CHAPTER IV

GUIDING PRINCIPLES FOR IDENTIFYING CANDIDATE MARKETS

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I. KEY ELEMENTS OF MARKET ANALYSIS FOR *EX ANTE* PURPOSES

Pursuant to the methodology outlined in Chapters I-II and the description of the technological capabilities of different delivery platforms in Chapter III, the Study Team intends to perform a series of relevant market analyses in Chapters V-VII, the results of which should provide a preliminary insight into the markets which are inherently most likely to warrant an "effective competition" analysis under the draft *Framework Directive*. In many respects, the performance of such an analysis is more instructive as part of an appraisal of whether existing *ex ante* regulation should be lifted under a forbearance policy, rather than an *a priori* assessment of all relevant markets in the communications sector.

Regardless of its limitations, including the absence of complete and accurate empirical data, the aim of the Study Team's analysis will be to identify those relevant product markets (and their geographic dimensions) which might warrant *ex ante* regulation. An analysis of whether *ex post* application of competition rules is less capable of addressing the competition concerns arising, whether because of the time required to resolve an individual complaint, the lack of effectiveness of certain competition law remedies or the need to address recurring structural problems in the communications sector (rather than individual, fact-specific cases of behavioural abuse) will be a major element of the analysis to identify such relevant markets.

In conducting its *ex ante* market analyses, the Study Team will be guided by the following key principles:

Principle 1	***It is important to explore the relationship between the different functional levels of competition at the wholesale and retail levels.***

In determining the appropriateness of *ex ante* regulation, NRAs should explore the relationship between different functional levels of competition, especially in terms of:

- The understanding that the shape of retail offerings will usually have a significant bearing on the scope of the wholesale inputs which are or should be available in the marketplace to facilitate the development of effective competition at the retail level. However, for a variety of reasons, wholesale inputs might not map exactly onto specific retail offerings (*i.e.*, a number of wholesale inputs are likely to be necessary for the provision of a retail service, and any or all of those wholesale inputs are likely to be necessary inputs for other retail services). This is especially the case with broad wholesale inputs such as "interconnection" and "dedicated capacity", which are relied on to provide a broad palette of retail communications services.

- The working presumption that, unless there is a disconnect between the wholesale and retail levels of competition, the policy goal of achieving a "light touch" and "proportionate" *ex ante* regulatory framework is most effectively achieved by limiting regulation to the wholesale level. This might not be appropriate, however, where there appears to be a market failure such that there is no functioning wholesale market and competitors and end users are forced to acquire the same services on the same terms. It appears that this may be the case in many Member States in relation to the supply of

particular types of leased lines.

- The acknowledgement that highly competitive retail markets can, in principle, lead to competitive corresponding markets at the wholesale level, subject to the caveat that the nexus between the two functional levels of competition may be weaker where retail customers are relatively price insensitive to certain types of charges, where the wholesale inputs in question are characterised by certain bottleneck qualities (which may be the case with call termination), or where the very general nature of the wholesale inputs (*e.g.*, "interconnection") renders any link to more specific retail service tenuous.

  The interrelationship between the wholesale and retail levels of competition is one particular example of a relevant market analysis which takes into account the broader competitive constraints, going beyond an assessment of mere short term substitutability considerations. Indeed, the European Court of Justice in *Michelin* noted that "*an examination limited to the objective characteristics only of the relevant products cannot be sufficient: the competitive conditions and the structure of supply and demand on the market must also be taken into consideration*" (emphasis added). The Commission reiterates this view in its 1991 *Telecom Guidelines.*

  Accordingly, the Study Team considers that the "commercial realities of the market" must be taken into account in the market definition exercise, particularly in light of the nature of the communications sector (*e.g.*, the provision of multiple services over a single platform, the disequilibrium between sunk and incremental costs, and the relationships between the various technologies within networks). It is also important to consider the different types of wholesale fixed services, ranging from facilities owned, operated or entirely controlled by the operator, to capacity (rather than facilities) so owned and controlled, and ultimately, to services acquired for onward supply as some form of retail service.[1]

Principle 2	***There is a need for the greater aggregation of markets for ex ante regulatory purposes.***

More aggregated market definitions for *ex ante* purposes are justified, in particular because:

- A narrow product market definition is more appropriate for *ex post* intervention, especially because competition regulators have the benefit of identifying the parameters of the relevant market in the context of particular identified abuses or a particular anti-competitive arrangement, and because competition rules can be relied upon to address instances of leveraging of market power into related or neighbouring markets. In particular, competition rules are best used to address "virtual" or nascent markets (usually at the wholesale level) which might arise from an existing local access monopoly.

- Where relevant markets for *ex ante* purposes are defined more broadly, the growth of bypass alternatives or new technology which has an explosive effect on current patterns of supply and demand will lead to movement at the margins of the relevant product markets. As a result, there is less likelihood that the relevant market addressed will be subject to dramatic change in very short periods of time.

[1] See *FT/EQUANT* Case No. COMP/M.2257.

- An aggregated market approach provides a more realistic appraisal of market power in a forward-looking context.

- It is important to ensure that market definition analyses in the communications sector, with its alternative platforms and service offerings and explosive growth, take into consideration all potentially substitutable services, including those that may act as chain substitutes.

- Care should be exercised in segmenting markets for *ex ante* purposes on a business/residential basis, largely because it can be difficult to identify valid, clear and sustainable criteria to separate non-homogenous customers in this way. While such an approach may result in the lifting of regulation from some retail services in some Member States (possibly in a highly fragmented manner), it is unlikely to affect the scope of the related wholesale services required to provide the retail services. As the Study Team has noted, it believes that *ex ante* regulation should principally focus on the wholesale level.

- While care should also be taken not to aggregate markets simply because services are provided in packages or bundles, market definition analyses need to be sensitive to the relative costs and convenience associated with the purchase of 'clusters' of services, which can result in the provision of individual services within the cluster becoming commercially unattractive (*e.g.*, mobile retail services).

Principle 3	***The identification of relevant markets for ex ante purposes should apply traditional principles of competition law, subject to a number of changes in emphasis, consistent with the dynamics of the communications sector.***

The key elements of an analysis for *ex ante* purposes which should depart from a more static *ex post* analysis are as follows:

- The ***Hypothetical Monopolist Test*** will be used as a reference point for analytical purposes, although its limitations will also be taken into account by the Study Team, given the existence of multiple substitutable services (whether provided by the same or different operators), the development of "barter" payment systems (*e.g.*, peering) and the relative lack of historical reference points (at least in terms of pricing) for many relatively new markets. Great care will be taken to ensure that the test is applied to identify the effects on marginal users of the charges contemplated by the hypothetical monopolist. The difficulty in identifying "marginal" subscribers and quantifying the effects of change on their behaviour are important additional limitations.

- ***Supply-side analysis*** will be incorporated by the Study Team into its appraisal of relevant product markets, rather than in the analysis of market power. It is felt that this approach is justified under the case-law of the European Courts, and is more sensitive to a market definition exercise which may lead to the imposition of *ex ante* regulatory obligations, which have the potential to skew market conditions and development.

- The acknowledgement that ***existing regulatory obligations*** may have had, and be having, an effect on the shape of "markets" which, in the absence of those regulatory measures, might have developed very different patterns of supply and demand. It is particularly important to note that the market definition process may yield very different results

depending on whether the price assessed is a prevailing market price or a "competitive price" (where the former may have been affected significantly by regulatory intervention).

- In the rapidly evolving communications sector where new services are constantly being introduced and existing service offerings modified in ways that affect demand for those and substitutable services, it is not appropriate to impose *ex ante* regulatory obligations on **embryonic** services. In such circumstances, it is difficult to identify demand for such services and their substitutes, let alone identify stable pricing and other indicia that are necessary parts of market definition. *Ex ante* regulation of embryonic product markets would run the significant and disproportionate risk of distorting market signals and development.

Principle 4	***The principle of technology neutrality requires that services be regulated in a comparable manner, irrespective of their means of delivery.***

A thorough legal and economic market analysis based on competition rules should, under the regulatory framework, aim to be "technologically neutral"; namely, the rules should neither impose obligations on, nor discriminate in favour of, the use of a particular type of technology.[2] In a relevant markets analysis, the concept of technology neutrality essentially amounts to a requirement that a full analysis under competition rules, considering all potentially substitutable platforms, be conducted. The principle requires that the same regulatory questions be asked in relation to potentially substitutable platforms to determine whether and to what extent they are substitutable. By asking the same questions of all potentially substitutable platforms, it is possible to determine "how" and "why" they differ, in the course of a substitutability analysis.

Care must be taken not to misconstrue the technology neutrality principle as requiring that all platforms be blindly treated in the same way. The principle implicitly requires that appropriate account be taken of, and weight given to, the differences between platforms which may derive from technological, economic (*e.g.*, linked to scale and scope), standardisation (or interoperability), commercial (*e.g.*, time from entry to market) or historic regulatory factors. It requires that the same regulatory questions be asked in relation to potentially substitutable platforms to determine whether and to what extent they are fully substitutable, so that one can determine "how" and "why" the appropriate regulatory response should differ.

Principle 5	***As a result of the inherent link between the separate processes of market definition and market power assessment, the approach adopted in relation to key issues must be consistent in both contexts.***

Because of the close link between issues of market power and market definition, it is a common error to rely on certain types of commercial indicators as being determinative of either market definition or market power issues, while failing to consistently maintain those distinctions. Whereas such an approach can be more easily accommodated under the analytical frameworks of Article 82 EC and the *Merger Regulation*, it is less appropriate in

[2] *Adapting the EU Regulatory Framework to the Developing Multimedia Environment*, Study for the European Commission DGXIII/Squire, Sanders & Dempsey LLP, January 1998.

the context of *ex ante* regulation. Examples of issues with respect to which a consistent analytical approach needs to be taken are:

- ***One–way substitution***. The traditional substitutability test, which is based on the "functional interchangeability" of products or services, presumes that substitution will be occurring both ways in the market definition analysis, whereas its one-way effect can be highly material to a market power assessment (*e.g.*, some customers might substitute mobile for fixed for their voice calls, but not *vice versa*).

- ***Partial substitution***. This occurs where some consumers of a service find that it serves part or all of their needs in a particular market under certain circumstances. Competition regulators should take partial substitutes into account in assessing market power, but have at times been inconsistent, in considering partial substitutes when conducting a market analysis.

- ***Individual networks as markets***. It is arguable that the appearance of market failure in relation to certain types of wholesale services is linked, at a particular point in time, to the bargaining power of an operator or operators relative to its/their customers, rather than being the key defining factor in market definition. Accordingly, care needs to be taken to maintain the appropriate distinction between relevant market and market power analyses; the alternative would be the identification of a series of very narrow relevant product markets, which are arguably best addressed by an *ex post* investigation, unless there is no appropriate *ex post* remedy.

- ***Vertical integration*** is a commercial phenomenon which, although affecting the competitive dynamics of a market, is more relevant to the issue of market power than market definition. However, over time, evolving value chains may stabilise so that certain markets become synonymous with the provision of services by vertically integrated firms, at a given point in time. It is important that NRAs identify historical shifts in value chains.

Insofar as the process of market definition and the assessment of market power constitute distinct analytical steps in the *ex ante* process, it is essential to differentiate between whether issues such as those listed above contain elements of only one step, or whether they contain elements of both. In the context of the *Merger Regulation*, by way of contrast, the analytical steps can become blurred – *i.e.*, a narrow approach to market definition can be counterbalanced by a broader understanding of market power (*i.e.*, a margin of error at the first stage of the analysis can be counterbalanced effectively later).

In the *ex ante* regulatory context, the appropriate policy balance can arguably be stuck through the adoption of a policy of proportionate remedies which progressively reflect competition law rather than sector-specific standards (especially where markets are defined very narrowly).

Principle 6	***The market definition exercise should facilitate the prediction of any enduring market failure capable of occurring in a potential relevant market.***

The identification of relevant markets is only meaningful if it provides the means to identify market power, which in turn is the cause of particular types of market failure. This underlying "end result" approach which is key to understanding that the process of market definition will never be an abstract exercise (*i.e.*, the process is both too time-consuming and difficult to

perform without a clear understanding of why any given set of market dynamics warrant such analysis).

Potential enduring market failure should be identified within the following framework:

- The Study Team does not believe that a sector characterised by explosive technological/commercial change and innovation, such as the communications sector, is susceptible to analysis against a static model of perfect competition. Accordingly, the Study Team will seek to identify actual or potential market failures in terms of the criteria advanced by theories of imperfect competition, namely:

    - ***market structure*** (in terms of concentration, vertical integration and barriers to entry);
    - ***market conduct*** (in terms of restrictive, predatory and exclusionary practices); and
    - ***market performance*** (in terms of technical efficiency, satisfaction of consumer needs and monopoly profits).

  These elements are all relevant to an assessment of market power – not to the issue of market definition. However, given the close links between issues of market power and market definition, and the fact that the existence of market power renders markets more prone to market failure, the Study Team will rely on these traditional antitrust economic criteria in appraising which markets might be most prone to market failure. In doing so, we will not to presume a direct link between market structure, conduct and performance, and to take due account of the fact that the economics of communications networks render generalisations about matters such as profitability extremely problematic.

- In particular, the potential for market failure to endure can be seen as a likely by-product of ***rational economic behaviour*** (*e.g.,* profit maximizing, exclusionary supply) which takes advantage of peculiarities in network-based markets which render customers fairly price-insensitive (*e.g.,* termination prices in light of the effects of certain network externalities), or the leveraging of ***historical incumbency*** and a local access monopoly (*e.g.*, local loops, short-haul leased lines).

- It is also important, when considering communications markets, to consider whether they are truly "innovative". Similarly, whether competition occurs in or for the market is a matter that needs thorough investigation. It is also important to consider the extent to which exclusionary behaviour, both in relation to current and future markets, remains possible in truly innovative communications markets, given the opportunities for leverage and foreclosure of access to essential inputs that may be possible in particular potential communications relevant markets.

The mere identification of potential market failure is not conclusive as to whether a relevant product market exists for *ex ante* regulatory purposes. A deeper understanding of the sources of that potential market failure, requiring an assessment of network dynamics and competitor interaction, is necessary. Where that assessment concludes that potential market failure is most likely to occur because of structural characteristics of the particular market, rather than as a result of individual instances of abusive strategic behaviour, ***ex post*** **competition remedies** may be less effective.

Principle 7	***A state of effective competition is increasingly likely to occur the further one radiates away from the local access monopoly of the fixed network.***

Historical experience and marketplace evidence suggests that, in the fixed line sector, competitive bottlenecks are least likely to arise in those markets or market segments which are furtherest from the key monopoly asset of a fixed incumbent – its **local access network**. There is no equivalent competitive bottleneck issue for local access on mobile networks, because individual mobile networks face competition from other mobile operators with comparable coverage.

With the exception of those Member States characterised by significant alternative infrastructure competition (usually in the form of digitised bi-directional cable TV networks), residual market power resides in the ownership of the fixed local access network. That market power can be leveraged into adjacent or neighbouring markets. However, the further one radiates from this local access monopoly, the greater the likelihood that market conditions are more conducive to competitive entry. Product markets such as dedicated capacity offerings at the local level (*e.g.*, leased lines tails) and direct access to end users (through unbundled local loops) continue to be problematic because of their inherent link to local access networks.

Principle 8	***Although the process of market definition is identical for all relevant product markets across all Member States, there may exist significant Member State variations in the existence and scope of relevant markets***.

The use of a common methodology to identify relevant markets does not negate the fact that differences in the existence and scope of relevant product markets may occur across Member States, particularly because of factors such as:

- The rollout of alternative infrastructure (especially digitised bi-directional cable TV networks, which have relatively high penetration rates in some Member Sates but are virtually non-existent in others), which will not only be relevant to whether or not certain services relying on local access are competitive, but will also be relevant to issues such as the scope for chain substitution.

- The imposition of certain types of regulatory obligations (*e.g.*, the effect on origination services of indirect access and number portability policies).

- The particular network architectures employed by PSTN operators (which will have an effect on the extent to which competition develops at various levels of the network architecture.)

- Factors such as the total size of the Member State economy, revenue projections per customer and demographic characteristics (which will have a significant effect on the attractiveness of market entry in any given Member State for particular types of services, or services addressed to particular customer segments of the overall market), will play a key role in the fashioning of the apparent competitiveness of certain product markets.

Principle 9	***The geographic reach of communications services need not be synonymous with the relevant geographic market where those services are provided.***

Because the relevant geographic market is *"the area in which the objective conditions of competition applying to service providers are similar"*, and not merely the geographic area in which competitors are able to offer their services, care must always be taken to ensure that the geographic market is properly identified. As a general rule, most markets at the wholesale level will be national in scope, regardless of whether the ultimate retail services are consumed locally (*e.g.*, wholesale access to unbundled local loops is usually required across a national territory, even if any given particular loop is – by definition – related to a specific geographic location). Similarly, even though mobile roaming services are "consumed" outside the geographic territory of the operator of the mobile user, the relevant geographic market remains the territory in which the mobile operator is licensed (primarily because of the existing price differentials and the loss of functionality across borders).

In both the fixed and mobile sectors, the principle drivers in the expansion of markets beyond national territories are the commercial priorities of business customers (*e.g.*, one-stop-shopping, global reach, discounts over total international purchases). In addition, the need for universal connectivity in the world of the Internet and the commercial necessities of the need to achieve economies of scale for certain types of operations also provide greater impetus for broader geographic markets.

Principle 10	***Consideration must be given to the nature, proportionality and prescriptiveness of ex ante regulatory measures to be imposed.***

The assessment of relevant markets and market power requires a delicate balancing process, to ensure that the effects of very narrow market definitions are not exacerbated in an *ex ante* context by a market power assessment which misconstrues some of the characteristics of the communications sector as providing evidence of a lack of effective competition (*i.e.*, the existence of one or more operators with SMP on a relevant market). For example, markets with very high sunk costs and low marginal costs are likely to be highly concentrated, to involved a significant degree of price discrimination and to exhibit high margins. Care will need to be exercised in the *ex ante* context to ensure that the natural consequences of the cost structure of communications industries are not taken as indicating bases for genuine competition concerns.

Arguably the most sensitive policy balance in this context can be struck through the development of remedies that are proportionate to, and tailored and appropriate for, the perceived likely market failure identified by the application of the two-pronged relevant markets/ market power model. Those remedies should themselves not skew future market developments or likely competitive market outcomes (whether through unnecessary prescriptiveness or otherwise), and should produce, together with the relative breadth or narrowness of market definition and the assessment of market power, a balanced approach to the *ex ante* regulation of any given relevant market. Whether that balance favours productive efficiencies over allocative efficiencies is a matter which will depend, in part, on whether the latter type of efficiencies will also, over time, be considered to play an important role in merger analysis.

II. ENTRY BARRIER ANALYSIS AS THE BASIS FOR *EX ANTE* REGULATION

Having identified a series of relevant product markets that are susceptible to an "effective competition" analysis, the task remains to put forward a cohesive theoretical platform to guide regulators as to the rationale for justifying *ex ante* regulation.

Given that the principal policy goal of *ex ante* regulation is the removal or amelioration of market failure, there will always be those who will contend that many if not all forms of market failure (regardless of whether a given product market is found to be not "effectively competitive" at a given point in time) can be addressed over time by market forces themselves. This approach, however, presumes that all markets are effectively "contestable". Markets will be contestable, and market failure should be left to be addressed by the market itself, if the relevant markets in question are not characterised by insurmountable entry barriers. Accordingly, the Study Team takes the view that the nomination of relevant markets for *ex ante* regulation ("Candidate Markets") should be based on a comprehensive understanding of whether entry barriers are of such significance as to render the particular market in question as unlikely to be characterised by effective competition in the absence of *ex ante* regulation. Our understanding of the manner in which the contestability of markets should be appraised follows below.

II.1 THE KEY ELEMENT OF EX ANTE ANALYSIS: BARRIERS TO ENTRY AND CONTESTABILITY

The existence of non-transient barriers to entry represents the main obstacle to the development of effective competition. A barrier to entry can be defined as a restriction on entry into the market which has the effect of allowing firms already in the market to charge prices above their otherwise competitive levels while not attracting new competitors. In the absence of barriers to entry, even the behaviour of a dominant firm can in theory be effectively governed by the threat of competition; the universally acknowledged lesson to be drawn from contestability theory is that, under certain conditions, the threat of entry will force even a dominant firm to price at levels which ensure both efficiency in production and competitive pricing.

For our purposes, we are concerned with barriers to entry which justify *ex ante* regulation. This implies that:

- they should be sufficiently high to merit this particular form of regulation, bearing in mind that almost all industries exhibit some form of barrier to entry, without the corresponding need for *ex ante* regulation; and
- they are of the kind which warrants being addressed through *ex ante* regulation and which cannot effectively be addressed through alternative means, such as direct action to reduce or to remove them, or through the application of competition rules in specific cases.

Unfortunately, there is neither a universal metric for the comparative measurement of the height of all kinds of barriers to entry, nor a complete understanding of all the factors that can operate as entry barriers. In some cases, where the barrier to entry is absolute, its height is infinite. In other cases, judgements have to be made which can be informed by calculations.

For example, if the barrier to entry arises through the existence of a scale economy, the extent of this scale economy can be measured (*e.g.*, in the form of a cost volume elasticity). As far as the choice of the appropriate regulatory response is concerned, *ex ante* regulation is most appropriate where it performs better than other responses. This is likely to be the case where a barrier to entry cannot be reduced or removed by other means, where the source of the barrier to entry is durable and persistent and where the probability of detriment to consumers, in the absence of intervention, is high.

On the basis of these criteria, certain entry barriers have been proposed with the characteristics identified above, with another form of entry barrier being seen as an element which strongly reinforces the effects of either of the first two forms of entry barrier. Other forms of entry barrier are not regarded as material for our purposes. In all cases, a high level of barrier to entry should usually be required to warrant *ex ante* regulation. Moreover, while high entry barriers are a necessary precondition to regulation, they should not be sufficient of themselves to warrant *ex ante* regulation **unless and until** an effective competition analysis has already reached negative conclusions. A conclusion as to the effective competitiveness of any given relevant market depends, among other things, on the number of firms operating behind the entry restrictions. However, even two mobile operators may compete relatively vigorously, especially during the phase when the second operator is trying to take market share from the first mover. Moreover, the likelihood of effective competition increases with the number of operators, particularly where there are low barriers to expansion. There is ample evidence of new firms entering markets that have high entry barriers.

Customer inertia, of itself, is not an adequate basis for *ex ante* regulatory intervention. These types of concerns are best addressed through various informational and educational measures which NRAs can undertake. It may be otherwise, however, if it is significant switching costs which prompt the customer inertia. There are two types of switching costs – exogenous switching costs arise from external factors, while endogenous costs result from the firm's behaviour – *i.e.*, they are "artificial". As such, the latter is a cost resulting from the (potentially abusive) conduct of the operator imposing the costs.

II.2 BARRIERS TO ENTRY JUSTIFYING INCLUSION AS A CANDIDATE MARKET

These arise when there is an absolute barrier to entry in the industry. Such barriers can take one of two forms: (a) legal or technical; or (b) regulatory. Moreover, absolute entry barriers can, in theory, also arise from scale-related operating requirements in particular circumstances. Where, however, these scale-related barriers co-exist with legal, technological or regulatory barriers, their net effect can act as an absolute barrier to market entry.

II.2.A. Legal and Technological Barriers

Legal barriers might take the form of a requirement that firms have a licence in circumstances where additional licences are not available. Alternatively, there may be a legal limitation on the availability of a particular input which is necessary to produce a relevant electronic communications service. These two considerations come together in the case of wireless technologies, for which operators require both a licence and access to spectrum. As a consequence, entry by network providers into wireless (fixed and mobile) markets is

effectively blocked, unless the practice of secondary trading of spectrum becomes possible.

A legal barrier to entry of this kind should not be sufficient, of itself, to justify the conclusion that the market requires an assessment as to whether or not it is effectively competitive. The level of competition depends, among other things, on the number of firms operating behind the entry restrictions. For example, even two mobile operators may compete relatively vigorously, especially when the second operator is trying to take market share from the first mover. Moreover, the likelihood of effective competition increases with the number of operators, in particular where there are low barriers to expansion.

Consideration has to be given to whether legal barriers to entry can be removed. For example, in recent years, competition has been facilitated by changes relating to operators' rights to undertake the civil works necessary to construct their networks and gain access to numbers. The legal barrier to entry in relation to wireless operators can, in principle, be alleviated in part by changes in spectrum assignment (and the ability to trade spectrum), thereby allowing greater economic efficiency and lowering entry barriers. In summary, legal barriers to entry will justify inclusion as a criterion by which to identify Candidate Markets, when they are expected to continue to operate, unless a significantly large number of operators is already sheltering behind the barrier to entry (so as to ensure effective competition).

As regards **technological barriers**, these occur where the provision of the service requires the use of a network component which can only be duplicated at a cost which can make it uneconomic for second or third entrants, given the capability already in place. The obvious illustration of such a barrier is call termination. Using existing technologies, a call to CPE owned by a subscriber can only be terminated through the path which connects that CPE to the network. If a subscriber has only one line, there is no immediate scope for substitution (in the absence of a technical means through which terminating access can be made available to third parties). There would thus be a barrier to entry to provision of the service in question. Competition could, however, be introduced if a customer could be contacted on an alternative line, if termination by a third party over the single connection became possible or if the customer's choice of operator were significantly influenced by that operator's termination rate, as incorporated into the rates paid by those calling the customer.

There is a substantial probability that technological exclusion of this kind will create a barrier to entry which justifies *ex ante* regulation.

II.2.B. Regulatory Barriers to Entry

These arise when, as a result of regulatory policy or previous practice, entry into a particular market is considered too risky or perhaps even financially non-viable, and this situation is expected to persist. This state of affairs arises, for example, when the NRA, in pursuit of other objectives - typically relating to ensuring the affordability of retail services - imposes a retail pricing structure which means that some services are individually provided at below cost or without rates of return that support a business case to enter the market segment. This does not imply that the operator providing such services is doing so on a non-commercial basis, since its customers may buy other services from it as well, which in aggregate make the service package profitable (although this practice perpetuates cross-subsidisation). It does, however, make entry into the 'loss-making' segment of the market risky and unattractive. The most obvious example of this phenomenon is the retail pricing of access. In some

Member States, charges for this service fails to cover the forward-looking long-run incremental costs of its provision. This tends to have the effect of attracting entry to those service which the incumbent has traditionally used to cross-subsidise access, and deterring entry into the local loop.

It is widely recognised that tariff rebalancing can address this problem. However, experience suggests that the act of rebalancing is likely to occur slowly, so that this regulatory barrier may persist longer than anticipated. In addition, NRAs should also consider the non-competition-related policy drivers behind other regulatory acts when considering their impact as barriers to entry (*e.g.*, affordability requirements for fixed access and local call charges).

Perhaps most importantly, however, where investors perceive that significant regulatory uncertainty persists, they tend to be reluctant to invest or enter new markets, especially where investment entails large sunk costs and assets are long-lived. Where such investments are made (*e.g.*, where entry occurs), changes in regulations can fundamentally alter the commercial environment, possibly undermining the profitability of investments that new entrants (or, for that matter, an incumbent) would make. If potential new entrants consider there to be a significant risk of this occurring, entry and investments are likely to be reduced or might not occur at all. This situation can result in an incumbent appearing to have enduring market power, not because of excessive conventional entry barriers, nor because of its strategic use of apparent market power in order to make entry less attractive, but because firms are not prepared to enter the market due to perceived regulatory risks. Such problems are described in the industrial organisation literature in terms of regulatory commitment, or the lack thereof. No jurisdiction is completely free of this problem, and in some cases it might be an important cause of enduring market power.[3] Consequently, where such cases arise, *ex ante* regulation will at the very least need to condition its response through the use of proportionate remedies.

II.2.C. Scale-related Barriers to Entry

Economies of scale do not of themselves create a barrier to entry that cannot in practice be overcome by entrants. For economies of scale to be such as to prevent entry, the economy of scale must operate over a range which is large in relation to the market as a whole. If, for example, an industry exhibited economies of scale, but the minimum efficient scale (the level of output where a firm's costs are insignificantly different from the minimum) represented only ten percent of the market as a whole, then a scale economy of that kind would not represent a barrier to the development of effective competition. Thus, for a barrier to entry to exist, the economy of scale must operate up to a level which represents a high proportion of the total market to be addressed. These considerations suggest that, for scale to represent a substantial barrier to entry, the minimum efficient scale should be large relative to the total market, and that exit from the market should be made costly because the firm is forced to incur substantial sunk expenditures which are not recoverable on exit.

It is possible to establish whether an entrant would incur substantial sunk costs by examining the kind of investments which have to be made. Generally, investments in resaleable capital equipment, such as switches, are not sunk. Investments in civil works and underground plant

2 For a readable discussion of these issues *see* Levv. B., and P. Spiller, (1994), "The institutional foundations of regulatory commitment: A comparative analysis of telecommunications regulation". *Journal of Law, economics, and organisation*, 10,2: 201-246. For a more theoretical discussion *see* Laffont.J.-J. (1994), "The new economics of regulation: Ten years after", *Econometrica*: 62.3507-537.

can only be sold *in situ*, and as they have few if any other uses, they tend to have limited resale value such that substantial proportions of the value placed in these investments may not be salvaged on exit. The wireline local loop, where the proportion of expenditure on trenches, ducts and underground plant is particularly high and contains an especially high proportion of sunk costs, appears to satisfy this criterion.

Identifying the extent of scale economies represents a greater problem. A number of studies using engineering cost models address aspects of this problem in the fixed and mobile sectors. For example, they demonstrate that a local fixed distribution network exhibits large economies of scale. When economies of scale are accompanied by economies of scope, the barriers to entry can extend to related markets. This effect can, however, be nullified if there are alternative technological means of delivering the same service. For example, the fact that the local loop exhibits economies of scale, and that there is an economy of scope between the provision of telecommunications services and the delivery of entertainment services on a local cable system, does not qualify the latter service for inclusion in the list, given that there are many alternative modes of delivering television services.

II.3 BARRIERS TO ENTRY NOT WARRANTING INCLUSION IN A CANDIDATE MARKETS LIST

It is clear that the types of barrier to entry listed above are not exhaustive, and indeed there is no complete list of what constitutes an entry barrier. Many other kinds exist. In particular, the three listed above are all non-strategic barriers to entry – that is, barriers to entry that are not artificially 'manufactured' by the firm which enjoys them. It is therefore necessary to explain in general terms the absence from the list of both some other non-strategic, and also strategic, barriers to entry. These additional barriers to entry may, however, raise barriers already created by those factors listed above. It may therefore be appropriate to take them into account when they augment materially legal, regulatory and scale barriers (in other words, as a means of raising the relative height of the identified barrier(s) to entry), and thereby have an impact on any SMP assessment.

II.3.A. Absolute Cost Advantages

Some firms have lower input costs or better technology than others. These might derive in part from the fact that they were first in the market or were more efficiently managed. Such advantages are not, of themselves, grounds for regulatory intervention. A firm enjoying these advantages (and no others), would be constrained in its pricing by the costs of the second most efficient producer. In the circumstances, that would be a competitive price.

II.3.B. Product Differentiation Advantages

The high reputation enjoyed by a particular supplier might also represent a barrier to entry. This occurs in all markets, and is not a basis for *ex ante* regulatory intervention.

II.3.C. Demand-side Network Effects

In some cases, consumers of a service may derive benefit from it in a way which increases with their number. This might result in two types of "network effects" which may have some undesirable consequences. First, the existence of particular network effect might mean that demand for the product becomes less elastic in terms of price or income (which could be

exacerbated by technological barriers). Second, network effects might, in certain circumstances, be found to arise where the existence of a first mover advantage, coupled with other factors militating against customer churn, creates an enduring competitive advantage for the largest firm over its smaller rivals, creating the risk of the market "tipping" in its favour. However, this would not be a sufficient condition for *ex ante* regulation. Such markets may still be subject to competitive pressures over the long-term as fringe competitors seek to replace the dominant operator through, for example, technological advancement. It should also be noted that other regulatory measures, such as requirements for interoperability and end-to-end connectivity, may at least in part alleviate the risk of tipping (see, *e.g.*, Recital 6 and Article 4 of the *Access & Interconnection Directive*). Where standards are proprietary and give rise to network effects (*e.g.*, Microsoft's operating system), however, owners' property rights are often protected unless it can be successfully argued before the courts that the standard constitutes an "essential facility".

Consumers can also benefit from certain types of network effects. The appropriate response in these circumstances is to ensure that the firm benefiting most from the direct network effects is prevented from engaging in anti-competitive conduct, such as would occur if there was a cessation of interconnection.

II.3.D. Strategic Barriers to Entry

These include many types of possible conduct. They may take the form of excessive investment in product capacity, R&D or advertising, which creates in the minds of entrants the expectation that entry will be subject to a strongly competitive response by an incumbent. It may also have the effect of raising rivals' costs, for example by seeking to pre-empt inputs, raising the price of inputs, or artificially inflating consumers' switching costs by contractual or other means.[4]

There should be no general expectation or assumption that a particular firm will behave in any of these ways. Each observation tends to be idiosyncratic, relating to a particular set of factors. In these circumstances, it may be preferable to rely on a focussed application of competition rules to address the circumstances of any particular complaint. However, dominant firms are likely to be able to engage in strategic actions in those markets they dominate (which may allow them to leverage power into other markets), and which: (i) may not be illegal under competition rules, but have the effect of enhancing market power;[5] or (ii) are too difficult to prosecute because the information / proof needed cannot be obtained. In such cases, *ex ante* regulation preventing certain types of behaviour can lead to an increased level of entry and investment, and improve the performance of the industry. Strategic actions that may be prevented by regulation are present in communications markets where, for example, new entrants need to purchase and lease certain inputs from incumbents, such as interconnection, leased lines, co-location *etc.* Where a dominant operator can, for example, make the delivery times or other terms and conditions uncertain, it can delay or prevent entry.

3 Kreps and Wilson's seminal paper showed us that market power is not only explained by economies of scale and scope and 'traditional' entry barriers, but is created or enhanced by the incumbent's behaviour: Kreps, D., and Wilson, R., (1982), "Reputation and imperfect information". *Journal of Economic Theory*, 27: 253-279.

4 Hiring highly skilled expert staff who are in very short supply, may be such an example.