Commission for
Communications Regulation

Consultation

Market Analysis: Leased Lines Markets

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All responses to this consultation should be clearly marked:- "Reference: Submission re ComReg 07/77" as indicated above, and sent by post, facsimile, e-mail or on-line at www.comreg.ie (current consultations), to arrive on or before 5.30 pm Friday 9th November 2007, to:

Ms. Sonja Owens
Commission for Communications Regulation
Abbey Court
Irish Life Centre
Lower Abbey Street
Freepost
Dublin 1
Ireland

Ph: +353-1-8049600 Fax: +353-1-804 9680
Email: marketanalysisconsult@comreg.ie

Please note ComReg will publish all submissions with the Response to Consultation, subject to the standard confidentiality procedure.

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Introduction

1.1 ComReg published its original *Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)* review of the market for leased lines on 4 June 2004 (04/59). The response to consultation and draft direction was published on 17 January 2005 (05/03). This was notified to, and accepted by, the European Commission (16 Feb 2005). A Decision Notice (D7/05) was published on 30 March 2005.

1.2 The term "leased lines" refers to fixed, permanent telecommunications connections providing symmetric[1] capacity between two points. A leased line is permanent, in that capacity is available between the two fixed points. However, capacity could be reserved or shared through the associated network depending on the nature of the leased line.

1.3 In the previous review, ComReg defined three markets as follows:

- market for the minimum set of retail leased lines up to and including 2 Mb/s;
- market for wholesale terminating segments of leased lines; and
- market for wholesale trunk segments of leased lines.

1.4 ComReg found Eircom to have SMP in all three markets and proposed a set of remedies designed to address the lack of competition in the leased line markets.

1.5 Since the time of the initial review, the European Commission has reviewed the product and service markets which may be susceptible to ex ante regulation[2]. The Commission has proposed that the minimum set of retail leased lines should be removed from the list of relevant markets, since wholesale regulation should ensure that there is competitive supply at the retail level. In addition, the Commission reasons that, in the presence of wholesale regulation, this market does not meet the three criteria test since there are no significant barriers to entry[3].

1.6 ComReg has assessed the extent to which the market in Ireland for the minimum set of retail leased lines up to and including 2 Mb/s continues to be susceptible to ex ante regulation. By applying the three criteria test, ComReg proposes that, in the presence of wholesale regulation, entry barriers to the retail market are no longer high and non-transitory, and therefore the first criterion is not met. ComReg's preliminary conclusion is that, although Eircom has a high share of the retail market, remedies in the wholesale market, which were imposed following the previous market review, allow existing and potential competitors to enter and compete. In the presence of wholesale regulation, the retail market must therefore be considered not to be susceptible to ex ante regulation.

[1] It is ComReg's view that a leased line would be characterised by broad rather than absolute symmetry, in the sense that upstream and downstream capacities would not necessarily be equal, but should be broadly equivalent.

[2] Public Consultation on a draft commission recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation SEC (2006) 837 Brussels 28.06.06.

[3] Section 4.2.3, p. 35.

1.7 The Commission's latest proposal is that there are two leased line markets potentially susceptible to ex ante regulation, as follows:

- Market for wholesale terminating segments of leased lines; and
- Market for wholesale trunk segments of leased lines.

1.8 Because of the time which has elapsed since the last review, and because of potential changes in the EC Recommendation, ComReg has decided to undertake a new review of the market for wholesale leased lines.

Relevant Market Definition

1.9 In this current market review, ComReg proposes to define the relevant market(s) as follows:

- There are separate markets for the trunk segments and terminating segments of leased lines. There is a break in the economics of supply and demand, such that a supplier of trunk segments, which are high capacity and generally on the core network, would not be able to supply terminating segments without incurring significant costs.
- Self-supply should only be considered part of this market where an operator has spare capacity which could be offered on the wholesale market, and where a customer could switch relatively easily.
- The markets for trunk segments and terminating segments should not be further differentiated by bandwidth.
- All high bandwidth products which offer fixed, permanent, broadly symmetric connection between two points belong in the same trunk segment market, irrespective of the technology used to deliver the product.
- All products offering fixed, permanent, broadly symmetric connection to an end user belong in the market for terminating segments, irrespective of the technology used to deliver the product.
- The geographic scope of the market for wholesale trunk segments and the market for wholesale terminating segments is national.

Relevant Market Analysis

Market for trunk segments

1.10 ComReg's preliminary conclusions are that:

- Eircom's market share remains high, at just over 60% by revenue.
- Competition in the market has grown, especially since the entrance of ESB Telecoms (ESBT). ComReg understands that there is spare capacity in the trunk segment market.
- High sunk costs and economies of scale are characteristics of the trunk segment market. However, it is ComReg's view that while they pose challenging barriers to entry, there has been market entry, aided in one at least one case by public subsidies, and as such, there currently exists more than one network infrastructure in some areas.
- The nature of the market is such that there are relatively few contracts, and contracts tend to be long-term. This means that the cost of switching can be substantial, and that change in the market is not rapid.

- However, ComReg believes that there is evidence of increasing countervailing buyer power due to the size of the undertakings involved, the availability of alternative infrastructure, in some areas, and the increasing possibility of self-supply.

1.11 ComReg's preliminary conclusion is that, on balance, the market for trunk segments of wholesale leased lines is tending towards competition.

Market for terminating segments

1.12 ComReg's preliminary conclusions are that:

- Eircom has a very high and enduring market share, of just over 83% by revenue
- Competition in the market is very limited and consists mainly of the resale of Eircom's product. ComReg notes that resale would not constrain Eircom's ability to act independently.
- Sunk costs and economies of scale are high, and constitute high barriers to entry.
- Countervailing buyer power is very limited.

1.13 ComReg's preliminary conclusion is that the market for terminating segments of wholesale leased lines is not tending towards competition, and is unlikely to do so within the lifetime of this review.

Proposed SMP Designation

1.14 Taking the conclusions of the market analysis into account, ComReg proposes that:

- The market for the trunk segments of wholesale leased lines is tending towards competition. No operator has SMP.
- Eircom should be designated as having SMP in the market for the terminating segments of wholesale leased lines.

Proposed Remedies

1.15 Given the existence of SMP in the market for the terminating segments of wholesale leased lines, ComReg believes there is significant scope for the SMP operator to:

- exploit customers by virtue of its SMP position;
- leverage its market power into adjacent vertically or horizontally related markets; and
- foreclose or exclude competitors such as to protect its existing dominance on the market.

1.16 In view of the significant potential and clear incentives for such anti-competitive practices to arise, it is considered that ex ante regulation is warranted and will serve as an appropriate complement to ex post competition law over the period of this review. To that end, ComReg proposes to apply a number of wholesale/retail remedies including :

1.17 **Access** to wholesale terminating segments of leased lines by obliging access to and use of specific network facilities, including:

- Access to mandated products, currently Wholesale Leased Lines (WLLs) and Partial Private Circuits (PPCs).
- Access to facilities already granted.
- Access to specified information which supports existing and future products and services in this market.
- Eircom is obliged to meet reasonable access requests.
- Wholesale products must be delivered on terms and conditions that are fair, reasonable and timely, and supported by an appropriate Service Level Agreement.
- Negotiation should be carried out in good faith.
- Wholesale products must be delivered by Eircom to competitors at an equivalent standard and timescale as to its own retail arm.

1.18 **Transparency**

- Obligation to publish a Reference Offer for wholesale leased line services.
- Obligation to comply with a set of Product Performance Metrics for wholesale leased line services.
- Obligation to publish changes to prices in advance of their coming into effect, and to notify ComReg in advance of publication.

1.19 **Non-discrimination**

- General obligation not to discriminate.

1.20 **Price Control**

- Cost based price control on PPCs.
- Cost-based price control on WLLs.
- Continuation of cost accounting and accounting separation obligations, pending the outcome of further consultation on accounting systems and methodologies.

1.21 **The remedies proposed in this market review are based on the nature of the competition problems identified and are proportionate and justified in light of the objectives contained in the Communications Regulation Act, 2002. The proposed remedies aim to address potential market failures, to protect consumers against the exercise of market power and to promote competition.**

2 Introduction

Background

2.1 ComReg published its *Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)* review of the market for leased lines on 4 June 2004 (04/59). The response to consultation and draft direction was published on 17 January 2005 (05/03). This was notified to, and accepted by, the European Commission (16 Feb 2005). A Decision Notice (D7/05) was published on 30 March 2005.

2.2 The term "leased lines" refers to fixed, permanent telecommunications connections providing symmetric[4] capacity between two points. A leased line is permanent, in that capacity is available between the two fixed points. However, the capacity could be reserved or shared through the associated network depending on the nature of the particular leased line.

2.3 A retail leased line is typically used by business users to connect offices sites or to access the Internet. It is a matter for the end user to determine the nature and mix of services carried over a leased line.

2.4 A wholesale leased line may be used as an input to the provision of a retail leased line, or may be used as an input to provide other retail services, such as fixed and mobile voice services, or VPNs. A wholesale leased line may also be used by an operator seeking to extend parts of its network without there being a direct corresponding retail service.

2.5 The difference between wholesale and retail leased lines is to do with the nature of the market, and the way in which the service is bought, sold and used, rather than with the technical content of the product. Leased lines which are sold in the wholesale market are always sold between operators, for the purpose of eventually providing a retail service. For the purposes of this review, it is immaterial whether the retail service corresponds directly to the wholesale service. It should be noted that there may be no technical difference between a retail leased line and a wholesale leased line.

2.6 So, for example, for the supply of VPNs, the wholesale purchase could be one or more point-to-point wholesale leased lines, which may be used to provide a retail point-to-multipoint service. Similarly, an operator may buy a wholesale leased line and use it to provide retail voice services and broadband connections. In both cases, the relationship between buyer and seller is a wholesale relationship, and the product is being used to support a downstream retail service.

2.7 In the previous review, ComReg defined three markets as follows:

- market for the minimum set of retail leased lines up to and including 2 Mb/s;
- market for wholesale terminating segments of leased lines; and
- market for wholesale trunk segments of leased lines.

[4] It is ComReg's view that a leased line would be characterised by broad rather than absolute symmetry, in the sense that upstream and downstream capacities would not necessarily be equal, but should be broadly equivalent.

2.8 ComReg found Eircom to have SMP in all three markets and proposed a set of remedies designed to address the lack of competition in the leased line markets.

2.9 Since the time of the initial review, the European Commission has reviewed the product and service markets which may be susceptible to ex ante regulation[5]. The Commission has proposed that the minimum set of retail leased lines should be removed from the list of relevant markets. The Commission believes that wholesale regulation should ensure that there is competitive supply at the retail level. In addition, the Commission believes that this market should not qualify for regulation because wholesale regulation should remove any significant barriers to entry. This means that this market does not meet the three criteria test since there are no significant barriers to entry[6].

2.10 The Commission's latest proposal is that there are two leased line markets potentially susceptible to ex ante regulation, as follows:

- Market for wholesale terminating segments of leased lines
- Market for wholesale trunk segments of leased lines.

2.11 Because of the time which has elapsed since the last review, ComReg has decided to undertake a new review of the market for leased lines. As part of this current review, ComReg has obtained qualitative and quantitative information from relevant operators. This has included data requests and a series of meetings with operators which sought to establish likely developments in the market. ComReg has also reviewed the experience of regulating other leased line markets in other jurisdictions. ComReg has carefully analysed all this information before coming to its preliminary conclusions.

[5] Public Consultation on a draft commission recommendation on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation SEC (2006) 837 Brussels 28.06.06.

[6] Ibid, section 4.2.3, p.35.

Consultation Process

2.12 The purpose of this consultation is to set out ComReg's preliminary views on the nature of the relevant market definition, analysis and proposed remedies.

2.13 ComReg invites interested parties to respond to any or all of the questions set out in this document. Comments are welcome on any aspect of the document.

2.14 In your response, ComReg would ask you to clearly mark any commercially sensitive information which should not be published. Otherwise, ComReg reserves the right to publish responses to this consultation.

2.15 All responses should be forwarded to the following address by 5.30 p.m. on the 9th November, 2007. Any responses received after this date will not be accepted.

Structure of Consultation Document

2.16 This document is structured as follows :

- Section 1: Foreword
- Section 2: Executive Summary
- Section 3: Introduction
- Section 4: Relevant Market Definition
- Section 5: Relevant Market Analysis
- Section 6: Proposed Market Remedies
- Section 7: Regulatory Impact Assessment
- Annex A: Glossary of terms
- Annex B: Consultation questions
- Annex C: Methodology for calculating market shares

3 Relevant Market Definition

3.1 In identifying markets consistent with competition law principles, ComReg takes the utmost account of the Recommendation and its Explanatory Memorandum on relevant product and service markets within the electronic communications sector[7] (“the Recommendation” and “the Explanatory Memorandum”), the Commission’s Notice on Market Definition[8], the Commission's Guidelines on Market Analysis and Significant Market Power[9] (“the SMP Guidelines”), and any relevant competition case law or decisions. The *ex ante* definition of markets is carried out in order to identify those product and service markets, the characteristics of which may be such as to justify the imposition of regulatory obligations. The definition of the relevant market is a dynamic task[10]. Thus, the market definition and analysis considers both current market conditions and any potential developments that may take place over the next two to three years.

3.2 The definition of the relevant market is established by the combination of the relevant product and geographic dimensions. The process of defining these dimensions is outlined below.

Scope of Relevant Market Definition

3.3 The starting point for the market definition is the list of product and service markets which the Commission identified as susceptible to *ex ante* regulation in its Recommendation[11]. It is also possible for NRAs to define markets other than those listed in the Recommendation where this is justified by national circumstances and where the Commission does not raise any objections in accordance with Articles 7(4) and 15(3) of the Framework Directive[12].

3.4 In line with the Recommendation and SMP Guidelines, ComReg takes the recommended set of products/services to form the starting point of its relevant market analysis. It then considers whether, from a demand and supply perspective, the market should be expanded or narrowed.

3.5 The analysis of demand-side considerations involves an assessment of all those products or services that are viewed as sufficiently “close” substitutes by consumers to be included within the same relevant market. For two products to be

[7] European Commission, Commission Recommendation of 11/02/2003 On Relevant Product and Service Markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communication networks and services, C(2003)497.

[8] European Commission, Notice on the Definition of the Relevant Market for the Purposes of Community Competition Law, OJ [1997] C372/5.

[9] European 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).

[10] In accordance with the SMP Guidelines ComReg must “conduct a forward looking, structural evaluation of the relevant market, based on existing market conditions”, para. 20.

[11] Regulation 26 of the Framework Regulations specifically states: “As soon as possible after the adoption by the European Commission of a recommendation referred to in Article 15(1) of the Framework Directive, the Regulator shall… define relevant markets for the purposes of these Regulations and the Specific Regulations, including the geographical area within the State of such markets”.

[12] Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services, OJ L 108, 24.4.2002, p. 33.

effective demand-side substitutes it is necessary that a sufficient number of customers are not only capable of switching between them, but they would actually do so in response to a relative price change[13]. The **S**mall but **S**ignificant **N**on-transitory **I**ncrease in **P**rice ("SSNIP") test provides a useful conceptual framework within which to identify the existence of close demand substitutes[14]. It allows the identification of the main price constraints on the product in question.

3.6 In carrying out the SSNIP test, the point at which a market should be expanded to include additional products/services is where a hypothetical monopolist of the goods/services in question would not be able to sustain a small but significant (5-10%) price increase above the competitive level because enough customers would switch to alternative products/services so as to render that price increase unprofitable. If it is not possible for the hypothetical monopolist to profitably apply a 5-10% price increase, this implies that suppliers of other products/services impose important competitive constraints and should be included as part of the relevant market.

3.7 Supply-side substitutability may also be taken into account where *"its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy"* and where *"suppliers are able to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices"*[15]. The SSNIP test is also considered from the supply side perspective as a means to establish whether suppliers are able to switch production to the relevant products or services and market them in the short term in response to small price changes. For the products of a firm to be regarded as effective supply-side substitutes, it is not only necessary for the production, marketing and distribution of the relevant products to be possible without the need for significant new investments; it must also be possible within a relatively short period of time[16]. ComReg accordingly considers any possible costs, risks or time delays associated with suppliers switching between supplying the products under consideration and whether they are likely to do so in practice.

[13] OFT Guideline (July 2001) OFT 342, The role of market definition in monopoly and dominance inquiries, Economic Discussion Paper 2, para. 2.15.

[14] Paragraph 17 of the Commission's Notice on Market Definition states - "The question to be asked is whether the parties' customers would switch to readily available substitutes or to suppliers located elsewhere in response to a hypothetical small (in the range of 5% to 10%) but permanent relative price increase in the products and areas being considered. If substitution were enough to make the price increase unprofitable because of the resulting loss of sales, additional substitutes and areas are included in the relevant market".

[15] The Commission's Notice on Market Definition, para. 20.

[16] OFT Guideline (July 2001) OFT 342, para. 2.20.

3.8 In its Recommendation, the EU Commission set out the relevant product/service markets as :

- Minimum set of retail leased lines (Market 7);
- Wholesale terminating segments of leased lines (Market 13); and
- Wholesale trunk segments of leased lines (Market 14)

3.9 ComReg's previous market review found this definition to be appropriate in Ireland.

Should the Retail Minimum Set of Leased Lines continue to be a market susceptible to ex ante regulation?

3.10 Under Article 15 of the Universal Service Regulations[17], NRAs are required to consider the extent of competition in the provision of the minimum set of retail leased lines. That set has been defined in the Official Journal of the European Commission as analogue leased lines, and digital leased lines from 64 Kbit/s up to and including 2Mbit/s. If it is found that the provision of such leased lines is not competitive, then NRAs are required to impose certain obligations on SMP provider(s).

3.11 The Draft Commission Recommendation currently under discussion recommends that there is no longer a need to view the retail minimum set of leased lines as a market susceptible to ex ante regulation, as appropriate wholesale regulation should be sufficient to ensure competitive supply at the retail level. The Commission has therefore proposed to make the minimum set of retail leased lines a null set, which withdraws it from the list of markets recommended for the consideration of ex ante regulation.

3.12 However, ComReg must consider whether the Irish market for the retail minimum set of leased lines continues to be susceptible to ex ante regulation, or whether the market should be considered to be effectively competitive. If the market were judged to be not susceptible to ex ante regulation, then existing regulation would be withdrawn.

3.13 In order for a market which is not on the Commission's list of recommended markets to be judged susceptible to ex ante regulation, it must meet three cumulative criteria:

- The market should be subject to high and non-transitory entry barriers, which may be legal, structural or regulatory;
- The barriers to entry indicate that the market will not tend towards competition over time;
- Competition law alone is not sufficient to redress market failures (absent ex ante regulation).

3.14 ComReg has assessed the extent to which the retail market in Ireland for the minimum set of leased lines would meet these three criteria.

[17] European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations, 2003 (S.I. No. 308 of 2003).

Are entry barriers high and non-transitory?

3.15 In the previous market review, ComReg concluded that Eircom's high and persistent market share, taken together with barriers to entry associated with Eircom's ownership of a ubiquitous network and vertical integration, indicated that Eircom's market power was likely to continue. ComReg did not consider that regulation of the wholesale market alone was sufficient to address competition problems in the retail market.

3.16 At the time of the last review[18], Eircom's market share for retail leased lines was around 70% by revenue, and around 80% by number of circuits. It can be noted that, in line with the EC Recommendation, the market for the minimum set of leased lines was defined as leased lines up to and including 2Mb/s. Within the minimum set, Eircom's market share of 64 kb/s lines was close to 100%, indicating that market entry focussed on higher capacity lines which generally yield higher returns on investment. Pricing of retail leased lines was regulated, and an analysis of pricing trends showed little pressure from competitors.

3.17 ComReg's assessment of recent data indicates that Eircom's share of the market has remained around 80% through 2005 and 2006, when measured by number of circuits. However, when measured by revenue, Eircom's market share has declined to just under 60% at end Q1, 2007.[19] Several operators have a small presence in the market, but the remainder of the retail market is largely made up of BTI and Verizon. The trend towards higher bandwidth lines has continued, and Eircom recently noted a trend for migration from analogue and lower capacity digital lines towards higher capacity lines and other managed data services[20].

3.18 The barriers to entry identified in the previous review were largely associated with Eircom's control of a ubiquitous network. For example, it was proposed that Eircom was able to achieve significant economies of scale and scope, and that a market entrant would not be able to replicate those advantages. Similarly, Eircom's advantages as a vertically-integrated operator were seen to constitute a barrier to entry unlikely to be reduced over the time of the review.

3.19 It is ComReg's view that the barriers to entry identified in the retail market persist, as the conditions associated with control of a ubiquitous network are largely unchanged. Eircom continues to have a high market share, and to achieve benefits associated with its historic large installed base of traditional leased lines. Eircom's revenue share of the market has declined over the last six months, but still remains in excess of 50%.

3.20 However, the assessment of the retail market must be considered absent ex ante regulation in the retail market, but in the presence of regulation in the wholesale market. It is ComReg's view that current remedies in the wholesale market which were introduced following the last market review allow existing and potential competitors to enter and compete in the retail market for leased lines. These remedies include mandated products (currently Wholesale Leased Lines and Partial Private Circuits), and supporting obligations to ensure the implementation,

[18] Market data was from H1, 2003. ComReg 05/03.

[19] Data provided to ComReg for Quarterly Review.

[20] Eircom SEC Form 20-F, March 31st 2006.

operation and development of these products. The operation of the wholesale market is considered later in this review, but for the purposes of the retail market, the presence of effective wholesale regulation is deemed sufficient to reduce high and non-transitory entry barriers.

3.21 ComReg therefore suggests that, in the presence of wholesale regulation, the market for retail leased lines does not meet the first criteria which defines a market susceptible to ex ante regulation. While this is sufficient to deem the market inappropriate for ex ante regulation, ComReg has gone on to consider the other criteria.

Is the market tending toward effective competition?

3.22 The last review of the leased line markets mandated the provision of two wholesale products, traditional Wholesale Leased Lines (WLLs) and Partial Private Circuits (PPCs). The wholesale market has been characterised by a shift from traditional leased lines towards PPCs, as operators seek to make maximum use of their own networks.

3.23 The market share analysis discussed above indicates that there has been market entry and expansion in the retail market, and that two suppliers in addition to Eircom have an established presence. Hence, Eircom's market share of the retail market has fallen.

3.24 ComReg proposes that, since the last market review, the market has seen the establishment of remedies at the wholesale level which significantly reduces barriers to entry in the retail market.

Would competition law alone be sufficient?

3.25 It is ComReg's view that, so long as wholesale regulation is in place, entry barriers into the retail market are no longer high. ComReg therefore concludes that, in the presence of regulation in the wholesale market, competition law would be sufficient to ensure the effective functioning of the retail market for leased lines. Therefore, it is proposed that all current regulatory obligations arising from a previous finding of SMP in the retail market for the minimum set of leased lines should be withdrawn.

3.26 The Draft Commission Recommendation proposes to continue to define the wholesale market for leased lines as susceptible to ex ante regulation, and ComReg considers that this is an appropriate starting point for the analysis.

Q. 1. Do you agree that, in the presence of regulation of the wholesale market for leased lines, the market for the minimum set of retail leased lines should no longer be considered susceptible to ex ante regulation? Please provide reasons for your answer.

Are there separate markets for the trunk segments and the terminating segments of leased lines?

Introduction

3.27 In the Commission's Recommendation, wholesale trunk segments and wholesale terminating segments were not considered part of the same relevant market.

3.28 The Commission's recommendation, that trunk and terminating segments of leased lines belong in different markets, is primarily based on differences in the conditions of supply. The reasoning is that the economics of supplying a dedicated connection to an end-user are sufficiently different from the economics of supplying high capacity aggregated trunk connection to warrant the definition of separate markets.

3.29 At a retail level, the distinction is fairly arbitrary, as a retail customer of leased lines will buy end-to-end connectivity. As long as the customer has dedicated capacity, it is generally not important to the retail customer whether traffic is aggregated onto a high capacity connection or not, and it is generally not important whether some parts of the connection are aggregated or not. However, when considering the wholesale relationship, the purchaser (who is always a network operator) will be buying capacity which is in addition to its own network. It is likely to be using the purchase of wholesale leased lines to supplement or extend its network. This could be for internal purposes (for example, to provide backup or network security), or could be to offer services to a third party (ie a retail service), or both.

3.30 ComReg has used the Commission's Draft Recommendation as a starting point, and considers below firstly whether trunk and terminating segments should be considered part of the same relevant market, and secondly, if they are not in the same market, where the boundary between the two should be drawn.

Demand considerations

3.31 Trunk and terminating segments are not functional substitutes and cannot be seen as effective demand substitutes. Each fulfils a specific need, and trunk and terminating segments are typically used as complementary products. A wholesale customer would be unlikely to switch from one product to the other in response to small but significant price changes, given that each relate to different parts of the network and demand is driven by the wholesale customer's own network requirements. ComReg therefore concludes that demand side considerations indicate that trunk and terminating segments should be considered as falling within different markets.

Supply considerations

3.32 The economics of supplying core network capacity are clearly different from supplying dedicated capacity in the access network. Core network investment is to do with servicing areas of dense and concentrated traffic, whereas the access network involves connecting individual end-users. The access network thus typically entails the transfer of thinner volumes of traffic on a more disaggregated basis over a widespread network. Traffic in the core network is usually aggregated, and the network economics are different, i.e., density and scale economies can generally be achieved more rapidly or at lower levels of investment in the core network than in the access network due to the aggregation or concentration of traffic in the core.

3.33 While the principle of differentiating between trunk and terminating segments seems obvious, the definition of where that differentiation should be drawn is not so clear.

3.34 The Explanatory Memorandum to the Recommendation ('the Explanatory Memorandum') notes that "What constitutes a terminating segment will depend on the network topology specific to particular Member States and will be decided upon by the relevant NRA".

3.35 ComReg has reviewed the ways in which other NRAs have differentiated between trunk and terminating segments. In Denmark, for example, the terminating segment is defined as a connection from a specified end-user address to a main distribution frame. Italy defines a terminating segment as connecting an end-user to a node on the SDH network in the region where the end-user is located. In Sweden, a terminating segment provides transmission capacity between two network connection points, located within one transit area of the SMP operator's network. There are 13 such areas in Sweden. However, where the leased line connects network points which are located in different transit areas, it is considered to be a trunk segment. The location of the two connection points is the factor which determines what market the segment falls into. In the UK, Ofcom identifies the split between trunk and terminating segments as BT's Tier 1 nodes, or equivalent on other communications providers' networks.

3.36 ComReg recognises that the boundary between trunk and terminating segments will differ according to particular national circumstance. ComReg has considered where the boundary between trunk and terminating segments should be defined in Ireland. The cut-off point between trunk and terminating should be where there is a distinct break in the economics of demand for, or supply of, these respective segments such that appreciably different competitive conditions can be observed.

3.37 In the previous review, ComReg proposed that the boundary between trunk and terminating segments would lie at the customer's leased line serving exchange due to the high sunk costs entailed in network build below the serving switch. However, there are problems in specifying a particular network level which is always associated with the point where a terminating segment becomes a trunk segment. It could be argued that this approach ties the definition to the incumbent's network structure, and does not adequately capture the fact that the point where traffic is aggregated will vary between operators. This means that the actual break point in the economics of supply may be higher in the network for some operators. Some responses to the previous consultation argued that the aggregation point was often above the level of the serving switch, and so the break in supply costs would be higher.

3.38 ComReg has also considered whether the local/regional aspect of the connection is significant in Ireland. Following the approach taken in Italy or the Netherlands, for example, it may be possible to consider differentiating between a leased line which is within one geographical area, and a leased line which connects geographical areas. This would capture the difference between capacity connecting major urban centres, and capacity connecting to an individual end-user. However, ComReg suggests that in this instance, while the local/regional aspect is significant, it is not in itself the determining factor; rather it is the connection of large volumes of traffic. While this is consistent with capacity between major urban centres, it is not restricted to interurban routes – for example, high capacity routes within certain high density areas such as Dublin would exhibit very similar characteristics to a high capacity route between Dublin and Cork, in terms of supply conditions. This would suggest that the prime factor which differentiates supply conditions is capacity, in the sense of connecting large volumes of traffic.

3.39 It is ComReg's view that the core network is typified by the connection of major network nodes, which can handle very high capacities. The connections coming in from the access networks are aggregated into these high capacity pipes. The physical media used at this point is fibre. In Ireland, the core network is typically within and between major urban centres. ComReg proposes that the trunk segments of leased lines are those which would be found on the core network. However, the market for trunk segments does not entirely map the core network. The nature of the trunk segment is such that it does not terminate at a specific end-user.

3.40 It is proposed that, in the wholesale leased line market, everything outside of the trunk segment market, and below the main points of handover to the trunk segment market, should be characterised as forming part of the terminating segment market. This boundary is proposed due to the differing economic characteristics/conditions of supply arising below these points, notably the need to supply thinner or lower volumes of traffic on a more disaggregated basis to individual end users. The terminating segment always connects to an end-user.

3.41 ComReg considers that the actual pattern of investment in Ireland supports its proposed definition of the boundary split between trunk and terminating segments, and confirms the different economic conditions. Network build by OAOs has been restricted, with few exceptions, to the core network. OAOs have concentrated on supplying high capacity channels which aggregate traffic, generally within and between cities/large towns and beyond main points of interconnect/handover from the relevant access network. This supports ComReg's view that the supply of terminating segments, which relies on a widespread network which can reach individual customers, requires different economic inputs to the supply of trunk segments.

3.42 When this proposed definition is translated into Eircom's current network topology, it would mean that, for example, a trunk segment of a leased line would be associated with connectivity[21] between any tandem and double-tandem switch location. It may also include connectivity between tandem exchanges where these exchanges connect areas of high traffic density via high capacity links. This means that, in the current network, trunk capacity will be high order transport capacity, which generally means capacity of the order of STM-1 and above. A terminating segment could be connected to any exchange (primary, tandem or double-tandem) allowing OAOs to access trunk capacity as and if required.

3.43 Because of differences in the economics of supply, ComReg considers that an existing supplier of trunk segments would not be able to switch to supplying terminating segments without incurring significant additional costs, risks and time

[21] This does not include handover, which would form part of the terminating segment market.

delays and as such would be unlikely to constrain a hypothetical monopolist supplier of terminating segments from implementing a small but significant price increase above the competitive level. Subject to effective demand side substitution also being limited, this is sufficient to render trunk and terminating segments within different markets.

Q. 2. Do you agree that trunk and terminating segments fall within different markets? Do you agree with ComReg's proposed boundary between trunk and terminating segments? Please state the reasons for your opinions.

Should self-supply be considered part of the market for trunk segments and/or part of the market for terminating segments?

3.44 ComReg has considered whether self-supply of dedicated capacity should be considered as part of the market for trunk segments, and has also considered whether it should form part of the market for terminating segments. The issue of self-supply arises where a vertically integrated firm which currently supplies a product or service to its own retail arm would be likely to switch to supply external wholesale customers, given a small but significant price increase. If it is likely to switch to external supply, then its present self-supply should be considered part of the market. This is because, in this circumstance, the ability to switch supply may act as a constraint on the pricing of existing wholesale products.

3.45 In considering whether self-supply should be considered as part of the market for the trunk and terminating segments of wholesale leased lines, ComReg proposes that self-supply should only be considered for those operators who supply their retail arm based on their own network inputs. This is because including the wholesale elements that operators purchase from another operator and then both supply to their own retail arm and sell on to another operator as a reseller, could significantly overstate the operator's ability to influence a hypothetical monopolist's commercial behaviour. Applying the SSNIP test, it is unlikely that a hypothetical monopolist wholesale provider of leased line services based on own network inputs would be constrained from implementing a 5-10% price increase above the competitive level by the provision of this service by resellers. This is because the resellers' wholesale inputs would also presumably be subject to the 5-10% price increase by the hypothetical monopolist.

3.46 It is ComReg's view that self-supply should be considered part of the market where the following conditions apply:

- Where the operator already has spare capacity available which could be offered in the wholesale market. This means that the networks must be sufficiently rolled out and of sufficient capacity and coverage so as to comprise a viable alternative for wholesale customers.
- Where offering new or additional wholesale capacity does not incur significant investment costs, either in infrastructure or in services such as billing or account management.

- Where it is likely and probable that a vertically integrated operator would act in this way.
- Where a customer could switch relatively easily to purchase a new supplier's product or service, without incurring significant costs (for example, in connecting to the alternative suppliers' networks).

3.47 These criteria would apply to all operators in the market, so that self-supplied capacity which met these conditions would be included within the relevant market. ComReg has taken account of a recent report prepared for the European Commission which notes that *"Only in the case where a rival firm has reached a network roll-out and geographical coverage comparable with the existing operator(s), where the necessary spare capacity is available, wholesale billing and account management systems exist, and where switching costs are low, supply substitution appears to impose a strong enough pricing constraint on the existing wholesale products. In this case the rival firm's self provided inputs could be included in the same relevant wholesale market together with incumbent's wholesale offerings"*[22].

3.48 It is ComReg's view the reasoning above applies to self-supply in the markets for trunk segments and for terminating segments. Differences in the characteristics of the markets would suggest that the potential to switch from self-supply to a commercial wholesale offering would be more likely in the trunk market than in the terminating market. However, similar principles apply when considering how to define self-supplied capacity.

Q. 3. Do you agree with ComReg's reasoning on self-supply? Please provide reasons for your response.

Should the market for trunk segments be further differentiated by bandwidth?

3.49 The Explanatory Memorandum notes in its discussion on dedicated connections and capacity that *"Additional market segmentation is possible between high and low capacity leased lines"*.

3.50 ComReg has considered firstly whether there are supply side constraints between supplying different bandwidths of trunk segments. If suppliers can readily switch to supply segments of different bandwidths, this may exert sufficient constraint on the monopolist's ability to act independently in the market to make a consideration of demand less important.

[22] Martin Cave, Ulrich Stumpf and Tommasso Valletti, July 2006, "A review of certain markets included in the Commission's Recommendation on Relevant Markets subject to *ex ante* Regulation", available from http://ec.europa.eu/information_society/policy/ecomm/info_centre/documentation/studies_ext_consult/index_en.htm, p. 17.

An OFT consultation paper (OFT 506) in October 2002 on draft guidelines regarding "Mergers: a substantive assessment" also notes at para. 3.22: *"The OFT may take into account captive capacity or production where that capacity or production could be readily and profitably switched to the free market…"*

Supply considerations

3.51 ComReg considers that a supplier who currently supplies high bandwidth trunk segments could switch to supply lower bandwidth trunk segments reasonably quickly in response to a small price increase, and vice versa. This is because when a supplier has a core transmission network in place, it is relatively easy to supply a range of bandwidths over that network. To find supply-side substitution, it is not necessary for a supplier to be able to substitute at every bandwidth level. Rather, the assessment is of the likelihood of being able to switch along the range of bandwidth options, and not necessarily from lowest to highest. The ability of suppliers to act in this way is supported by the tendency to aggregate capacity on the core network, so that in practice, the supplier is already carrying a range of bandwidths.

3.52 The hierarchical nature of a network based on PDH and SDH systems allows for streams of 2 Mbit/s and above to be multiplexed, so that larger frames are created. The larger frame (STM-1) may therefore consist of smaller streams multiplexed together. The inputs to an STM-1 can include any combination of lower level inputs. At the next level, an STM-4 may take 4 x STM-1 inputs or again any combination up to that level.

3.53 ComReg has considered the implications of a move to Next Generation Networks (NGNs), which are primarily based on Ethernet and/or Internet Protocol (IP) technologies. While these networks are not hierarchical in the way in which SDH is, the principle of being able to handle variable bandwidths is the same, and an operator which supplied high bandwidth trunk segments over an NGN could relatively easily switch to supply lower bandwidth trunks.

3.54 ComReg therefore proposes that a current supplier of high bandwidth segments could switch to supply lower bandwidths, and vice versa, and that this would act to constrain the ability of a monopolist of a certain range of bandwidths to act independently. It is proposed that there is no differentiation on bandwidth within the market for trunk segments.

Q. 4. Do you agree that the market for trunk segments should not be further differentiated by bandwidth? Please provide a reasoned response.

Do all high bandwidth products form part of the same trunk segment market?

3.55 It is ComReg's view that all "carriers' carrier" high bandwidth products which offer dedicated, symmetric, point-to-point connection belong in the same market. This is the case irrespective of the technology used to deliver the product. The impact of a shift to NGNs, or the increasing use of IP in the core network, is the use of a new technology to deliver the same service. This means, for example, that current services based on technologies such as (but not limited to) PDH, SDH or Ethernet would be included in the market, whereas dark fibre would not. Dark fibre is not considered to be a telecommunications service and so does not fall into this market.

3.56 ComReg recognises that there will be new and more cost-effective ways of delivering services, but where this is to do with process rather than product, then the services should be defined in the same market. In other words, the concern is with the service being delivered, and the review remains neutral as to the technology used to deliver the service. This approach would apply to any such new products and services which may be introduced during the lifetime of this review.

Q. 5. Do you agree that all high bandwidth products form part of the same market? Please provide reasons for your response.

What is the geographical scope of the market for trunk segments?

3.57 The *Guidelines on market analysis and the evaluation of significant market power* indicate 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 homogenous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different. The definition of the geographic market does not require the conditions of competition between traders or providers of services to be perfectly homogeneous. It is sufficient that they are similar or sufficiently homogeneous and accordingly only those areas in which the conditions of competition are 'heterogeneous' may not be considered to constitute a uniform market.*"

3.58 ComReg proposes that the definition of a narrower geographical market would involve considering whether an increase in price in one area would attract investment from firms operating in other areas, and whether this would constitute a sufficiently sharp break in conditions of competition, and the establishment of a clear and persistent boundary.

3.59 Its preliminary view is that defining the boundaries of the trunk market in terms of the characteristics of the service better reflects the ways in which trunk products are demanded and delivered. While this often coincides with particular geographical distributions, it is not the geography which is the defining characteristic. For this reason, ComReg proposes that the geographical market is Ireland.

Q. 6. Do you agree that the market for trunk segments is national in scope? If not, please give reasoned arguments to support your views.

Should the market for terminating segments be further differentiated by bandwidth?

3.60 ComReg has considered the extent to which the market for terminating segments should be further differentiated according to the capacity of the segment.

Supply considerations

3.61 The analysis has considered first of all the supply of terminating segments. Supply-side substitution between leased lines of varying bandwidth would mean that suppliers of high bandwidth terminating segments could switch to supplying low bandwidth terminating segments (and vice versa) with immediacy, at low cost, on a sufficient scale and where it is reasonably probable that such substitution would take place in practice in response to small price changes.

3.62 ComReg has considered whether a supplier of high bandwidth terminating segments would incur significant costs in switching to supply lower bandwidth terminating segments, and vice versa. It is ComReg's view that the cost of supplying terminating segments is not dependent on the bandwidth supplied. This suggests that a supplier which was able to supply a terminating segment of one capacity would be able to supply a terminating segment of another capacity, within a fairly short timeframe, for example by replacing copper with fibre using the same underlying duct or pole infrastructure.

3.63 One constraint on supply which should be noted is that imposed by the underlying infrastructure. Where the terminating segment is being provided over copper, there will be restrictions on the bandwidths which can be offered. Currently in Ireland, a terminating segment above 2Mbit/s is not typically provided over copper. However, it is possible that within the lifetime of this review higher speeds will be available, and this is already the case in other jurisdictions.

3.64 ComReg has considered whether this suggests that a separate market should be defined. The preliminary view is that a narrower market is not appropriate. ComReg does not believe that the underlying infrastructure is the defining feature of the terminating segment market. There is not a clear distinction between terminating segments delivered over fibre and terminating segments delivered over copper in terms of the product delivered. This is particularly pertinent, given that within the time of the review, it is likely that technologies and infrastructure will be rolled out which will facilitate speeds of up to 25Mb/s.

3.65 ComReg's view is that a supplier which supplied high bandwidth or low bandwidth terminating segments would be able to supply terminating segments of other capacities in response to a small but significant price increase, and so there should be no further differentiation in the terminating segments market on the basis of bandwidth.

Demand considerations

3.66 ComReg has also considered demand for terminating segments. It can be noted that terminating segments currently range from 64 kb/s to 155Mb/s and above. Clearly, at the extremes, a customer wishing to buy an STM-1 terminating segment would not consider multiples of 64kb/s to be a realistic substitute, either from a functional or from a cost perspective. However, ComReg believes that the range of capacities on offer constitutes a chain of substitution, and that there is no clear and persistent break in the chain. This means that the wholesale purchaser of leased lines would be able to substitute multiples of higher or lower capacity leased lines up and down the range of capacities on offer, although not from top to bottom. There may be breaks in the chain according to the eventual retail application, but at the wholesale level, ComReg does not believe that there are clear and consistent breaks in the possibility of substituting different bandwidths. This supports the supply-side analysis that there should be no further differentiation on the basis of bandwidth.

Q. 7. Do you agree that the market for terminating segments should not be further differentiated by bandwidth? Please provide a reasoned response.

Are all products offering fixed permanent point-to-point symmetric termination in the same market?

3.67 It is ComReg's view that products which offer dedicated, symmetric, point-to-point connection to a network termination point at least on one end belong in the market for terminating segments. This is the case irrespective of the technology used to deliver the product.

3.68 ComReg recognises that there will be new and more cost-effective ways of delivering services, but where this is to do with process rather than product, then the services should be defined in the same market. For example, in the market for terminating segments, it is immaterial whether the product is delivered over fibre or copper. In other words, the concern is with the service being delivered, and the review remains neutral as to the technology used to deliver the service.

3.69 Currently, the market for terminating segments includes the terminating part of Wholesale Leased Lines and the End User Links (EUL) of Partial Private Circuits (PPCs). It is ComReg's view that all current or prospective products which offer similar functionality and similar characteristics form part of the same relevant market.

Q. 8. Do you agree that all products offering fixed permanent point-to-point symmetric termination belong in the same market? Please state the reasons for your opinions.

What is the geographical scope of the market for terminating segments?

3.70 ComReg proposes that the geographical scope of the market for terminating segments is national. As discussed in the context of the market for trunk segments, the definition of a narrower geographical market would involve considering whether an increase in price in one area would attract investment from firms operating in other areas, and whether this would constitute a sufficiently sharp break in conditions of competition, and the establishment of a clear and persistent boundary.

3.71 The market for terminating segments is concerned with providing dedicated capacity to an end-user. While there are likely to be variations in the demand and supply conditions associated with, for example, groups of end-users who are more geographically concentrated, ComReg does not believe that these variations occur within clear and persistent boundaries. It is proposed that the geographical scope of the market is national.

Q. 9. Do you agree that the market for the terminating segments of wholesale leased lines is national in scope? Please provide reasons for your response.

Summary of Preliminary Conclusions on Proposed Market Definition

3.72 The analysis which has been carried out indicates that :

- There are separate markets for the trunk segments and terminating segments of leased lines. There is a break in the economics of supply and demand, such that a supplier of trunk segments, which are high capacity and on the core network, would not be able to supply terminating segments without incurring significant costs.
- Self-supply should only be considered part of this market where an operator has spare capacity which could be offered on the wholesale market, and where a customer could switch relatively easily.
- The markets for trunk segments and terminating segments should not be further differentiated by bandwidth.
- All high bandwidth products which offer fixed, permanent, broadly symmetric connection between two points belong in the same wholesale trunk segment market, irrespective of the technology used to deliver the product.
- All products offering fixed, permanent, symmetric connection to an end user belong in the market for wholesale terminating segments, irrespective of the technology used to deliver the product.
- The geographic scope of the market for wholesale trunk segments and the market for wholesale terminating segments is national.

4 Relevant Market Analysis

Introduction

4.1 Having defined the scope of the relevant product and geographic market(s), the next step is to determine if the relevant market(s) is/are effectively competitive or if significant market power ("SMP") exists.

4.2 The European Community regulatory framework for electronic communications networks and services has aligned the concept of SMP with the competition law definition of dominance advanced by the European Court of Justice ("ECJ") in *United Brands v. Commission*:

"The dominant position thus referred to [by Article 82] relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers" [23].

4.3 Article 14 of the Framework Directive effectively mirrors this definition of dominance and equates SMP with *"a position of economic strength affording it [the undertaking] the power to behave independently of competitors, customers and ultimately consumers"*.

4.4 The above definition of SMP identifies three key sources of competitive constraint that may affect an undertaking's ability to profitably sustain price levels above, or to restrict output below competitive levels. These potential constraints derive principally from[24]:

- Existing competitors;
- Potential competitors; and
- Strong buyers[25].

[23] Case 27/76 *United Brands v Commission* [1978] ECR 207, para. 65.

[24] See also OFT Guideline (2004), Assessment of Market Power, Understanding Competition Law, para. 3.3.

[25] Although an undertaking may not be subject to competitive constraints from existing competitors, potential competitors or large buyers, in markets subject to ex-ante regulation an undertaking may still be restricted from profitably sustaining prices above, or reducing output below competitive levels by way of regulatory controls imposed by the NRA. Notwithstanding this, it is necessary to also consider the potential ability of the undertaking to exert market power in the absence of such ex-ante SMP regulation. To do otherwise might lead to a finding of non-dominance on the basis of regulatory remedies that would cease to exist following the review and in the absence of which the operator may be able to exert market power and possibly engage in anti-competitive behaviour. The purpose of the regulatory remedies is to mitigate the likely anti-competitive effects arising from a position of SMP. The key question is therefore how is the operator in question likely to behave if it were free from SMP regulatory constraints and if the continued imposition of remedies is as such warranted.

4.5 A number of factors must be considered in coming to a view on the extent to which each of the above possible constraints actually influence an undertaking's ability to exert market power in reality. Such factors include[26]:

- *Market shares and concentration levels over time;*
- *Level of competition posed by existing competitors;*
- *Barriers to entry, e.g., economies of scale/scope, vertical integration, etc;*
- *Barriers to expansion, e.g., customer switching costs, etc;*
- *Overall threat posed by potential competition; and*
- *Strength of any countervailing buyer power.*

4.6 The above is not intended as a checklist of all possible factors relevant for determining SMP. Rather it is intended as a guide to the types of evidence that help provide an insight to the relevant market dynamics. Furthermore, the relative importance of each factor may vary from one analysis to the next as the market characteristics/dynamics change. Consequently, flexibility needs to be applied in interpreting the above criteria. In addition, many of the above factors, while presented separately, may in fact be interrelated and all available evidence must be considered as a whole before a determination on SMP can be made[27].

4.7 This analysis goes on to consider potential constraints on competition in the markets for the wholesale trunk segments and the wholesale terminating segments of leased lines. In line with approach described above, the analysis considers firstly existing competition in the market, secondly potential competition, and finally an assessment of countervailing buyer power examines the impact of any strong buyers.

Existing Competition

4.8 ComReg's analysis of existing competition in the markets considers three key elements. First of all, an examination of **market structure** identifies the

[26] The SMP Guidelines also identify potentially relevant factors in an SMP analysis as including *inter alia*:

Overall size of the undertaking;

Control of infrastructure not easily duplicated;

Technological advantages or superiority;

Absence of or low countervailing buyer power;

Easy or privileged access to capital markets/financial resources;

Product/services diversification (e.g., bundled products or services);

Economies of scale;

Economies of scope;

Vertical integration;

A highly developed distribution and sales network;

Absence of potential competition;

Barriers to expansion.

[27] See also Oftel (now Ofcom) (2002), Oftel's market review guidelines: criteria for the assessment of significant market power, paras 2.1 – 2.2.

mechanics of supply and demand. Secondly, a review of **market shares** presents data and assesses trends. Thirdly, ComReg assesses whether any competitor is able to **act independently** of other competitors. The analysis is based on an examination of historical trends and a consideration of likely future developments in the market.

Market structure

Supply

4.9 There are currently four[28] main suppliers of wholesale leased lines in Ireland. They are:

- Eircom;
- BT Ireland;
- ESBT; and
- e-Net.

4.10 Eircom and BT Ireland are active in both the trunk and terminating segment markets. ESBT predominantly supplies trunk segments only, and e-Net operates metropolitan rings and connections to the rings.

4.11 The suppliers have significantly different market profiles, which affects competitive conditions in the market.

4.12 Eircom supplies both trunk and terminating segments of wholesale leased lines. At the last review, Eircom was mandated to provide two products in the wholesale terminating segment market. These are Partial Private Circuits (PPCs) and traditional Wholesale Leased Lines (WLLs). Both products are subject to regulated price controls. The wholesale market has seen a migration from traditional wholesale leased lines to PPCs over the last two years. However, there remains a significant installed base of WLLs, and it is ComReg's view that this base will persist during the lifetime of this review. Further, it is likely that there will continue to be circumstances in which WLL, rather than PPC, is the appropriate product. Examples would include circumstances where moving to a PPC would incur unacceptable switching costs, or where local demand is insufficient to justify infrastructure investment.

4.13 BT Ireland is active in the markets for wholesale trunk and terminating segments. BT Ireland resells some Eircom terminating segments (for the last mile connection to end-users), primarily to leverage its sale of wholesale trunk segments.

[28] There is some activity from other operators, but at such a low level the impact on the market is negligible.

4.14 The Irish Government has actively promoted market entry, with the aim of increasing Ireland's broadband penetration. The 2000-2006 National Development Plan included financial provision for the construction of fibre optic networks by alternative operators, and the Broadband Action Plan and Connectivity Framework Deals provided support for access and use of those networks.[29]

4.15 ESB Telecom was established in 2001, as a wholly-owned subsidiary of the Electricity Supply Board. It has been a beneficiary of government funding for network construction under the National Development Plan. ESB Telecoms built and owns a 1300 km fibre optic network, constructed in a "figure of 8" around Ireland. It comprises 48 core fibre and is wrapped on the electricity high voltage network. ESBT offers managed bandwidth services and dark fibre. The relevant product offering in the context of this review is point-to-point connectivity using SDH and Ethernet technologies. ESBT is mainly active in the wholesale market. Access to the network is at POPs or in certain circumstances direct to customer location. ESBT supplies high to very high capacities on its national core network.

4.16 The National Development Plan also includes a programme to address the perceived high speed infrastructure deficit by constructing high speed open access broadband networks in association with local and regional authorities. The MANs are publicly owned, while allowing all telecommunication operators open access to the networks. They are fibre-based and technology neutral resilient networks. The 27 phase 1 MANs are managed by e-Net, who were awarded the 15-year services concession contract in June 2004.

4.17 E-Net operates as a wholesaler of access to the MANs and offers a full suite of products including ducting, sub-ducting, dark fibre, high level managed capacity, co-location facilities and relevant auxiliary services. Under Phase One, twenty-seven networks have been completed and handed over to E-Net. (Phase 2 of the MANs will be built in a further 90 towns.)

4.18 E-net operates as a wholesaler of access to the MANs. E-net operates metropolitan rings (trunk segments) and offers connection to the rings (terminating segments). It also offers connection between customer sites (terminating segments). E-net thus has a key position in the market as it offers access from the MANs to ESBT and other infrastructure, and vice versa.

4.19 Although both ESBT and E-net have been in the market for some time, both companies have seen rapid growth rates since the period of the last review, and the companies' own projections indicate that this is expected to continue.

Demand

4.20 In general, wholesale leased line services are purchased:

- By mobile operators, who purchase both trunk and terminating segments. Trunk segments provide core network bandwidth. Terminating segments are typically used to provide Radio Base Station (RBS) backhaul, which connects the mobile operator's base station with the network of the other operator.

[29] http://www.dcmnr.gov.ie/Communications/Communications+Development/Metropolitan+Area+Networks

- By OAOs looking to extend their own networks, by buying trunk core capacity, perhaps between regional nodes, and/or by buying terminating segment connection to specific end-users.

- By OAOs seeking to enter specific retail markets.

4.21 By revenue, mobile operators account for almost 40% of demand for the total wholesale leased line market. OAO purchases for the extension of their own networks and for specific retail applications account for around 60% of the overall market[30].

Market Shares and Concentration Levels over Time

4.22 Market shares are not on their own determinative of SMP but high market share, while not determinative, is indicative of dominance. It is clear from EC jurisprudence and the SMP Guidelines that concerns about SMP are more likely to arise in instances where an undertaking holds a large market share sustained over a period of time. According to established case law and the SMP Guidelines:

"…very large shares are in themselves, and save in exceptional circumstances, evidence of the existence of a dominant position. An undertaking which has a very large market share and holds it for some time… is by virtue of that share in a position of strength…"[31]

4.23 The European Court of Justice stated further in *AKZO* that a market share of persistently above 50% could be considered to be very large so that in the absence of exceptional circumstances pointing the other way, an undertaking with such a market share could be considered to be dominant[32].

4.24 ComReg recognises that large market shares are not in themselves sufficient to form the basis of a finding of SMP and that other factors that may contribute to SMP must also be taken into account. Therefore, ComReg does not view the existence of large market shares on their own as being determinative of the question of whether or not SMP exists but nonetheless considers it an important starting point in the analysis.

4.25 In order to quantify the market, ComReg issued a data request to several stakeholders in the leased lines market, in August 2006. This was supported by discussion with operators, and ComReg sought detailed information from suppliers and purchasers of wholesale leased lines. As the data request was issued prior to the market definition exercise, ComReg asked for information to be provided in such a manner as to facilitate various alternative potential definitions of the market.

[30] Calculated from responses to ComReg's data requests.

[31] Case 85/76 *Hoffmann-La Roche v Commission,* [1979] ECR 461, [1979] 3 CMLR 211, para. 41; and the SMP Guidelines, para. 75.

[32] Case C-62/86 *AKZO Chemie BV v Commission* [1991] ECR I-3359, para. 60.

4.26 ComReg has calculated the market shares based on volume and on revenue. Because ComReg collected data both from suppliers and purchasers of wholesale leased lines, it was able, in most cases, to cross-check information.

4.27 ComReg considered the EC guidelines on possible methods used for measuring market size and market share. The EC notes that volume sales and value sales may each provide useful information for market measurement. In considering the leased line markets, the EC states that :

"…leased line revenues, leased capacity or numbers of leased line termination points are possible criteria for measuring an undertaking's strength on leased line markets…..Of the two criteria, leased line revenues may be more transparent and less complicated to measure"[33]

4.28 The objective of measuring market size and share is to help assess the relative strength and position of each provider. In order to present a complete picture of the market, ComReg has calculated market share by volume and by revenue. Details of the methodology used are provided in Annex C. However, ComReg agrees with the EC guideline that market share by revenue provides a more reliable measure of market power in the leased line markets.

Market for trunk segments

4.29 The data below demonstrates the market share figures as of August 2006[34].

4.30 Table 1 - market shares in the trunk segment market[35]:

Trunk Market		
Operator	**Share by bandwidth %**	**Share by revenue %**
Eircom	40.4%	61.2%
BT Ireland	13.4%	24.2%
ESBT	46.2%	14.3%

Table 1

4.31 At the time of the previous review, Eircom's market share was calculated as 85% when measured by volume, and 80% when measured by revenue. However, it should be noted that this calculation was for the wholesale leased line market overall, and so did not differentiate between trunk and terminating segments.

4.32 For all operators, there is a wide discrepancy between shares based on revenue and shares based on capacity. In the case of Eircom, its share of the market by capacity ranks behind ESBT, but its revenue share is well over half of the total market

[33] 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, para 76.

[34] In drawing conclusions about these markets, market share data was just one data source to which ComReg referred.

[35] Source – ComReg data analysis September 2007.

revenue. ESBT has a share by revenue which is significantly less than its share of capacity.

4.33 There are several possible factors which can explain this. It may be that revenue per volume is not evenly distributed. This means that if we were to calculate revenue per unit of capacity, lower capacity circuits may generate more revenue per unit than higher capacity circuits. In this case, an operator which primarily supplied very high capacity circuits, such as ESBT, would typically have a much higher share of volume than it would of revenue.

4.34 Another factor to be considered is differences in pricing amongst operators. Eircom's pricing is currently regulated, and typically, regulated prices act as a ceiling. If it is shown that other operators charge less, then an outcome would be that other operators would have a higher share based on capacity, and a lower share based on revenue.

4.35 The key change in the trunk segment market since the time of the last review has been the growth of ESBT's market share. Prior to the last review, Eircom's market share had been relatively stable for several years. However, while Eircom's market share by revenue remains in excess of 50%, ESBT is now supplying almost half of all capacity in the trunk market.

Market for terminating segments

4.36 Table 2 below shows the market shares as of August 2006.

Terminating Market		
Operator	**Share by volume %**	**Share by revenue %**
Eircom	92.6%	83.6%
BT Ireland	6.7%	13.6%
E-net	0.3%	1.0%
Others	0.4%	2.0%

Table 2

4.37 Market shares in the terminating segment market indicate that OAOs combine to make up just over 7% of the market by capacity, but over 16% by revenue. The relationship between volume and revenue is the opposite way round to the trunk segment market, where OAOs had high volume but low revenue, and reflects the difference in market characteristics. In the trunk market, operators are more likely to build own infrastructure between points of connection, whereas in the terminating segment market, the connection is to a specific end-user.

4.38 Since the time of the last review, there has been a significant shift within the terminating segment market from the purchase of traditional leased lines to the purchase of Partial Private Circuits (PPCs). Data provided to ComReg in the course of this review suggests that most OAOs are migrating from WLLs to PPCs where this is possible.

Changes to market share since previous review

4.39 In considering market share movement since the time of the last review, it must be noted that the data has been collected on a different basis in each of the reviews, and so a direct comparison of market share rates is not valid. However, using the current market share methodology, ComReg believes that Eircom's share of the trunk segment market was considerably higher at the time of the last review than it is now. Several general points can be made:

- In the market for **trunk segments**, market entry by ESBT has taken market share from both Eircom and BTI. Eircom's market share remains above 50% when measured by revenue, but below 50% when measured by volume. ComReg's assessment is that Eircom's share of the trunk segment market is likely to continue to fall.

- In the market for **terminating segments**, Eircom's market share remains very high, both when measured by volume and by revenue. There has been new market entry, but this is very recent and the impact on market share is still very limited.

Ability to Act Independently of Existing Competitors

4.40 The preceding section has established that Eircom has a market share in excess of 50% (by revenue) in the markets for trunk segments and for terminating segments of wholesale leased lines. However, Eircom's market share by volume is less than 50% in the trunk segment market, and it may be that there are factors in one or both of the markets which qualify the market power suggested by the revenue market share alone.

4.41 This section examines the extent to which suppliers in the wholesale leased line markets can act independently.

Market for trunk segments

4.42 It is important to consider not only the current state of the market, but also the extent to which competitors are likely to be able to act independently over the lifetime of this review. Since the time of the last review, ESBT has entered the market, and has built market share at the expense of Eircom, and to some extent of BTI. ComReg's discussion with purchasers of leased lines suggests that they increasingly view ESBT and BTI as alternatives in the trunk segment market, although it should be noted that alternative operator coverage is limited to certain routes, and does not have the ubiquity of that of Eircom. ComReg understands that the newer market entrants have significant additional capacity available. Having already incurred the sunk costs associated with market entry, it is conceivable that product and service offerings in the trunk segment market could be expanded relatively quickly and without incurring significant extra costs.

4.43 Another factor which has an impact on the trunk segment market is the ability of purchasers to self-supply. ComReg is aware that this is particularly important in the case of the mobile operators. It was noted above that mobile operators currently account for over a third of the purchasing in the wholesale leased line markets. ComReg does not believe that mobile operators have an interest in entering the wholesale leased line market, in the sense of making capacity available to another operator. However, over the last two years, mobile operators have been increasing the proportion of their networks which are self-supplied. Discussions with operators confirm that this trend is likely to continue.

4.44 ComReg notes that the trend for mobile operators to seek to supply their own trunk capacity reduces the size of the wholesale leased line market, as self-supply without the potential or inclination to offer capacity on a wholesale basis to other operators is outside the scope of the market.

Market for terminating segments

4.45 ComReg suggests that ability to act independently from competitors is much more pronounced in the market for terminating segments. The terminating segment market has seen some market entry, but the impact of new entrants on the market has been much less than in the trunk market. The possibility of self-supply is also more limited in the terminating segment market. ComReg is aware that some mobile operators may be in a position to self-supply local connections using technologies such as microwave radio, and that this would serve to reduce the overall size of the wholesale market. However, the nature of the investment required at this network level suggests that the self-supply of terminating segments is not likely to have a major impact on reducing the ability of Eircom to act independently.

Summary of preliminary conclusions on existing competition

4.46 In the market for **wholesale trunk segments**, ComReg has analysed market share by volume and by revenue. By volume, ESBT has almost 50% of the market, while Eircom has 40% and BT Ireland 11%. By revenue, Eircom has over 60% of the market, while BT Ireland has 24% and ESBT 14%.

4.47 ComReg notes the impact of the entry of ESBT, and the consequent change in the dynamics of the trunk market. It is suggested that there are now one or more competitors on some major routes between urban centres, and that this may act to constrain the ability of the incumbent to behave independently. It is noted also that there is excess capacity on some parts of the core network. However, ComReg notes that Eircom's share of the market by revenue remains in excess of 50%.

4.48 In the market for **wholesale terminating segments**, Eircom's market share remains above 90% by volume and above 80% by revenue. There has been no significant challenge to Eircom's dominance in this market since the time of the last review, and no market entry on a scale which would change the competitive landscape. ComReg has not seen evidence which would suggest that a change is likely within the lifetime of this current review.

Q. 10. Do you agree with ComReg's analysis of existing competition in the wholesale leased line markets? Please provide reasons for your response.

Potential Competition

4.49 In assessing the possibility for existing and potential new entrants to act as a constraint on the undertaking alleged to have SMP over the period of this review, ComReg analyses the nature and extent of any barriers to firms both entering and expanding in the relevant market. This section examines firstly the barriers to entry to the wholesale leased lines markets. This includes a consideration of the potential impact of sunk costs, economies of scale and scope, control of infrastructure, and organisational integration. The analysis then considers potential barriers to expansion.

Barriers to Entry

4.50 Barriers to entry generally comprise any disadvantage that a new entrant faces when entering a market that incumbents do not currently face. According to the Explanatory Memorandum accompanying the Relevant Markets Recommendation:

"… *high structural barriers may be found to exist when the market is characterised by substantial economies of scale, scope and density and high sunk costs*"[36].

Sunk Costs

4.51 Entry to, and expansion in, the wholesale leased line market involves considerable sunk costs. Initial investment is required in trenches, duct and underground plant. While there may be some resale value, the majority of these costs are not likely to be recovered on any eventual exit from the market.

4.52 The mere existence of sunk costs does not automatically imply that entry barriers are high. It is acknowledged that a certain level of sunk costs will always be needed to enter most markets, and that the incumbent may also have had to pay a similar level of sunk cost before it entered the market. Notwithstanding this, the OECD's 2005 report on Barriers to Entry notes that in some circumstances it is more difficult for new entrants to break into a market than it was for the incumbent that was the first firm to enter and that "*when a market is already occupied by an incumbent potential entrants might face an entrenched brand or brands, as well as demand that is insufficient to permit efficient operation*".

4.53 The OECD Report notes further that where sunk costs are high, an established incumbent who has already incurred substantial sunk investments may have the ability to respond to new entry by charging prices above its own average costs but below what the new entrant would need to cover its sunk costs of entry. The sunk costs create a decisional asymmetry that is capable of deterring entry because incumbents have already paid them and entrants have not. If sunk costs are high relative to the post-entry price or expected profit opportunity from being in the market, then entry may be deterred - "*In general, the higher the sunk costs of entry, the less likely it is that a firm will enter*".

[36] Explanatory Memorandum to the Recommendation, p. 10.

4.54 In considering future developments in the wholesale leased line markets, ComReg notes that much of recent market entry has occurred with the support of public-funded initiatives. Considerable funding has been made available for the construction of fibre-optic networks, and on support for increasing the use of services on these networks. This must be taken into account when assessing the extent to which sunk costs constitute an enduring barrier to entry, as it could be argued that new entrants have been at least partially shielded from the effects of sunk costs.

4.55 Overall, ComReg suggests that the market for **trunk segments** of leased lines is characterised by sunk costs associated with the initial investment needed to enter the market. However, it is suggested that these costs do not constitute an insuperable barrier to entry. Even taking into account Government financial support, this is borne out by the actual entry into this market.

4.56 In the market for **terminating segments**, the nature of the initial infrastructure investment means that sunk costs continue to constitute a high barrier to entry.

Economies of Scale, Scope and Density

4.57 Economies of scale, scope and density refer to potential advantages that larger incumbents may enjoy over smaller new entrants. Economies of scale generally refer to the cost advantage which a large-scale operator may have over a smaller operator where the marginal cost of production decreases as the quantity of output produced increases. Economies of scope refer to the potential efficiencies which may be gained by a firm jointly producing a range of goods and services, e.g., where a cable network could be used to provide TV, voice telephony and Internet access services simultaneously. Economies of density refer to potential efficiencies associated with supplying customers who are geographically concentrated.

4.58 It is ComReg's view that the wholesale leased line markets are characterised by large economies of scale. This is primarily because of the initial costs involved in building infrastructure, such as ducts and cable. Once the initial costs have been sunk, the cost of supplying additional circuits, or higher capacity, is relatively low.

4.59 The ability to exploit scale economies is potentially available to any operator which has made the necessary investment. In the **trunk market**, an operator makes the investment in infrastructure between two points, and is then able to manage its service offering between these locations. ComReg has considered the Minimum Efficient Scale (MES) which can be achieved in the market for trunk segments. The MES represents the minimum number of customers, volume of output or level of sales which has to be achieved for an operator to be cost-efficient. It is ComReg's view that economies of scale constitute a moderate barrier to entry in the market for trunk segments, because the MES is achieved only with a fairly high level of sunk costs.

4.60 In the **terminating segment** market, the operator's costs are much more variable, and depend on factors such as customer density. For example, the more leased line customers which are served by one local exchange, or at one customer site, the cheaper it will be (per customer) to supply them. Therefore, an operator which has a widespread access network will be much more able to exploit economies of scale in the terminating segment market. The MES achieved in the terminating segment market involves a very high level of sunk costs, and economies of scale constitute a high barrier to entry.

4.61 An operator could exploit economies of scope where the network used to carry leased lines could be used to carry a range of additional products. It is ComReg's view that all operators offering wholesale **trunk segments** would be able to achieve economies of scope, and that all operators currently carry a range of services across the network.

4.62 In the market for **terminating segments**, ComReg suggests that the ubiquity of Eircom's network, and the range of products and services it offers, allow it to achieve greater economies of scope than would other operators.

4.63 The ability to achieve substantial economies of density is evident in both of the wholesale leased line markets, where the cost of supply per customer decreases in line with the number of customers supplied.

4.64 In considering the extent to which economies of scale, scope and density constitute barriers to entry; ComReg notes that the wholesale leased line markets are associated with high sunk costs on market entry and expansion. This acts to exacerbate the effects of economies of scale, scope and density. The effects are greatest in the market for terminating segments, largely because the potential revenue per customer is much lower than in the trunk market.

Control of Infrastructure/Inputs Not Easily Replicated

4.65 The SMP Guidelines note control of infrastructure not easily duplicated as a relevant criterion for assessing whether SMP exists. This may be relevant where, for example, access to a certain infrastructure is necessary to produce a particular product or service, the required infrastructure is exclusively or overwhelmingly under the control of a certain undertaking and there are high and non-transitory barriers associated with replacing the infrastructure in question[37]. According to the SMP Guidelines, a network operator can be in a dominant position if the size or importance of their network affords them the possibility of behaving independently from other network operators[38]. Ownership of a significant infrastructure may confer an absolute cost advantage on the incumbent and the cost and time involved in operators replicating the infrastructure in question may pose a significant barrier to new entry. In addition, it may be possible for the owner of the infrastructure in question to leverage their market power into horizontally or vertically related markets. This is discussed further in the "Vertical Integration" section below.

4.66 In the **trunk segment** market, in order for an operator to be able to compete with Eircom in the provision of wholesale trunk segments through supply to other operators, it would need to be able to replicate Eircom's trunk infrastructure on the routes it wished to supply.

4.67 To assess the extent to which this is possible, ComReg has examined maps provided by Eircom and other operators showing the extent and coverage of their

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[37] See Revised ERG Working Paper on the SMP concept for the new regulatory framework, ERG (03) 09 rev3, September 2005, available from: http://erg.eu.int/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf#search=%22ERG%20working%20paper%20SMP%22, p. 5.

[38] Ibid, paras 81-82.

trunk networks. As would be expected, other operator network build is concentrated on routes which are likely to be the most significant in terms of capacity requirements and revenue potential. That is, routes between main urban centres, and within the commercial parts of Dublin.

4.68 ComReg suggests therefore that the infrastructure associated with the provision of trunk segments can be replicated, subject to constraints identified above in the discussion of sunk costs.

4.69 In the market for **terminating segments**, replication of the associated infrastructure would require an operator to be able to replicate Eircom’s access network. ComReg has considered the extent to which Eircom’s ownership of its access network constitutes a barrier to entry or expansion. The importance of sunk costs and the potential to achieve economies of scale, scope and density are all related to Eircom’s control of a widespread network which would not be easy to replicate.

4.70 ComReg notes that instances where mobile operators, for example, are able to use microwave to self-supply terminating segments could be seen as examples of replication of Eircom’s access network. However, this is a small part of the overall market for terminating segments, and it is ComReg’s view that its significance is marginal.

Vertical and horizontal Integration

4.71 A vertically integrated operator can enjoy significant efficiencies arising from its presence in upstream and downstream markets. Such efficiencies can also be passed to consumers in the form of cheaper prices, lower transaction costs and/or enhanced product quality. However, vertical integration can also constitute an entry barrier where the presence of a firm at multiple levels of the production or distribution chain raises the costs of new entry (e.g., where prospective new entrants perceive the need to enter multiple markets simultaneously to pose a viable competitive constraint on the integrated operator) and/or increases the possibilities for the integrated operator to foreclose competition at one or more levels in the value chain.

4.72 A firm with market power in one market may also be capable of leveraging that market power into related markets. In the wholesale leased line markets, it may be possible for an integrated operator to use its position in the wholesale markets to leverage control into the downstream retail markets, and so reinforce entry barriers to the wholesale markets. It may also be possible for an integrated operator to use its position in the terminating segment market to leverage horizontally into the trunk market, and vice versa.

4.73 ComReg has considered the extent to which an integrated operator could leverage dominance between the retail and wholesale markets for leased lines. Where a retail circuit included a trunk segment, an integrated operator would self-supply this, and so a proportion of the trunk market would be closed to other operators. This would put the integrated operator at an advantage, as it would have a predictable high volume of trunk sales, and would be better able to exploit economies of scale.

4.74 In the presence of a vertically integrated operator, a market entrant may perceive it as necessary to enter the upstream and downstream markets, in effect mirroring the structure of the vertically-integrated operator. However, assessment of the wholesale leased lines markets suggests that this is not the case, and that alternative operators – for example, mobile operators – have not felt compelled to offer a vertically-integrated product.

Barriers to Expansion

4.75 Barriers to growth and expansion are obstacles that a new entrant or smaller existing competitor (that is equally, or more, efficient than the incumbent) faces in its ability to grow or expand in a particular market and which limit its ability to pose a viable competitive threat to the incumbent over the medium to longer term. Barriers to entry and expansion are closely related as many of the factors that make entry harder also make it harder for entrants who have recently entered the market to grow or expand their market shares. Furthermore, high barriers to expansion may further discourage new entry.

Switching Costs

4.76 These refer to real or perceived costs that customers face when switching their purchases between suppliers but which are not incurred by remaining with the existing supplier[39]. Switching costs may act as both a barrier to entry and expansion. Even where the products of alternative providers are similar or identical to those provided by the incumbent, the presence of switching costs may make it more difficult for rivals to attract significant numbers of customers from the incumbent. Furthermore, if there are high sunk costs and significant economies of scale, scope or density and/or it is a relatively mature market, then the presence of high customer switching costs may pose an additional significant barrier to new entry/expansion.

4.77 The wholesale leased line markets are characterised by significant switching costs. Of particular note are the following:

- Contracts are generally long-term, with roll-over clauses or penalties for early termination.
- Buyers tend to be informed and sophisticated, but there are relatively few purchasers.

4.78 ComReg suggests that switching costs are high, in both the market for trunk segments and the market for terminating segments. It is difficult for customers to switch while they are within contract. Switching at the end of a contract period is possible, but requires a long lead time, and may incur additional investment costs.

[39] OFT (OFT 655), April 2003, Economic Discussion Paper Switching Costs Part one: Economic Models and Policy Implications, p. 1.

Summary of preliminary conclusions: Overall Ability to Act Independently of Potential Competition

4.79 In the market for **trunk segments**, ComReg has assessed the nature and extent of barriers to entry and expansion, and the overall scope for potential competition to arise in the relevant market.

4.80 Preliminary conclusions are that:

- While high sunk costs and economies of scale are characteristics of this market, it is noted that there has been market entry, but that this has, to a large extent, been with public financial support.
- Switching costs in this market pose a significant barrier both to entry and expansion. Generally, contract terms are long and it is difficult and costly to switch supplier during a contract period. However, buyers are prepared to consider switching at the end of contract periods.

4.81 In the market for **terminating segments**, preliminary conclusions are that:

- High sunk costs and economies of scale constitute barriers to entry which are likely to be significant and non-transitory.
- Switching costs are a significant barrier to entry and expansion.

Q. 11. Do you agree with ComReg's analysis of potential competition in the markets for wholesale leased lines? Please provide a reasoned response.

Countervailing Buyer Power

4.82 A potential constraint on an undertaking's ability to exercise market power is buyer power. Countervailing buyer power can arise if, for example, a particular purchaser is sufficiently important to its supplier to influence the price or other terms and conditions of supply. The circumstances where countervailing buyer power might be observed include where a customer:

- Accounts for a significant proportion of the supplier's total output;
- Is well-informed about alternative sources of supply; and
- Is able to switch to other suppliers at little cost to itself or to self-supply the relevant product relatively quickly and without incurring substantial sunk costs[40].

4.83 ComReg has considered whether countervailing buyer power may be exercised in the wholesale leased line markets, and if so, what impact this may have on any SMP.

[40] See OFT Guideline (2004), Assessment of Market Power, Understanding Competition Law, paras 6.1 – 6.4.

4.84 For some suppliers of **trunk segments**, a very high proportion of their total output is purchased by a single customer. This would suggest that a customer in this position may be able to exercise buyer power, should alternatives exist at a reasonable cost and within a reasonable timeframe.

4.85 ComReg notes the following:

- For connectivity between the busiest inter-regional routes, there is now an alternative to the incumbent. Response to the data request indicated that capacity was available, and that prices were reducing, so that there may be an incentive to switch.
- There is some evidence of customer switching over the last two years, when contracts come up for renewal. ComReg's discussions with purchasers of trunk segments indicated a readiness to consider switching supplier. It was made clear that purchasers will increasingly combine network elements from more than one supplier.
- Some of the largest purchasers of wholesale leased lines may be able to self-supply as an alternative to continuing to purchase from other operators. Even if the provision of self-supply acted to reduce rather than replace the level of purchase, it could be considered as the exercise of buyer power.

4.86 ComReg's conclusion is that two factors suggest the potential exercise of buyer power in the trunk segment market. First, there are alternative products available, and while barriers to switching during a contract period are high, evidence shows that purchasers are prepared to switch at the end of a contract period. Second, some large purchasers may be able to move to self-supply some or their entire requirement. Technological changes, such as the ability to replace some circuits with microwave, or the possibility of operators shifting to dark fibre, increase this possibility.

4.87 The market for **terminating segments** is more diffuse than the trunk segment market, and purchaser power is consequently less concentrated. This means that there is less likelihood of an individual purchaser being able to exercise bargaining power.

4.88 Wholesale supply in the terminating segment market depends on a widespread access network, as the sunk costs involved are otherwise too high. Evidence of this is the extent to which other operators, even those with own infrastructure, use Eircom for the last mile to the end-user.

Summary of preliminary conclusions on countervailing buyer power

4.89 ComReg has assessed whether or not countervailing buyer power exists in the relevant market(s) and its preliminary conclusion is that buyer power is potentially significant in the market for trunk segments, but not in the market for terminating segments.

Q. 12. Do you agree with ComReg's assessment of countervailing buyer power? If not, please provide reasons for your response.

Summary of Preliminary Conclusions on Market Analysis

4.90 ComReg has analysed developments in the structure of the market since the previous review, and the nature and extent of any competitive constraints posed by existing and potential competitors and by any countervailing buyer power in the markets under consideration.

Market for trunk segments

4.91 ComReg's preliminary conclusions are that:

- Eircom's market share remains high, at just over 60% by revenue. However, market share has fallen over the last two years, since the time of the last review.
- Competition in the market has grown, especially since the entrance of ESBT. ComReg understands that there is spare capacity in the trunk segment market.
- High sunk costs and economies of scale are characteristics of the trunk segment market. However, it is ComReg's view that they do not pose insuperable barriers to entry, and indeed there has been market entry.
- The nature of the market is such that there are relatively few contracts, and contracts tend to be long-term. This means that the cost of switching can be substantial, and that change in the market is not rapid.
- However, ComReg believes that there is evidence of increasing countervailing buyer power due to the size of the undertakings involved, and to the increasing possibility of self-supply.

4.92 ComReg's preliminary conclusion is that, on balance, the market for trunk segments of wholesale leased lines is tending towards competition.

Market for terminating segments

4.93 ComReg's preliminary conclusions are that:

- Eircom has a very high and enduring market share, of just over 83% by revenue.
- Competition in the market is very limited and consists mainly of the resale of Eircom's product. ComReg notes that resale would not constrain Eircom's ability to act independently.
- Sunk costs and economies of scale are high, and constitute high barriers to entry.

- Countervailing buyer power is very limited.

4.94 ComReg's preliminary conclusion is that the market for the terminating segments of wholesale leased lines is not tending towards competition and is not likely to do so within the lifetime of this review.

Proposed Designation of Undertakings with Significant Market Power

4.95 Where ComReg determines, as a result of a market analysis carried out by it in accordance with Regulation 27 of the Framework Regulations[41] that a given market identified in accordance with Regulation 26 of the Framework Regulations is not effectively competitive, ComReg is obliged to designate an undertaking under Regulation 27(4) of the Framework Regulations as having significant market power.

4.96 Having regard to the preliminary conclusions of the above market analysis, ComReg is therefore of the provisional view that:

- The market for the trunk segments of wholesale leased lines is tending towards competition. No operator has SMP.
- Eircom should be designated as having SMP in the market for the terminating segments of wholesale leased lines.

Q. 13. Do you agree with ComReg's proposed SMP designation? If you disagree, please provide reasons for your response.

[41] European Communities (Electronic Communications Networks and Services) (Framework) Regulations, 2003 (S.I. No. 307 of 2003).

5 Proposed Market Remedies

Introduction

5.1 Where an operator is designated as having SMP on a relevant market ComReg is obliged, under Regulation 9(1) of the Access Regulations[42], to impose on such an operator the wholesale obligations set out in Regulations 10 to 14 of the Access Regulations.

5.2 ComReg highlights a number of actual and potential competition concerns below associated with the lack of effective competition that has been provisionally identified in the relevant market(s). In view of the significant potential for such competition problems to arise, ComReg deems *ex ante* regulation to be an appropriate complement to competition law for dealing with competition concerns arising in the relevant market(s). Accordingly, ComReg sets out a number of proposed remedies which it considers to be based on the nature of the competition problems identified and proportionate and justified in the relevant circumstances. The appropriateness and proportionality of the proposed remedies is further demonstrated by the Regulatory Impact Analysis carried out below in accordance with the Ministerial Direction (issued by the Minister for Communications Marine & Natural Resources pursuant to section 13 of the Communications Regulation Act, 2002) published in February 2003.

5.3 In this consultation, ComReg has proposed that the wholesale market for the trunk segments of leased lines is prospectively competitive, and that the market should not be subject to ex ante regulation. However, a leased line provides end-to-end connectivity, and this may involve network elements which do not fall within the regulated market for terminating segments. Regulations 5 (right to request and the obligation to negotiate interconnection) and 6 (power of the regulator to require end to end connectivity with powers of Regulations 10-14) of the Access Regulations apply to all operators, and apply to all markets, irrespective of whether or not the market is deemed to be competitive.

Potential Competition Problems

5.4 It is important to note in this discussion of possible competition problems that it is not necessary for ComReg to point to examples of actual anti-competitive activity within the meaning of Article 82 of the Treaty and/or Section 5 of the Competition Act, 2002 that have occurred or are occurring. The finding of dominance indicates the potential for competition problems to arise, and this is sufficient to justify the imposition of ex ante regulation. In considering the form which ex ante regulation should take, ComReg has been guided by experience in the market, in particular by the types of competition problem which continue to arise.

5.5 In determining what form of *ex ante* regulation is warranted in the relevant market(s), ComReg has carried out an assessment of potential competition problems that are likely to arise assuming SMP regulation is absent. In the absence of SMP regulation, a dominant undertaking has the potential ability to influence a range of competition parameters, including prices, innovation, output and the variety or quality of goods and services provided. Three broad types of

[42] European Communities (Electronic Communications Networks and Services) (Access) Regulations, 2003 (S.I. No. 305 of 2003).

competition problems may arise where an undertaking has SMP on one or more markets. These potential problems essentially involve conduct by the SMP operator that is aimed at:

- exploiting customers by virtue of its SMP position;
- leveraging its market power into adjacent vertically or horizontally related markets; and
- foreclosing or excluding competitors such as to protect its existing dominance on the market or markets in question.

5.6 Each type of problem is now described.

(i) Exploitative Practices

5.7 Economic theory suggests that where a firm possesses market power it is in a position to increase prices above and/or reduce output below competitive levels, thereby allowing higher than normal profits to be earned. These higher profits effectively create a wealth transfer from the consumer to the firm with market power. It is ComReg's view that an operator which was dominant in the market for the terminating segments of leased lines would be able to engage in exploitative practices, and would have the incentive to do so.

5.8 Examples of potentially exploitative behaviour by the SMP operator include:

5.9 **Excessive Pricing –** According to EU competition law, excessive pricing refers to a situation where the prices charged by a dominant undertaking are not closely equivalent to the value to the consumer and/or the cost of producing or providing the relevant service.[43] In line with established competition law practice, ComReg is likely to have concerns about excessive pricing in markets where price levels are persistently high and there is no effective pressure (e.g., from new entry or innovation) to bring them down to competitive levels nor is there likely to be over the time period of the review.[44] ComReg suggests that, given the barriers to effective competition analysed earlier, and in the absence of SMP regulation, there would be an incentive for Eircom to price excessively. This would raise input costs to retail operators and ultimately raise prices to end-consumers.

5.10 In order to address the potential for excessive pricing, ComReg notes that *ex ante* regulation is generally required. Competition law applied on an *ex post* basis is often unsuitable in preventing excessive pricing, and this is evidenced by the scarcity of successful *ex post* excessive pricing cases within EC Jurisprudence. An *ex ante* approach to excessive pricing does not offer adequate protection for consumers, as the effect on the market is often too late.

5.11 **Inefficiency/Inertia –** A firm with SMP in a relevant market may also, by virtue of the lack of effective competition in that market, be insulated from the need to innovate and improve efficiency to stay ahead of rivals.

[43] Case C 27/76 United Brands v. Commission, [1978] ECR 207, [1978] 1 CMLR 429. In United Brands the ECJ held that: "…charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied… is an abuse".

[44] OFT (April 2004) OFT 414a, Draft Guideline on Assessment of Conduct, para. 2.6.

5.12 It may also decide to withhold investment in related markets to delay or impede the development of competition in those markets, e.g., where the SMP firm has control over certain key inputs necessary to compete in downstream markets and delays upgrading those inputs or providing newer, potentially more cost effective, inputs in line with technological developments.

5.13 This may limit the development of new technology and/or lead to costlier and less efficient methods of production and consequently higher prices for consumers than would otherwise exist under competitive market conditions. Such inefficiency could potentially be considered an abuse under competition law given that Article 82(b) of the EU Treaty specifically gives as an example of an abuse the limitation of production, markets or technical development to the prejudice of consumers. For example, in *Merci Convenzionali Porto di Genova v. Siderurgica Gabrielli*[45] the refusal of dock workers (who had a monopoly for the loading and discharging of cargo on behalf of third parties in the port of Genoa) to use modern technology for the unloading of vessels meant that operations were more expensive than they would otherwise be. This failure to use new technology was found to constitute an abuse.

5.14 In the wholesale market for the terminating segments of leased lines, this type of competition problem may arise where there are long lead times to develop new products or variants of products, and where the SMP operator may not make inputs available in a timely manner.

(ii) Leveraging:

- *Vertical Leveraging*

5.15 Vertical leveraging arises where a vertically integrated operator has dominance at one level in the production or distribution chain, e.g., the wholesale level, and can potentially transfer this market power into potentially competitive downstream retail markets. In the wholesale market for the terminating segments of leased lines, this would mean that a vertically-integrated operator which was dominant in the wholesale market may have the incentive to use this power to affect the competitive conditions in related retail markets, such as the market for retail leased lines, or the markets for other services which rely on wholesale leased line products as an input. Examples of vertical leveraging can include refusal to deal, certain tying practices, margin squeeze, cross subsidisation to facilitate predatory pricing type behaviour, practices aimed generally at raising rivals' costs[46], etc.

5.16 Denial of access may be a constructive denial and it is not necessary for it to be an outright and categorical refusal to supply. Examples of these practices could include delaying tactics such as protracted negotiations for new entrants, discriminatory use or withholding of information, quality discrimination, strategic

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[45] Case C-179/90 [1991] ECR I-5889.

[46] Unlike predatory pricing, certain practices can be employed which unfairly raise a rival's costs and reduce competition and which do not necessarily require the SMP undertaking to incur short run losses. For example, an integrated firm with market power in an upstream market may have incentives to raise the price of the inputs it sells to its downstream rivals, thereby potentially raising their costs and reducing demand for their products. Furthermore, the integrated operator could potentially give priority to its own traffic at network bottlenecks or apply standards that are easier for its own retail affiliate to meet than for its downstream competitors. (See Krattenmaker, T.G. and S.C. Salop (1986) "Anticompetitive Exclusion: Raising Rival's Costs To Achieve Power over Price", Yale Law Journal, 96:209-93; Salop, S.C. and D.T. Scheffman (1987), "Cost-Raising Strategies", Journal of Industrial Economics, 36:19-34).

design, disproportionate entry criteria as well as unreasonable terms and conditions associated with access.

5.17 ComReg's analysis has indicated that Eircom has a continuing high market share in the wholesale market for the terminating segments of leased lines, and that there is a limited existence of other factors which would act to significantly dilute Eircom's potential market power within the timeframe of the review. ComReg therefore suggests that Eircom, as a vertically-integrated operator, would have the incentive to leverage its market power in the absence of SMP obligations.

- *Horizontal Leveraging*

5.18 Horizontal leveraging involves an undertaking which is dominant in one market using its market power to exert undue influence in other markets that are at the same level in the production or distribution chain. Examples of horizontal leveraging can include certain tying/bundling practices and cross subsidisation/predatory pricing type behaviour.

5.19 An operator which was dominant in the wholesale market for the terminating segments of leased lines may have an incentive to transfer market power to a related market such as the wholesale market for trunk segments of leased lines. For example, an SMP operator might have the incentive to offer an end-to-end product which covered the market for wholesale terminating segments and the market for wholesale trunk segments, in a way which tied the two markets, in order to foreclose market entry.

(iii) Exclusionary Practices:

5.20 In addition to any potential leveraging into vertically or horizontally related markets, the operator may attempt to defend its existing SMP position in the relevant market(s) by engaging in predatory behaviour or conduct aimed at foreclosing the market(s) concerned. Examples of potentially predatory behaviour include predatory pricing, exclusionary actions aimed at raising customer switching costs, raising rivals' costs and so on.

5.21 Dominance in the market for the terminating segments of leased lines could, absent regulation, potentially lead to predatory pricing as other operators sought to ensure end-to-end connectivity. The possibility of increasing customer switching costs is particularly relevant in this market, as customers generally have long-term contracts, and the costs of switching are already high. While the potential for engaging in exclusionary practices is of lesser concern than the other competition problems noted above, the infrequent nature of switching leased line contracts means that there may be an incentive for an SMP operator to engage in predatory behaviour on contract renewal.

Q. 14. Do you agree with ComReg's assessment of potential competition problems in the market for the terminating segments of wholesale leased lines? Please provide a reasoned response.

Principles in Selecting Remedies

5.22 In choosing remedies pursuant to Regulation 9(6) of the Access Regulations, ComReg must ensure they are:

- based on the nature of the problem identified;
- proportionate and justified in the light of the objectives laid down in section 12 of the Communications Regulation Act of 2002; and
- only imposed following consultation in accordance with Regulations 19 and 20 of the Framework Regulations.

5.23 The relevant objectives, as set out in section 12 of the Communications Regulation Act, 2002 which must be taken into account when applying remedies are as follows:

- to promote competition;
- to contribute to the development of the internal market; and
- to promote the interests of users within the Community.

5.24 ComReg's preliminary determination is that there is a lack of effective competition in the market for the terminating segments of wholesale leased lines, and it has undertaken a preliminary identification of potential competition problems in this market. ComReg believes that the remedies it proposes below are based on the nature of the problem identified, proportionate and justified in accordance with the objectives laid down in section 12 of the Communications Regulation Act, 2002.

Remedies Proposed

5.25 ComReg's consideration of appropriate remedies in this market for wholesale terminating segments of leased lines is discussed below in terms of:

- Access to and use of specific network elements and associated facilities;
- Transparency;
- Non-discrimination;
- Price Control and Cost Accounting; and
- Accounting Separation.

Access to and use of specific network facilities

5.26 ComReg proposes, pursuant to Regulation 13 of the Access Regulation, to continue to impose an Access obligation on Eircom for the terminating segments of wholesale eased lines. As stated in the Access Regulations, obligations can be imposed on operators 'to meet reasonable requests for access to, and use of, specific network elements and associated facilities, inter alia in situations where the national regulatory authority considers that denial of access or unreasonable terms and conditions having similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end-user's interest'.

5.27 The market analysis has indicated that, currently and within the period of this review, OAOs will need access to Eircom's network in order to deliver services to end-users which require wholesale terminating segments of leased lines as an input, and so allow them to compete with Eircom in the downstream market. A requirement on the SMP provider to provide wholesale access to its network is needed to facilitate competition in downstream markets by enabling competitors to compete without the need to invest in a ubiquitous network.

5.28 **ComReg proposes to continue to impose an Access obligation on Eircom for the terminating segments of wholesale leased lines.**

5.29 ComReg believes that the competition problems identified earlier indicate a continuing need for mandated products in the wholesale market for terminating segments.

5.30 Two types of wholesale product are currently mandated:

- Wholesale Leased Lines (WLLs); and
- Partial Private Circuits (PPCs).

5.31 The provision of Wholesale Leased Lines (WLLs) involves purchasing a full end-to-end leased line from the incumbent operator, while Partial Private Circuits (PPCs) allow an OAO to combine elements of their own network infrastructure with parts of Eircom's network. ComReg's view is that competition would best be served by encouraging OAOs to use PPCs rather than traditional WLLs where possible, because this involves a greater investment in infrastructure by operators, and a lesser reliance on reselling Eircom's product. However, ComReg also recognises that there is a continuing need for a Wholesale Leased Line product.

5.32 ComReg does not propose to mandate any specific new products at this time, but will monitor the extent to which the proposed obligations facilitate the development of new products or variants of products. However, as discussed in the market definition and market analysis, other products offering similar services to traditional WLLs and PPCs are included within the market definition, and so form part of the market for the wholesale terminating segments of leased lines. Existing wholesale products do not currently cater for technologies such as Ethernet, and ComReg envisages that existing products may need to be developed, or new products introduced, in line with demand in the wholesale market. ComReg is aware that the evolution of products is often associated with long lead times, and would seek to ensure that this does not unduly delay the ability of OAOs to offer competitive products.

5.33 **ComReg proposes to continue to mandate the provision of Wholesale Leased Lines and Partial Private Circuits.**

5.34 ComReg proposes that Eircom should continue to have an obligation pursuant to Regulation 13(2)(c), not to withdraw access to facilities already granted, unless this has been approved by ComReg. ComReg believes that this obligation is necessary to ensure that OAOs have sufficient certainty to provide retail services to the marketplace and so compete with Eircom.

5.35 In addition ComReg notes that Eircom's gradual migration to NGN technology might give rise to instances where Eircom might wish to withdraw access to existing facilities. ComReg has considered the issue with regard to withdrawal of access where an operator may be required to retain facilities already in place in a time when it is re-designing its network architecture and redeploying network infrastructure and where, access facilities, if not withdrawn, could impede development.

5.36 The reasoning that applies to Eircom's migration to NGN technology also applies to the possible migration between WLLs and PPCs. ComReg notes that the current technical characteristics of the PPC product would require a significant network rearrangement for most OAOs who wish to migrate from WLL to a PPC based solution.

5.37 It is proposed that Eircom should continue to seek ComReg approval before withdrawing access to existing facilities, and that ComReg's decision will be proportionate and justifiable and will take into account the potential impact on the market.

5.38 **ComReg proposes that Eircom should continue to have, as part of its Access obligation, an obligation not to withdraw access to facilities already granted, unless this withdrawal has been approved by ComReg.**

5.39 ComReg proposes, pursuant to Regulation 13(2)(c) and 13 (3) of the Access Regulations, to oblige Eircom to continue to provide specified information which supports wholesale leased line services. Specified information should include such information necessary for the provision of services, such as technical specifications, network characteristics, terms and conditions for supply and use, and prices.

5.40 **ComReg proposes to continue to oblige Eircom to provide specified information which supports existing and future wholesale leased line terminating segment services as part of its Access obligation.**

5.41 ComReg proposes to continue to impose the obligation on Eircom to meet reasonable access requests and to address any disputes accordingly. This obligation is pursuant to Regulation 13(1) of the Access Regulations.

5.42 ComReg believes that OAOs will need to avail of products within the relevant wholesale market that will allow them to develop retail offerings to compete in the retail market. An access remedy allows OAOs to make reasonable requests for products according to their specifications pursuant to Regulation 13 (2) (a) or (f) of the Access Regulations.

5.43 An obligation to meet reasonable access requests would allow OAOs to request variants of products (for example the provision of wholesale leased lines above 2Mb/s or non-traditional interface products, for example using Ethernet or symmetric DSL technologies) and is appropriate given the experience of OAOs and ComReg to date in requiring Eircom to introduce new products. ComReg does not propose at this stage to mandate the provision of any such new products or features but expects Eircom to consider requests for such from OAOs in the light of Regulation 13 (4).

5.44 **ComReg proposes to continue to impose the obligation on Eircom to meet reasonable access requests as part of its Access obligation.**

5.45 ComReg proposes that, pursuant to Regulation 13 (3) of the Access Regulations, those terminating segment leased line services which Eircom supplies at a wholesale level should be provided on terms and conditions which are fair, reasonable and timely. In this regard ComReg proposes that terms and conditions should be supported by a Service Level Agreement ('SLA'). ComReg proposes that the SLA should ensure that Eircom have a commercial incentive to provide products and services which are fit for purpose.

5.46 ComReg's view is that the SLA is important in order to allow OAOs to approach Eircom and ensure that their requests for new or amended products are treated promptly and appropriately.

5.47 Addressing issues such as the speed of provisioning and repair are also absolutely critical for the development and operation of a fit for purpose product. ComReg therefore proposes to support the effective functioning of the products by introducing a set of regulatory product performance metrics, and publishing the results of the application of these metrics.

5.48 The actual specification of performance metrics will be subject to further consultation. For the purposes of this consultation, ComReg seeks to establish the principle that a set of performance metrics should be established by the regulator.

5.49 In addition, pursuant to Regulation 13(2)(b) of the Access Regulations ComReg is of the preliminary view that Eircom should have the obligation to negotiate in good faith with the undertakings requesting access.

5.50 **Eircom should continue to provide wholesale terminating segment leased line services on terms and conditions which are fair, reasonable and timely. These terms and conditions should be supported by Service Level Agreements as part of its Access obligation. Eircom should be obliged to comply with a set of Regulatory Product Performance Metrics, the content of which will be subject to further consultation. Eircom should be obliged to negotiate in good faith with undertakings requiring access.**

5.51 ComReg proposes that Eircom should continue to be required to provide access to wholesale terminating segment leased line services to competitors on a non-discriminatory basis.

5.52 Furthermore ComReg proposes that Eircom should be required to promptly provide competitors with information necessary for access to its wholesale leased line services on a non-discriminatory basis.

5.53 **Eircom should continue to be required to provide access to wholesale terminating segment leased line services to competitors at an equivalent standard and at an equivalent time as to its own retail arm as part of its Access obligation.**

5.54 ComReg proposes that pursuant to Regulation 13(2)(e) of the Access Regulations Eircom should continue to promptly grant open access to technical interfaces, protocols, or other key technologies and should also be required to provide such Operational Support Systems ('OSS') or similar software necessary to ensure fair competition in the provision of services to OAOs.

5.55 Even where the provision by Eircom of certain products is mandated ComReg believes that there is an incentive for Eircom to limit access or make access more difficult. It is necessary for OAOs to have open access to technical interfaces, protocols, and OSS for them to take up mandated products and allow them to compete with Eircom at the retail level in winning customers.

5.56 **Eircom should continue to grant open access to technical interfaces, protocols, or other key technologies and should be required to provide such Operational Support Systems ('OSS') or similar software necessary to ensure fair competition in the provision of services as part of its Access obligation.**

Q. 15. Do you agree with ComReg's proposal to impose an access obligation? Do you agree with how ComReg proposes to impose that obligation? If not, please provide reasons for your response.

Transparency

5.57 ComReg proposes that a transparency obligation should continue to be imposed on Eircom. It is stated as part of the Access Directive[47] that transparency may be used in relation to 'interconnection and/or access, requiring operators to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices'.

5.58 Transparency is a necessary means of ensuring that ComReg and OAOs can observe price and non-price terms and conditions for Eircom's wholesale leased line terminating segment products. A transparency obligation is required to support any accounting separation obligations, as this would allow the calculation of costs and prices (i.e. internal price transfers) to be rendered visible. This would also allow ComReg to monitor compliance with any non-discrimination obligations, and address competition problems relating to cross subsidisation, price discrimination and the application of price squeezes.

5.59 The Access Regulations provide for publication of a reference offer that is sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested – this should include a description of the relevant offerings broken down into components according to market needs and a description of the associated terms and conditions, including prices. ComReg notes that there is no coherent reference offer for the current mandated wholesale terminating segment products. Service schedules for PPCs are currently published as part of Eircom's Reference Interconnect Offer (RIO), and documentation for traditional Wholesale Leased Lines is published on a piecemeal basis.

5.60 ComReg believes that Eircom should produce and maintain a new reference offer for wholesale terminating segment leased line products. This reference offer would cover currently mandated products (that is, Wholesale Leased Lines and Partial Private Circuits) and would provide a structure within which any new product or service offering could be detailed.

5.61 ComReg has considered whether Eircom should be obliged to publish changes to wholesale prices in advance of their coming into effect. At present, Eircom

[47] Article 10, S.I. No. 305 of 2006, "European Communities (Electronic Communications Networks and Services)(Access) Regulations 2003.

publishes changes to the wholesale price according to structures that govern changes to the Reference Interconnect Offer (RIO).

5.62 In order to promote competition, ComReg proposes that Eircom should provide advance publication of changes to wholesale prices three months before the changes come into effect.

5.63 ComReg must ensure compatibility between its proposal and section 17(4) of the Universal Service Regulations which requires undertakings to notify their subscribers not less than one month prior to the date of implementation of any proposed modification in the conditions of the contract for that service. This means that an operator offering a retail service must give one month's notice of price changes to its retail customers. ComReg's proposal that wholesale price changes should be published three months in advance of their effect is considered an appropriate time to allow change and notification of subsequent retail price changes.

5.64 In order to ensure compliance with any price controls in the wholesale market for the terminating segments of leased lines, it is proposed that Eircom should notify ComReg of proposed wholesale price changes 5 working days before advanced publication.

5.65 ComReg proposes that a transparency obligation is required to support the access obligation concerning SLAs. A transparency obligation would require Eircom to publish an industry SLA on its wholesale website. In addition, ComReg proposes that Eircom should be obliged to provide performance metrics as required, and that ComReg reserves the right to publish this information.

5.66 **ComReg proposes that a transparency obligation should continue to be imposed on the SMP operator.**

5.67 **The implementation of the transparency obligation will include a requirement to publish a reference offer for all products in the wholesale terminating segment market. The publication obligation will include a date by which the reference offer should be published.**

5.68 **Eircom should publish changes to wholesale prices three months before they come into effect. Eircom should notify ComReg of proposed changes to wholesale prices 5 working days prior to advance publication.**

5.69 **Eircom should publish an industry SLA on its wholesale website.**

5.70 **Eircom should make available performance metrics as required by ComReg, and these may be published**

Q. 16. Do you agree with ComReg's proposal to impose a transparency obligation?

Do you agree with how ComReg proposes to impose that obligation?

Please provide a reasoned response.

Non-discrimination

5.71 In order to promote competition, ComReg proposes to continue to impose the remedy of non-discrimination on Eircom. It should be noted that the rationale for ex-ante obligations is not the identification of a particular abuse that has occurred but rather the existence of a position of SMP enjoyed by an operator on a relevant market and where scope and incentives exist for it to engage in anti-competitive behaviour. The imposition of a SMP obligation and associated remedies is intended to guard in advance against anti-competitive abuses occurring.

5.72 In general non-discrimination[48] requires that the SMP undertaking 'applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides to its own internal division, or those of its subsidiaries or partners'. A non-discrimination obligation requires that OAOs are treated no less favourably than an incumbent's internal divisions.

5.73 ComReg's preliminary view is that in addition to transparency, a non-discrimination obligation should be applied on Eircom. ComReg regards the application of an obligation of non-discrimination on Eircom as necessary for dealing with competition problems identified in this market.

5.74 In particular ComReg proposes that Eircom be required to provide information and services to alternative operators in timescales, on a basis, and of a quality, which are at least as good as those provided to Eircom's retail arm and associates. It is important to ensure that there is no discrimination regarding quality of service between one wholesale customer of the SMP operator and another, which could afford one operator a competitive advantage.

5.75 Finally, it is important that information gained by Eircom as a result of their provision of wholesale services to another operator is not improperly used by Eircom's downstream arms in any manner. In the absence of regulation, Eircom retail could use information obtained by Eircom wholesale by virtue of providing access to other operators to target other operators' customers.

5.76 ComReg proposes that Eircom should be required to provide all current and any new terminating segment services introduced in the period of the review to competitors at an equivalent standard and at an equivalent time as provided to the Eircom retail arm.

5.77 **ComReg proposes to continue to impose the remedy of non-discrimination on Eircom.**

Q. 17. Do you agree with ComReg's proposal to impose an obligation not to discriminate? Do you agree with how ComReg proposes to impose that obligation? Please provide reasons for your response.

[48] Directive 2002/19/EC on access to, and interconnection of, electronic communications networks and associated facilities, Article 10.

Price control

5.78 In order to promote competition, ComReg proposes price controls in respect of the mandated WLL and PPC products. Absent regulation, a vertically integrated operator with market power in wholesale markets may be able to exert its market power by charging an excessive price for wholesale inputs, and may be able to foreclose the retail market by means of a margin squeeze.

5.79 Historically OAOs in Ireland have purchased Eircom's WLL services to enable the offering of retail services to end users in areas where their own networks have not been built. As a result of ComReg's previous market review, access to Eircom's WLLs was introduced using price terms governed by a retail-minus formula. The availability of WLLs priced at a discount to retail equivalents has enabled the development of a limited amount of service based competition, and as a consequence efficient OAOs have been able to grow larger customer bases. As the customer bases of OAOs achieves a critical mass, this provides a more stable environment for further infrastructure investments in core networks by OAOs. Such investments over the course of time will reach further to customer locations.

5.80 Since the time of the last review, OAOs have had the opportunity to migrate, and have migrated (to a certain extent), from using Eircom's WLL products to using Eircom's PPC products.

5.81 ComReg has approached the design of the proposed price control remedies in the wholesale market for the terminating segments of leased lines by developing a framework that promotes efficient infrastructure investment and encourages OAOs to climb up the ladder of investment, for example through the mandated PPC product[49]. This will facilitate effective and sustainable competition. Infrastructure based competition is also more likely to lead to the eventual withdrawal of many proposed regulatory obligations.

PPC Price Control

5.82 ComReg proposes to continue the obligation that PPCs are offered at prices that are cost oriented. Currently this is based on forward looking long run incremental costs (FL-LRIC). This methodology may be reviewed during the course of this review: in particular ComReg proposes that PPC prices, in so far as PPCs make use of the local access network, be consistent with costing methodologies used in those markets..

5.83 Alternative price controls, such as retail-minus, are not feasible with regard to PPCs, as there is no retail PPC offering.

Wholesale Leased Line Product Price Control

5.84 At present, WLLs are offered at prices based on a "retail-minus" formula, where the minus is currently 8%. ComReg believes that a price control continues to be required in the wholesale market for the terminating segments of leased lines, but has considered whether the retail minus mechanism is still appropriate.

[49] See for example ERG Common Position on Remedies, April 2003 available on www.erg.eu.int.

5.85 In this consultation, ComReg has indicated that the retail market for leased lines is prospectively competitive, and has proposed that this market will no longer be susceptible to ex ante regulation. This means that, if ComReg's consultation proposals are accepted, all SMP obligations in the retail market will be removed. The maintenance of a retail-minus price control in the wholesale market which depends on the publication and monitoring of prices in the retail market becomes more difficult to implement and to enforce.

5.86 ComReg has considered the following options :

- Maintain a retail-minus mechanism, and introduce a requirement for Eircom to provide a statement of compliance with the wholesale price control each time the retail price changes. The advantage of this approach is that it directly addresses the objective of ensuring the maintenance of an appropriate margin between the wholesale and retail prices, without imposing an additional burden on Eircom or on ComReg. The disadvantage is that, in a market where SMP regulation has been withdrawn, the pricing structure may be complex and so the control would be difficult to monitor in a transparent way.
- Move to a full cost-based price control. This has the appeal of standardising the approach to traditional leased lines and PPCs, and may be considered to most accurately reflect the principles of cost orientation. However, it may be unduly burdensome to develop and implement.
- Develop a cost-based price control which is based on the existing PPC model. This would recognise that the costs involved in providing traditional terminating segments are incremental to the costs involved in supplying PPCs. The advantage of this option over a full FL-LRIC approach is that it would be much less burdensome to implement, but would still achieve the objective of limiting the leverage of market power from the wholesale market into the retail market.

5.87 ComReg suggests that, given the proposed withdrawal of SMP obligations in the retail market, it may be more appropriate to consider a cost-based rather than a retail-minus price control in the wholesale market. ComReg proposes to enter into a consultation process with regard to this at a later date, as it is of the view that the issue is a complex one and one where further analysis is needed on both the potential impact on end-users and whether a transitional process will need to be put in place. ComReg proposes that interim the existing retail minus price control would continue to exist as a transitional measure.

5.88 **ComReg proposes to continue to oblige Eircom to offer PPCs at prices which are cost-oriented, with FL-LRIC being retained at least in the interim. ComReg proposes to further consult as appropriate on the most suitable price control for other wholesale leased line products (including WLLs) offered by Eircom.**

Q. 18. Do you agree with ComReg's proposal to implement price controls in this market? Do you agree that PPCs should be offered at cost oriented prices and that FL-LRIC should be maintained in the interim? Do you agree that WLLs should ultimately be offered at cost-oriented prices with retail minus being retained in the interim? Do you agree that all wholesale terminating segments of leased lines should be offered at cost-oriented prices? How should this best be done?

Cost Accounting

5.89 As ComReg has proposed to impose price control obligations on Eircom in respect of WLLs and PPCs, ComReg proposes to impose a supporting obligation with regard to cost accounting systems.

5.90 The obligation of cost accounting systems supports the obligations of price control and accounting separation, and can assist ComReg in monitoring the obligation of non-discrimination.

5.91 In order to demonstrate compliance of a service or product with a price control obligation, it is necessary for Eircom to establish cost accounting systems that capture, identify, value and attribute relevant costs to its services and products in accordance with agreed regulatory accounting principles, such as cost causality. A key part of this process is the stage which identifies those parts of the underlying activities or elements that directly support or are consumed by those services or products. These elements are referred to as network components. As these components are frequently used to provide more than one product or service, it is also necessary to determine how much of each component is used for each service or product.

5.92 As operators may operate in both SMP and non SMP designated markets, the division of services and products, and the corresponding costs, capital employed and revenues between the different markets should be reflected in costing systems, and coherence and integrity of information should be assured. Where such particular costs form part of the cost of an SMP service ComReg needs to have visibility as to the basis of and amount of allocation across all services.

5.93 Since the previous market review, ComReg has been engaged in a public consultation on the detailed implementation of accounting separation and cost accounting remedies under the new framework.

5.94 **ComReg proposes to maintain the existing level of cost accounting system obligations on Eircom until the detailed implementation consultations are complete.**

Q. 19. Do you agree with ComReg's proposal on cost accounting? Please provide a reasoned response.

Accounting Separation

5.95 Separated accounts help disclose possible competition problems and make visible the wholesale prices and internal transfer prices of a dominant operator's products and services.

5.96 ComReg intends to implement accounting separation on a service and/or product basis. ComReg believes it is not sufficient to implement such an obligation at a market level as it is important to discourage possible cross-subsidisation of pricing.

5.97 Since the previous market review, ComReg has been engaged in a public consultation on the detailed implementation of accounting separation and cost accounting remedies under the new framework.

5.98 **ComReg proposes to maintain the existing level of accounting separation obligations on Eircom until the detailed implementation consultations are complete.**

Q. 20. Do you agree with ComReg's proposal on accounting separation? Please provide reasons for your response.

6 Regulatory Impact Assessment

Introduction

6.1 ComReg is conducting a Regulatory Impact Assessment (RIA) in line with the Guidelines published in August 2007[50]. This RIA also takes into account the Government's Better Regulation Programme.

6.2 The purpose of the RIA is to assess whether the proposed obligations placed on the operator designated with SMP in the wholesale market for the terminating segments of leased lines are appropriate, proportionate and justified on the basis of the analysis of competition in this market.

Policy issue and objectives

6.3 In this market review, ComReg's preliminary conclusion is that the wholesale market for the terminating segments of leased lines is not effectively competitive, and is not likely to become competitive within the lifetime of this review. ComReg's analysis noted that Eircom has a very high and persistent share of the market, and that this is not appreciably qualified by other factors such as countervailing buyer power. Competition in the market is very limited, and barriers to entry associated with sunk costs and economies of scale are high. ComReg's preliminary view is that Eircom should be designated with SMP in this market, and that appropriate remedies should be applied.

6.4 ComReg's principal objectives, therefore, are to ensure that a dominant operator is prevented from the potential exploitation of its market power, and to facilitate the rapid development of effective competition.

6.5 ComReg would note that the overall effect of this market review will be to withdraw regulatory obligations, in that it is proposing that there is no longer SMP in the trunk market. It also notes that, generally, the majority of obligations proposed in the terminating market are already in place. As such, the cost to Eircom of continuing these obligations is likely to be considerably less than if they were being imposed for the first time, thus the overall impact of these obligations is likely to be relatively limited as they should not involve significant set-up costs.

Regulatory options

6.6 The proposed wholesale obligations are:

6.7 **Access** to wholesale terminating segments of leased lines by obliging

- Access to mandated products, currently WLLs and PPCs
- Access to facilities already granted
- Access to specified information which supports existing and future wholesale leased line services
- Eircom is obliged to meet reasonable access requests

[50] "Guidelines on ComReg's Approach to Regulatory Impact Assessment" ComReg doc 07/56a, 10 August 2007

- Wholesale products must be delivered on terms and conditions that are fair, reasonable and timely, and negotiation should be carried out in good faith. This should be supported by a Service Level Agreement.
- Wholesale products must be delivered by Eircom to competitors at an equivalent standard and timescale as to its own retail arm.

6.8 **Transparency**

- Obligation to publish a Reference Offer for leased line services
- Obligation to comply with a Regulatory Service Level Agreement for leased line services
- Obligation to publish changes to prices in advance of their coming into effect, and to notify ComReg in advance of publication.

6.9 **Non-discrimination**

- General obligation not to discriminate

6.10 **Price Control**

- Cost-based price control on PPCs
- Cost-based price control on WLLs
- Continuation of cost accounting and accounting separation obligations, pending the outcome of further consultation on accounting systems and methodologies

6.11 The approach which ComReg has taken is to assess the implications of, first of all, forbearing from regulation, and then of adding incremental levels of regulatory control. ComReg has considered the following regulatory options:

Option 1: forbear from regulation
Option 2: apply obligation not to discriminate
Option 3: apply transparency obligation
Option 4: apply access obligation
Option 5: apply cost accounting and accounting separation
Option 6: apply price controls

6.12 **Option 1: forbear from regulation**

The EU Framework requires ComReg to apply remedies when SMP is found, so ComReg is obliged to address dominance in the wholesale market for the terminating segments of leased lines. Forbearance from regulation is therefore not an option in this market once SMP has been found.

6.13 **Option 2: apply obligation not to discriminate**.

ComReg has considered whether it would be sufficient to apply an obligation not to discriminate. This obligation would ensure that Eircom had to supply products and services of an equivalent quality to all operators, including its own retail arm. While ComReg views non-discrimination as a necessary remedy, it is not sufficient as it does not address the range of actual and potential competition problems which have been identified.

6.14 **Option 3: apply transparency obligation**

A transparency obligation ensures that ComReg and OAOs can observe price and non-price terms and conditions for Eircom's wholesale leased line terminating segments products. The transparency and non-discrimination obligations are necessary supporting obligations for obligations concerning access and price controls and are not considered to be sufficient by themselves.

6.15 **Option 4: apply access obligations**

The access obligations which are proposed are a continuation of current obligations. Taken together, the access obligations would ensure that operators have the right to access wholesale products, and to implement them, and that access would be provided in a manner which was fair, reasonable and timely, and to a standard equivalent to that provided to Eircom's retail arm.

6.16 **Option 5: apply cost accounting and accounting separation**

The cost accounting and accounting separation obligations are necessary to ensure appropriate cost recovery mechanisms, and to monitor price controls. In order to demonstrate the cost orientation of a service or product, it is necessary for Eircom to establish cost accounting systems that capture, identify, value and attribute relevant costs in accordance with agreed regulatory accounting principles.

6.17 **Option 6: apply price controls**

ComReg proposes to continue to apply the FL-LRIC price control on PPCs in the interim. It is proposed that a cost-based price control should be developed for WLLs. While this would incur additional costs, the objectives in the market would be better addressed by bringing the WLL product into line under a cost-based approach rather than continuing to derive the wholesale price control from the retail market.

Impact on stakeholders

6.18 ComReg has considered the impact of its regulatory options on stakeholders.

6.19 **Non-discrimination**

The direct cost of implementing a non-discrimination obligation is very low for the SMP operator, as the obligation essentially addresses behaviour in the market. There are regulatory costs associated with ensuring compliance, but it is ComReg's view that these costs are not likely to be significant, given the measures are already in place to ensure non-discrimination. ComReg would note that there might be indirect costs in that, without such an obligation, Eircom might discriminate towards its own retail arm in a manner that could make that arm more profitable. However, any such behaviour is likely to result in other operators being less profitable. And discriminatory behaviour is likely to have strong negative effects on competition, and ultimately, the welfare of end-consumers.

6.20 **Transparency**

ComReg has proposed that the SMP operator should publish a Reference Offer for leased line services, and should comply with a Regulatory Service Level Agreement. While the Reference Offer is a new obligation, ComReg believes that it mainly involves streamlining and centralising the collection and publication of information which is currently published in a variety of locations. ComReg is aware that there will be an initial extra burden on Eircom, but believes that it is in the interests of all participants in the market to move to a coherent statement of Eircom's offer in the wholesale market for terminating segments of leased lines.

6.21 The obligation to comply with a Regulatory Service Level Agreement is a new obligation, and will constitute an extra burden on Eircom and on ComReg. ComReg proposes to consult further on the product metrics and performance targets which will define a fit-for-purpose product, and which will constitute the Regulatory SLA. However, it is ComReg's view that the principle of implementing a Regulatory SLA is essential for ensuring that a fit-for-purpose product is available, and that the benefits will therefore outweigh the costs.

6.22 **Access**

The proposed access obligations are a continuation of existing obligations in this market. The impact of any new products being mandated will be duly considered.

6.23 **Cost accounting and accounting separation**

The additional costs of complying with the proposed obligations on cost accounting and accounting separation should be minimal, as Eircom already prepares and publishes regulatory financial statements, and has cost accounting systems in place.

6.24 **Price controls**

ComReg proposes to continue a cost-based price control on PPCs, and to consider the development of a cost-based price control for WLLs.

6.25 It is ComReg's view that a wholesale price control remains essential, not only in addressing competition problems in the wholesale market, but also in ensuring that competition can develop in the retail market. It should be noted that ComReg's proposal to withdraw regulation from the retail market was based on the view that wholesale regulation would be sufficient to ensure the development of competition in the retail market. The withdrawal of regulation from the retail market is therefore contingent on the adequacy of regulation in the wholesale market. It is ComReg's view that the imposition of cost-based price controls in the wholesale market are essential to ensure that the SMP operator does not charge a monopoly price, which would have a negative effect on the wholesale and the associated retail markets.

Impact on competition

6.26 It is ComReg's view that, in the absence of regulation in the wholesale market for the terminating segments of leased lines, there would be no effective competition.

As discussed in the SMP analysis, with the significant entry barriers and Eircom's current dominant position, removal of these remedies would have a drastic effect on competition in this market, and would also involve a "knock-on" negative effect on competition in the market for retail leased lines. The set of remedies chosen are, ComReg feels, the minimum necessary to ensure an opportunity for effective competition to develop in this market.

Impact of chosen option

6.27 ComReg has suggested that, given the nature of competition problems identified, a range of remedies should be applied in this market.

6.28 ComReg recognises that there are direct and indirect costs associated with the proposed remedies. Direct costs are to do with the costs of implementing new or extended obligations, while indirect costs are to do with effects such as opportunity costs.

6.29 ComReg recognises that Eircom will bear additional direct costs in implementing some of the remedies. However, these costs are limited, and should involve relatively few new costs, and are thus judged to be appropriate and proportionate. If Eircom feel that the costs are likely to be extremely significant, they should provide substantiated evidence of this in any response they might make.

6.30 As for indirect costs, ComReg recognises that several of the proposed obligations restrict the commercial freedom of the SMP operator, and this should be considered as an indirect cost of the proposed measure. However, it is ComReg's view that such restriction is necessary in order to facilitate competition in the market, and that the benefits significantly outweigh the costs.

Conclusion

6.31 It is ComReg's view that the selected regulatory options are appropriate, proportionate and justifiable as a means of ensuring that Eircom does not exploit its market power in the wholesale market for the terminating segments of leased lines. ComReg has sought the least burdensome means of achieving its aims, and has noted where additional costs may be incurred.

Q. 21. Do you agree with ComReg's assessment of the regulatory impact of the proposed measures? If not, please provide reasons for your response.

Annex A: Glossary of Terms

ATM (Asynchronous Transfer Mode) is a technology that enables data transfer asynchronously relative to its input into the communications system. The data is put into cells and transmitted through the network to be re-constructed at the output.

CSH (Customer Sited Handover) allows interconnection to occur at a communications provider's premises.

EUL (End-User Links) is the part of a PPC that connects from the customer's premises to an OAO Transport Link.

FL-LRIC (Forward Looking-Long Run Incremental Cost) is the costs of providing all the services in a particular *increment* in the long run. What the costs would be for a hypothetical *efficient entrant* building a new network using modern equivalent assets to provide the services in the most efficient way.

FR (Frame Relay) is a packet switched data service providing for the interconnection of Local Area Networks and access to host computers at up to 2Mbit/s.

IP (Internet Protocol) is the communications protocol used for transmitting a data packet between a source and a destination on some data networks including the Internet.

MANs (Metropolitan Area Networks) is a telecommunications term used to describe a network serving a business and residences in an urban area. In this context, it refers to the roll-out of publicly-funded telecommunications infrastructure in specific towns around Ireland.

MPLS (Multi-Protocol Label Switching)

NRA (National Regulatory Authority) is the relevant regulatory authority in each country. In Ireland, the NRA is ComReg.

NGN (Next Generation Networks) is commonly defined as a single, IP-centric network which separates the services and service control layers from the network to allow rapid development of new services. An NGN will also generally have the capability of supporting multiple low and high bandwidth services including mobility, rich voice and multi-media services.

PDH (Plesio-synchronous Digital Hierarchy) is an older method of digital transmission used before SDH which requires each stream to be multiplexed or de-multiplexed at each network layer and does not allow for the addition or removal of individual streams from larger assemblies.

PPCs (Partial Private Circuits) is a generic term used to describe a category of private circuits that terminate at a point of connection between two communications providers' networks. It is therefore the provision of transparent transmission capacity between a customer's premises and a point of connection between the two communications providers' networks. It may also be termed a part leased line.

RIO (Reference Interconnect Offer) is a document that eircom produces, and is presented in the form of a standard contract. It deals with Interconnect Services which Eircom offers to operators authorised under the Authorisation Regulations, operating in the Irish market. It also deals with Interconnect Services, which Eircom offers to Operators Authorised in other EU Member States, for termination of traffic presented at Eircom Interconnect Nodes which originates in other EU Member States.

SMP (Significant Market Power): An entity is designated with SMP when the NRA determines that the market under review is not effectively competitive.

SSNIP (Significant Non-Transitory Increase in Price) is a “Small but Significant Non-transitory Increase in Price”, usually considered to be 5 to 10 per cent, which is part of the hypothetical monopolist test used in market definition analysis.

STM (Synchronous Transport Module) is the basic rate of transmission of the SDH fiber optic network transmission standard.

SDH (Synchronous Digital Hierarchy) is a method of digital transmission where transmission streams are packed in such a way to allow simple multiplexing and de-multiplexing and the addition or removal of individual streams from larger assemblies.

Transport Links is that part of a PPC which connects the eircom network with the OAO network.

VPNs (Virtual Private Networks) consist of private networks that may be based around one or more inter-linked “islands” connected together through secure connections.

Annex B: Consultation Questions

Annex C: Methodology for calculating market shares

Introduction

The aim of analysing operator shares of the market is to assess the contribution of market shares to any market power. ComReg's approach was to collect information in as disaggregated a form as possible, so that the data could eventually be analysed in line with the way in which the markets were defined. ComReg also sought to collect information from suppliers and purchasers of wholesale leased lines. This allowed information to be cross-checked, and allowed any anomalies to be explored.

Data requests

Requests for data were issued to operators in August 2006[51]. Because this was prior to the market definition exercise, ComReg aimed to ensure that data could be analysed in line with any eventual definition of the market. It can be noted also that having sufficiently granular data allows a check of some of the conclusions in the market definition phase. For example, market data allows the confirmation of breaks in demand and supply conditions.

Operators were asked to provide volume and revenue data for their sales and purchases in the wholesale leased line market for time period 2004-2006[52]. ComReg believes that, where possible, it is important to analyse both volumes and revenues in order to build up a complete picture of market behaviour.

In order to avoid pre-judging the definition of the market, operators were asked to provide data on the following products:

- Analogue leased lines;
- Digital leased lines;
- PPC EULs (excluding transport links);
- ATM;
- Frame Relay;
- Ethernet;
- MPLS;
- Wavelength; and
- Other dedicated access products.

[51] Two operators were added in February 2007.

[52] 2006 data was provisional and estimated by operators based on first half of the year. In some cases, ComReg extrapolated data based on first half year purchases and sales.

Volume and revenue information related to the sale of these products was requested by circuit capacity and distance[53] using the following bands:

Circuit Capacity/Distance	<10km	10km – 100km	>100 km
☐ 64kb/s – 128kb/s			
☐ 192kb/s – 512kb/s			
☐ 576kb/s – 1024kb/s			
☐ 1088kb/s – 1984kb/s			
☐ 2Mb/s			
☐ 34Mb/s			
☐ 45Mb/s			
☐ 155Mb/s (STM-1)			
☐ Above STM-1 (please specify)			

Operators were asked to break down sales by purchaser. In order to cross-check data, ComReg also requested data from operators who purchase but do not necessarily supply wholesale leased lines.

Operator discussions

Follow-up discussions were held with main suppliers and purchasers in the market. The aims were to clarify and confirm data provided; to address any anomalies between demand and supply information; and to identify any qualitative issues which would impact on market share analysis.

Market share analysis

Key assumptions made in the analysis are as follows:

- All 2M channelised costs were bundled into sub 2M costs
- Where available, costs for CSH/ISH bearers are assumed to be spread equally between leased/PPC and voice interconnect services

Following the market definition analysis, trunk capacity was defined as any capacity used by any carrier to service two or more customers. This included capacity between main cities and in the Dublin area, but excluded infrastructure purchases. ComReg also carried out sensitivity analysis on the data, principally by broadening the market definition to include infrastructure purchases, and by narrowing the definition to exclude capacity under 34Mb/s.

[53] Information on distance was only requested for sales.