Ofcom considered whether the product market should be extended to include the mid-range package. This is done looking at whether demand-side substitution by end users and supply-side substitution from communications providers form sufficient competitive constraints on the pricing behaviour of a hypothetical monopolist. Successive iterations of this reasoning leads to a wider definition of price/quality offerings based on the "chain of substitution" between intermediate products/services within this range. This means that these products are likely to be subject to a common pricing constraint, such that changes in the relative prices between two products are likely to induce consumer switching offset the original impact of the price change. Figure 2 illustrates this process of analysis.

Figure 1. Chain of substitution analysis linking business and residential broadband products



6. In order to inform a demand-side substitution analysis, Ofcom carried out a survey of internet connectivity by business and residential customers. The results of the survey were used to conduct the SSNIP tests to inform Ofcom's view of market definitions. However, Ofcom noted that the forward-looking nature of the survey results based on consumers' stated preferences means that they should be viewed as suggestive rather than definitive.
7. On supply-side substitution evidence from the market indicated that an operator offering services to residential customers would already tend to have different price/quality packages available. In addition many of the LLU operators already offer business services based on the same wholesale platform as one used to serve residential customers. Together Ofcom noted that these suggest that:
 - Operators who currently only supply (say) residential services could readily start offering business services in response to a SSNIP by a hypothetical monopolist, and vice versa.
 - In practice, most operators already offer business and residential services and therefore do not provide additional supply-side constraint;

¹ Ofcom, Review of the wholesale broadband access markets Consultation on market definition, market power determinations and remedies March 2010

<http://www.ofcom.org.uk/consult/condocs/wba/wbacondoc.pdf>

² Ofcom reviewed this market in its Business connectivity market review, February 2009. <http://www.ofcom.org.uk/consult/condocs/bcmr08/>

8. The approach to assessing the “high end” business products starts with a definition of what service features are critical to business customers, and what service level would constitute as a “high end”. In surveys carried out for Ofcom’s previous market reviews, business respondents appear to have a consensus on the former but not the latter. For example, they would agree that a low contention ratio is an important feature, but that could be 10:1, 5:1 or 1:1. Ofcom noted that contention ratios for “standard” business packages tend to start at 20:1, in contrast to 50:1 ratios typical for residential broadband products.
9. Ofcom considered whether a hypothetical monopolist providing a business product with 5:1 contention ratio would be able to impose a SSNIP profitably. If a sufficient proportion of businesses then switch to products with a slightly higher contention ratio (for example 6:1), this would suggest that the product market definition should be expanded to include this. Extending this argument, it would suggest that there is likely to be a chain of substitution linking services with different contention ratios, even though products at the ends of the range may not be considered by businesses as direct substitutes.
10. Ofcom also considered other service characteristics such as minimum throughput and service care levels, and the evidence suggested that there is no particular value that would categorically define one as “high end” and the other as “standard” business broadband product.
11. Similar to the case of residential versus standard business products, the supply-side substitution constraints were limited, based on market evidence. That is, operators are already able to tailor their products according to end user needs, such that “high end” requirements can be satisfied using existing wholesale inputs. Those who are not currently in the market for “high end” business services could provide a sufficient additional constraint by already having the necessary inputs to respond quickly to a hypothetical SSNIP.
12. Based on the combination of the above analysis, Ofcom therefore proposed that, for the UK, there was a single retail market for residential, “standard” and “high end” business asymmetric broadband products.

Netherlands

1. In its latest market review on WBA OPTA defined a single retail broadband market. This market includes all varieties of broadband services and services for consumers as well as business services. OPTA concludes that there is a high degree of substitution between consumer and business services. There is no single parameter to differentiate between these services. End users can switch to another bandwidth of overbooking in case of a price increase and business can switch to consumer products.”

6.3.2. Wholesale level

101. At the wholesale level, demand for wholesale products by CPs supplying the retail market will be derived from and reflect the products and service characteristics that retail customers demand.
102. So for broadband services²⁹, CPs supplying the retail business market may use either their own infrastructure or products (ie. self supply), relevant wholesale services offered to the open market such as ULL or WBA products with specifications that are designed to meet retail business customers’ needs. For example, in order to create retail broadband products for business customers, CPs may purchase more complex or upgraded WBA services in terms of capacity, speed, guaranteed speed

²⁹ As noted above, this discussion makes sense only in markets which are not specifically suited for residential or business users like, for instance, fixed telephony or broadband services. Fixed telephony is a quite homogenous service and any differentiation regarding business customers relies at the retail level and not on network elements. In fact, from the network perspective, only reliability, which will be demanded by business end users, could be considered a factor for differentiation between both types of services.

and traffic volumes, reliability, and reduced jitter and delays. Meeting the requirements of business customers may be sufficiently significant and hence profitable to justify the existence of CPs focused specifically on the business segment.

103. As noted above in section 5, it is possible that such wholesale products, absent regulation, are not explicitly offered to the market. In fact, this could be the case, as described below, if the WBA market is geographically segmented. In determining what the relevant wholesale market may be therefore (including the extent to which a separate wholesale market for high end business services may be held to exist), NRAs will have regard to the extent to which there is evidence of direct and indirect constraints operating on the notional wholesale market which may suggest that there is or is not substitution possible at the wholesale level between for example products which support high end business services and others. We set out below the evidence and analysis that NRAs may undertake concerning demand and supply side substitution possibilities, and chains of substitution.
104. We note in passing that self supply of a wholesale product from the wholesale arm to the retail arm of a vertically integrated undertaking raises issues of how an NRA might measure market share and market power where the market is defined to include this product. BEREC has considered these issues separately in its Report on self supply³⁰.

Demand side substitution

- Direct constraints

105. Where a separate relevant market for high end retail products exists, it will be appropriate for NRAs to consider the wholesale products involved and possibilities for any high end retail providers to substitute to alternative wholesale products and so provide a direct constraint on pricing of the focal wholesale product. For example a retail provider may purchase a set of WBA products and services. If the retailer can substitute to alternative WBA products in response to a SSNIP, this will provide a direct constraint on the wholesaler. This effect relies on the ability of the high end retailer to use a different wholesale input to provide high end products which are demanded by the retail customer.
106. The extent to which direct constraints exist here may depend on the willingness of operators providing wholesale products for the residential market to offer wholesale broadband access with appropriate SLAs so as to enable a high end retail provider to operate. Residential wholesale product providers are the most likely alternative providers since they have generally already taken advantage of scale economies to roll out services in many areas. However, as noted in the supply side substitution section, residential operators could face relevant costs to provide appropriate wholesale services for high end users operators.
107. As noted in section 5, NRA's assessment of the possibility of this effect should be undertaken on the assumption that there is no regulation occurring at the wholesale level. Given that regulation is generally in place at the wholesale level in most Member States, this may imply that NRAs will hypothesise likely market effects absent regulation. In undertaking this analysis NRAs will also, for the reasons given in section 5, need to take into account possibilities for demand side substitution at the

³⁰ See BEREC Report on self supply, BoR (10) 09

retail level which may accommodate direct demand side substitution at the wholesale level.

- Indirect constraints

108. Demand side substitution effects may also occur indirectly if some marginal retail customers see a more basic, but cheaper broadband service as a close substitute for a more sophisticated but more expensive version. In this case, where enough marginal retail customers can switch to a cheaper basic version in response to a SSNIP of a more sophisticated WBA product, there is demand side substitution at the retail and hence wholesale level which could potentially render the wholesale SSNIP unprofitable.

109. NRAs will need to assess the strength of any such indirect constraints³¹. It may be the case for example that a hypothetical wholesale price increase will not be passed-through to the retail level due to *inter alia* the fact that the wholesale input costs form only a small portion of business retail prices.

- Chain of substitution

110. Moreover it is possible that a chain of substitution exists among WBA products of different prices and qualities. Services which are not obviously close substitutes may form demand side substitutes for each other through the chain substitution effect indicating that they belong to the same relevant market. Effects may occur directly or indirectly. For example, increases in quality or price reductions in wholesale broadband services designed for residential use could increase demand for lower end specification business broadband services, which in turn may affect demand for higher end specification business broadband services.

111. On the other hand, standard broadband offers might not satisfy the demands of certain customers. Where a sufficient number of such customers do not substitute in response to a SSNIP by a hypothetical monopolist, such that the SSNIP is profitable, this is an indicator for a narrower market definition. For example the dedicated capacities and reliability of leased lines mean that NRAs generally exclude their substitution with xDSL services and so define separate markets. In this case a break may be observed in the chain of substitution in broadband markets. In such circumstances, all other things being equal, it may be relevant to split the wholesale broadband market into different relevant markets according to the factors that are defining the break in the chain of substitution absent any effective supply-side constraints.

Supply side substitution

112. We note that the option of self supply of WBA products by vertically integrated existing operators is in principle an important form of supply-side substitution, with implications for market definition. This issue is covered by BEREC's March 2010 Report on Self Supply³² and so we do not consider it further here.

113. Concerning the wholesale markets, in assessing supply-side substitutability, we note that residential and business services are essentially provided over the same infrastructure. As such, a "pure" residential operator could in principle offer business wholesale services without significant network build and so offer supply side

³¹ See BEREC Report on self supply, BoR (10) 09, as well as the reference to the Commission position and article 7 cases referred to in footnote 25.

³² See http://www.erg.eu.int/doc/berec/bor_10_09.pdf

substitution possibilities in response to a SSNIP of WBA products by a hypothetical monopolist in the provision of services to high end business customers.

114. This possibility may be influenced by a number of factors, such as the fact that operators may have to design and invest in their network to provide for the specificities required by any decision to supply substitutes. For example in moving to provide WBA services for the business segment such as traffic prioritization, capacity guarantees or reliability, operators may require additional and skilled staff, or need to upgrade transport infrastructures in order to assure contractual quality levels. These processes may take time.
115. Hence in assessing the degree to which there may be supply side substitution at the wholesale level, NRAs will need to have regard to factors such as the necessity of undertaking additional investments, the existence of additional operational or hidden costs, the degree to which economies of scale are relevant, and the timescales over which substitution might occur.

Wholesale market definition: Case studies

1. Provided below are a number of case studies that highlight the different approaches that NRAs have adopted when dealing with the business segment at wholesale level. All of the case studies referred to below pertain to market 5 of the 2007 EC Recommendation (wholesale broadband access (WBA) market). It should be noted that RTR's latest market 5 analysis (Case AT/2009/0970) is not specifically considered here, as in its market review the focus of the Austrian NRA was not specifically on the issue of high end business services, but on the distinction at the retail and wholesale level between the residential and the business markets generally.

The Netherlands

2. In its latest market 5 analysis², OPTA arrives to the conclusion that wholesale bitstream access consists of two separate relevant product markets, the distinguishing feature between the two markets being the overbooking factor. According to OPTA, products with an overbooking factor higher than 1:20 belong to the high-quality WBA market, while products with an overbooking factor lower than 1:20 belong to the low-quality WBA market.
3. While in both markets KPN is deemed to have SMP, the remedies imposed in the high-quality WBA market are more stringent, including among other WBA access over KPN's fibre network and cost orientation for both copper and fibre access.

Spain

4. In its market 5 analysis³, CMT acknowledges that electronic communications operators that provide services to the business segment may face different competition constraints than those faced by operators focussing on the residential segment, due to factors such as the existence of bespoke deals or the need to satisfy the specific requirements of large business customers. According to CMT, such particular features are however not sufficient to conclude that at wholesale level, residential and business broadband access belong to different markets, mainly due to supply-side substitutability.
5. In any event, CMT notes that the specific needs of electronic communications operators that provide services to the business segment may be taken into account in the delineation of the specific wholesale remedies (e.g. in terms of guaranteed quality or coverage).

United Kingdom

6. Ofcom is currently in the process of reviewing the wholesale broadband access market. In its consultation (dated 23 March 2010) Ofcom considers that retail residential broadband access is part of the same market than retail business broadband access (be it "standard" business products or "higher quality" business products).
7. At the wholesale level, Ofcom also arrives to the conclusion that there should be no distinction between business and residential broadband access services, mostly due to supply-side considerations. According to Ofcom, factors such as the fact that the wholesale input and the underlying costs necessary to support the provision of asymmetric broadband internet access services to business and residential customers are essentially the same; the lack of a clear differentiation at wholesale level between services targeted at business and residential customers; or the fact that distinguishing features such as the "service wrap" around the business service are inputs that are rather downstream to the wholesale broadband access level, support the conclusion that at the wholesale level residential and business broadband access pertain to the same product market.

²Case NL/2008/0827

³Case ES/2008/805

6.4. Geographic market definition

6.4.1. Introduction

116. To the extent that the evidence and analysis regarding product market definition pointed to a particular product market, it would, as set out in section 4.2, also be necessary to define the relevant geographic market or markets. It is possible that a number of separate geographic markets may be found. From the point of view of high end business services and issues that have been raised by respondents to BEREK's consultation, any finding of a separate product market (at the retail or wholesale level) and geographic markets could have implications for determining whether particular operators are found to have SMP in particular geographic areas and whether or not remedies on a geographically distinct basis may be appropriate.
117. As section 4.2 notes, evidence and analysis to be gathered in respect of geographic market definition will need to reflect possibilities and likelihood for demand and supply substitution from one geographic area to another, in response to a relative price increase by a hypothetical monopolist. This holds true both for the retail and wholesale levels. This analysis is relatively complex, it being understood that *"the relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different"* (see paragraph 56 of Guidelines).
118. BEREK has already extensively considered the question of geographic market definition in relation to telecommunications services, in particular the question of geographical segmentation of market definition and remedies. Our view is given in the BEREK Common Position on Geographic Aspects of Market Analysis (definition and remedies)³³. Nevertheless we set out below the evidence and analysis that NRAs may consider in order to focus on the differences that could arise given the definition of a separate market for high end users³⁴.

6.4.2. Evidence and analysis

³³ ERG (08) 20 final CP Geog Aspects 081016.

³⁴ The issue of high end users was covered in the Common Position:

"A point which has been subject to discussion in the wholesale broadband access market was the (geographical) nature of demand: Demand might be local like demand of a single consumer for broadband internet access or might cover several locations at the same time like demand of multi-site businesses. ERG is of the opinion that if the available evidence suggests that demand (and possibly also derived demand at the wholesale level) of business users is different to the demand of residential users and there is no sufficient supply- or demand-side substitution between these services, the NRA should define a separate product market for business or high quality connections. Alternatively, if there is evidence of sufficient supply- or demand-side substitution between these services then the NRA should define a single product market including residential and business/high quality connections. If a separate market for business or high quality services is defined, it may be the case that because of differences in demand patterns it be appropriate for the NRA to define the geographic scope of the business orientated market as geographically broader than the geographic scope of the residential orientated market. However, if retail demand of businesses is found to be national in nature, this does not automatically mean that also (derived) wholesale demand is national. The NRA will therefore have to carefully assess the nature of wholesale demand for each market separately"

119. The prior consideration of the product market will be an important starting point and input to the question of geographic market definition. For example, if an NRA has concluded that there are two different product markets, the geographic scope of each could differ in ways that reflect the reasons for the differences in product market definition. On the other hand, if an NRA defines a unique market for both types of customers, their demand patterns in geographical terms are more likely to be common.
120. Evidence and analysis at the retail level will also need to involve a consideration of the geographic area or areas in which the product in question is mainly traded, and how customers and prospective providers may react to a SSNIP.
121. Evidence of demand side substitutability will include an assessment of the extent to which an end user is able or willing to switch provider at another geographic location in response to a SSNIP in the product under consideration. Given the fixed nature of telecommunications services, this will in general be unlikely.
122. Evidence of supply side substitutability possibilities at the retail level will include the geographic scope of relevant alternative infrastructure. A geographic area with alternative infrastructure providers for example could provide CPs opportunities to access alternative wholesale products and so substitute on the supply side. The scope for this may depend *inter alia* on the underlying economies of scale and/or density for alternative network build or on remedies or regulation adopted at the wholesale level, and whether and how these differ geographically.
123. Any evidence concerning common pricing and homogeneity in competition conditions across an area or areas will also be relevant, as noted in section 4.2. In particular, differences in structural and behavioural competitive conditions could be relevant for the NRA to reach a final conclusion on geographic market definition.
124. One useful indicator could include the extent to which operators providing WBA either via their own infrastructure or ULL infrastructure could provide a competitive constraint in different geographic areas. It may be the case for example that where the wholesale product market is held to be narrow and so limited to high end business products and services, providers of these products and services may have limited scope to develop their own or ULL infrastructure. This might be because, for example, such providers have a small and geographically dispersed customer base which makes it difficult to reap the benefits of economies of scale in any one location or exchange.
125. Regarding the impact of ULL for the provision of WBA, the number of potential customers is essential in the decision by an alternative operator to reach or not a particular local exchange. As it has been already stressed by ERG³⁵, an alternative operator will use ULL instead of bitstream only if it can ensure a minimum number of customers. In a wide range of local exchanges, this threshold may be achieved considering residential customers, but it may be less feasible if potential demand is reduced to business customers.

6.5. Product and geographic markets: multi-site demand

126. Demand for telecommunications services by large customers demanding services for use at multiple sites can provide a particular illustration of the issues

³⁵

http://www.erg.eu.int/doc/publications/erg_09_21_erg_report_on_price_consistency_in_upstream_bb_markets_090603.pdf

associated with defining product and geographic markets in the context of high end services. At the retail level, we may see a large undertaking seeking a multi site deal from a single CP. The sites in question may be in one or more Member States. The scope for demand side substitution for this precise kind of service may be limited; it may be the case that customers for this kind of service would not or could not substitute in sufficient numbers to other kinds of services, in response to a SSNIP. This would tend to indicate a narrow product market. On the other hand, where CPs are able to interconnect geographically dispersed WBA providers and so provide alternative but similar products on a suitably multi site basis, or where retail customers are willing to multi-source products from geographically separate CPs, this would point to possibilities for demand side substitution and a wider product market. On the supply side, there might be scope for substitution by a provider already producing a similar product (e.g. a residential or business broadband product) in the geographic areas under consideration (ie. in areas where there is multi-site customer demand). If this were so, it would suggest that the product market could be widened. Where providers could shift production to the geographic areas under consideration, this would also be an indicator of a wider relevant geographic market. In both cases it would be relevant to assess supply side substitution possibilities in terms of for example the likelihood of a CP being able to achieve relevant economies of scale in a new area or set of areas or to supply the product in question, or whether there are other barriers to a CP being able to supply a particular product in a particular place.

127. Absent other considerations, this situation may suggest the possibility of defining a transnational market according to the procedure defined in article 15.4 of the Framework Directive³⁶. However it is not clear to what extent the demand and supply substitution possibilities in this situation differ from those faced by national business operators. Difficulties accessing or substituting between upstream and wholesale services such as LLU could be seen as being very similar in both cases. Thus, assuming a consistent set of obligations, adequate to national circumstances, in the terms described above, could also be a relevant solution for those cases where the final customer of the operator demands a large multi-site service.

7. Conclusions

128. This report has set out the issue of relevant market definition for business services and in particular the question of high end business services. We have recalled the Commission's principles for market definition and set out how what evidence and analysis these would imply for determining the extent to which high end business services may or may not be held to constitute a separate product and geographic market at both the retail and wholesale levels. We suggest that the first step of any analysis should be an assessment of the retail level.
129. It is worth highlighting that any findings regarding market definition will depend on the specific circumstances of the case, and should be determined through appropriate consideration of market definition and analysis principles as applied in a national context. The purpose of the present report is thus not to reach definitive conclusions on the inclusion or exclusion of high-end business services from the relevant product market or the precise scope of the relevant geographic market, but to provide guidance which may assist NRAs in their market. This report reflects the

³⁶ Directive 2002/21/EC of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive), as last revised by Directive 2009/140/EC

importance that BEREC attaches to the high end business segment, and acknowledges that the specific issues pertaining to this segment may be worth considering, on the basis of national circumstances, either at the market definition or at the remedies stage.

130. The table below summarises the main sets of evidence we have discussed in this report that would tend to suggest that there is or is not a separate product or geographic market for high level business services:

	PRODUCT	GEOGRAPHIC
ONE MARKET <u>ie. Evidence that the market is broad and includes high end business services</u>	<p>Retail</p> <ul style="list-style-type: none"> • Presence of direct demand side substitutability between business and/or residential products, eg. Evidence of WBA supplied to business operators with suitable SLAs and coverage • Presence of demand side substitution via chain of substitution • Evidence of supply side substitution • Further supporting evidence concerning homogenous competitive conditions and common pricing constraints. <p>Wholesale</p> <ul style="list-style-type: none"> • Direct substitution available at wholesale level • Indirect substitution available at retail level 	<ul style="list-style-type: none"> • Evidence of possibilities for demand side substitution • Evidence of possibilities for supply side substitution, such as: <ul style="list-style-type: none"> • Likelihood of alternative providers investing in LLU • Effective access to LLU.
TWO MARKETS <u>ie. Evidence that there is a separate relevant market for high end business services</u>	<p>Retail</p> <ul style="list-style-type: none"> • Lack of evidence of demand and supply side substitutability <p>Wholesale</p> <ul style="list-style-type: none"> • Separate retail product market for high end retail business services is held to exist • Lack of evidence that direct and indirect constraints sufficiently constrain pricing by hypothetical monopolist in supply of wholesale products necessary to supply retail providers 	<ul style="list-style-type: none"> • Lack of evidence for possibilities for demand side substitution • Lack of evidence of possibilities for supply side substitution, such as: <ul style="list-style-type: none"> • Low likelihood of alternative providers investing in LLU • Ineffective access to LLU.