Commission for
Communications Regulation

Response to Consultation and Consultation on Draft Decision

# Market Analysis: Retail Leased Lines and Wholesale Terminating and Trunk Segments of Leased Lines (National)

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All responses to this consultation should be clearly marked:- "Reference: Submission re ComReg 05/03" as indicated above, and sent by post, facsimile, e-mail or on-line at www.comreg.ie (current consultations), to arrive on or before 6.00 pm on 14 February 2005 to:

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# 1 Executive Summary

1.1 The new communications regulatory framework requires that ComReg define relevant markets appropriate to national circumstances, in particular relevant geographic markets within its territory, in accordance with the market definition procedure outlined in the *Framework Regulations*. In addition, ComReg is required to conduct an analysis of the relevant markets to decide whether or not they are effectively competitive[1].

1.2 The *Framework Regulations* further require that the market review procedure under Regulation 27 be carried out as soon as possible after ComReg defines a relevant market, which takes place as soon as possible after the adoption, or subsequent revision, of the *Recommendation* on relevant product and service markets ("the *Relevant Markets Recommendation*") by the European Commission . In carrying out market definition and market analysis, ComReg must take the utmost account of the *Relevant Markets Recommendation* and the European Commission's *Guidelines on Market Analysis and Significant Market Power ("The SMP Guidelines").*

1.3 The scope of the review is limited to terminating and trunk segments provided in the wholesale market as inputs into wholesale leased lines, and the market for retail leased lines.

1.4 In accordance with the *Regulations* and *SMP Guidelines*, ComReg has defined the markets at both the retail and wholesale level. The functional characteristics of a leased line have been examined with a view to assessing demand-side substitution. ComReg considers that the functionality offered by a leased line is:
*'point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user'.*

1.5 Hence as part of the market definition process, the functional characteristics of a leased line were used to assess the intended use of products offering a service similar to a traditional (i.e. dedicated) leased line. Where demand-side substitution is evident, then the market is broadened to include products similar to a traditional leased line.

**Retail market**

1.6 ComReg has defined distinct markets for retail national and international leased lines as detailed in Section 4. A separate review was carried out by ComReg for retail international leased lines[2]

1.7 The national retail market has been divided into leased lines up to and including 2 Mb/s, (i.e. the minimum set of leased lines as defined by the Universal Service Regulations) and leased lines above 2 Mb/s. The evidence presented to ComReg shows that there is a chain of substitution within the minimum set. There is a distinct break between 2 Mb/s and high bandwidth leased lines, which suggests that from a demand-side point of view, there are distinct markets for the minimum set of leased lines and for leased lines above 2 Mb/s.

[1] Framework Regulations 26 and 27.

[2] ComReg Document (04/120) Market Review: International Leased Line.

1.8 The minimum set of leased lines includes both analogue and digital leased lines as these are used interchangeably.

1.9 Leased lines provide point to point capacity. ComReg has concluded that the appropriate boundary point of a leased line is the network terminating point (NTP). The NTP can be at the customer site or a service provider access point.

1.10 ComReg examines whether other managed services fall within the retail market for leased lines. As a starting point ComReg established that point to point IPVPNs, ATM, Ethernet and SDSL can offer a functionally equivalent service to a traditional leased line. Frame Relay, however does not offer the same functionality. The data available to ComReg shows that within the minimum set of leased lines, from a demand-side analysis, there is an emerging trend towards managed services at the margin, but this is not yet sufficiently strong to warrant their inclusion in the market. However, ComReg proposes to actively monitor this trend and reserves the right to review the scope of the market definition if there is evidence that the market is broadening.[3] ComReg has therefore defined the retail market for leased lines up to and including 2 Mb/s in accordance with the *Relevant Markets Recommendation* and has limited the scope of the relevant market to point to point dedicated capacity.

1.11 The geographic market for the minimum set is national in scope. The geographic market is not broken down on a route by route basis.

1.12 The market analysis of the minimum set of leased lines found eircom to be dominant with approximately 88% market share. There are absolute barriers to entry in this market and a lack of countervailing bargaining power. The conclusions of this analysis found that:

- *eircom should be designated as having SMP on the market for the minimum set of leased for retail leased lines up to and including 2 Mb/s.*

1.13 ComReg examined the retail market above 2 Mb/s, to see if the existing regulation continued to be proportionate and justified. In conclusion the market was found to be effectively competitive, as no one operator has a market share over 40% and there is evidence of strong countervailing bargaining power with large customers. Suppliers in this market face high barriers to entry, however on a relative basis the barriers are mitigated by the potential returns available in the provision of high bandwidths over fibre. At high bandwidths, the use of ATM and IPVPNs as substitutes for traditional leased lines is evident. ComReg holds the view that any threat of eircom leveraging market power from the wholesale market into the retail market should be mitigated through regulation at the wholesale level.

**Wholesale market**

1.14 The wholesale market consists of wholesale leased lines and partial private circuits (PPC). Functionally these products are equivalent and substitution is evident on both the demand and supply-side.

1.15 Wholesale leased lines are made up of both trunk and terminating segments which the *Recommendation on Relevant Markets* has defined as two separate markets. Trunk and terminating segments are considered to be complementary and using a prospective analysis ComReg considers this split to be appropriate for the wholesale market.

[3] ComReg may request information for this purpose, periodically.

1.16 ComReg maintains from the initial consultation that the appropriate boundary split between trunk capacity and terminating segments occurs at the customer's leased line serving exchange.

1.17 The market for terminating segments includes all bandwidths and this concurs with the definition used in the *Recommendation on Relevant Markets.* Likewise, as trunk segments are part of the core network and are used to aggregate traffic, the market spans all bandwidths.

1.18 ComReg considers that the geographic market is national in scope. At this point in time there are no distinct routes in the trunk market however, should this change within the timeframe of the review, ComReg may revisit the geographic scope of the market.

1.19 Analysis of the wholesale market for both trunk and terminating segments finds eircom to have SMP. The analysis shows that eircom holds over 85% market share in terms of circuits and 80% in terms of revenue. Despite the presence of some alternative infrastructure in the market, it would be difficult for any other operator to overcome the ubiquity of eircom's network and the economies of scale and scope which accompany this within the timeframe of this review. The infrastructural advantage presents a barrier to entry, which is more prevalent in terminating segments. The conclusion of the market analysis found that:

- *eircom should be designated as having SMP in the market for wholesale terminating segments of leased lines.*

- *eircom should be designated as having SMP in the market for wholesale trunk segments of leased lines.*

**Proposed Remedies**

1.20 The obligations proposed to remedy the competition problems in the retail market are the mandatory remedies of the *Universal Services Regulations* for the minimum set of leased lines. These include:

*Cost orientation*

*Non discrimination*

*Transparency*

1.21 The obligations proposed to remedy the competition problems in the wholesale market for both trunk capacity and terminating segments of leased lines include:

*Access to and use of specific networks for PPCs and Wholesale leased lines*

*Non discrimination for wholesale leased lines and PPCs*

*Transparency*

*Cost orientation including:*

- *PPCs on a FL LRIC basis and*
- *Wholesale Leased Lines on a retail minus basis*

*Accounting Separation and Cost Accounting Systems*

1.22 ComReg is consulting on the draft Decision pertaining to this review. This can be found in Appendix B to E of this document. The consultation period will run from 17 January 2005 to 14 Feburary 2005 during which the ComReg welcomes written comments on any of the issues raised in this paper.

# 2 Introduction

## Objectives under the Communications Regulation Act, 2002

2.1 Section 12 of the Communications Regulation Act, 2002 outlines the objectives of ComReg in exercising its functions. In relation to the provision of electronic communications networks, electronic communications services and associated facilities these objectives are to:

- promote competition
- contribute to the development of the internal market, and
- promote the interests of users within the European Union.

2.2 This review is in line with the objectives set out in the Communications Regulation Act, 2002, in particular as ComReg seeks to promote competition amongst operators to ensure that end-users derive the maximum benefit in terms of price, choice and quality.

## Regulatory Framework

2.3 Four sets of Regulations,[4] which transpose into Irish law four European Community directives on electronic communications networks and services,[5] entered into force in Ireland on 25 July 2003. The final element of the European electronic communications regulatory package, the *Privacy and Electronic Communications Directive*, was transposed into Irish law on 6 November 2003.

2.4 The new communications regulatory framework requires that ComReg define relevant markets appropriate to national circumstances, in particular relevant geographic markets within its territory, in accordance with the market definition procedure

[4] Namely, the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 (S.I. No. 307 of 2003), ("the Framework Regulations"); the European Communities (Electronic Communications Networks and Services) (Authorisation) Regulations, 2003 (S.I. No. 306 of 2003), ("the Authorisation Regulations"); the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003 (S.I. No. 305 of 2003), ("the Access Regulations"); the European Communities (European Communications) (Universal Service and Users' Rights) Regulations 2003 (S.I. No. 308 of 2003), ("the Universal Service Regulations").

[5] The new regulatory framework for electronic communications networks and services, comprising of Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, ("*the Framework Directive*"), OJ 2002 L 108/33, and four other Directives (collectively referred to as "the Specific Directives"), namely: Directive 2002/20/EC of the European Parliament and of the Council on the authorisation of electronic communications networks and services, ("*the Authorisation Directive*"), OJ 2002 L 108/21; Directive 2002/19/EC of the European Parliament and of the Council on access to, and interconnection of, electronic communications networks and services, ("*the Access Directive*"), OJ 2002 L 108/7; Directive 2002/22/EC of the European Parliament and of the Council on universal service and users' rights relating to electronic communications networks and services, ("*the Universal Service Directive*"), OJ 2002 L 108/51; and the Directive 2002/58/EC of the European Parliament and of the Council concerning the processing of personal data and the protection of privacy in the electronic communications sector, ("*the Privacy and Electronic Communications Directive*"), OJ 2002 L 201/37.

outlined in the *Framework Regulations*[6]. In addition, ComReg is required to conduct an analysis of the relevant markets to decide whether or not they are effectively competitive[7]. Where it concludes that the relevant market is not effectively competitive (*i.e.,* where there is one or more undertaking with significant market power ("SMP")), the *Framework Regulations* provide that it must identify the undertakings with SMP on that market and impose on such undertakings such specific regulatory obligations as it considers appropriate[8]. Alternatively, where it concludes that the relevant market is effectively competitive, the *Framework Regulations* oblige ComReg not to impose any new regulatory obligations on any undertaking in that relevant market. If ComReg has previously imposed sector-specific regulatory obligations on undertakings in that relevant market, it must withdraw such obligations and may not impose new obligations on those undertaking(s)[9].

2.5 The *Framework Regulations* further require that the market review procedure under Regulation 27 be carried out subsequent to ComReg defining a relevant market, which is to occur as soon as possible after the adoption, or subsequent revision, of the *Relevant Markets Recommendation* by the European Commission[10]. In carrying out market definition and market analysis, ComReg must take the utmost account of *the Relevant Markets Recommendation* and the European Commission's *Guidelines.*

## ComReg Procedure

2.6 ComReg has collected market data from a variety of internal and external sources, including users and providers of electronic communications networks and services ('ECNs' and 'ECSs'), in order to thoroughly carry out its market definition and market analysis based on established economic and legal principles, and taking the utmost account of *the Relevant Markets Recommendation* and *The SMP Guidelines*.

2.7 On 04 June 2004, ComReg issued a national consultation on its market analysis wholesale terminating and trunk segments and retail leased lines (ComReg Document 04/59). Interested parties were asked to submit comments by 16 July 2004 on a number of questions pertaining to the preliminary findings of the analysis. A number of respondents raised issues in relation to the quality of data used in the initial consultation. In order to address these issues ComReg carried out a second round of data collection. ComReg received submissions from the six respondents listed below by the close of the consultation period.

2.8 The six submissions to the consultation were:

- ALTO
- eircom
- EsatBT
- energis
- Vodafone
- ntl

2.9 ComReg thanks all respondents for their submissions. Having considered the views of all respondents, ComReg sets out in this document its conclusions regarding the

[6] Framework Regulation 26.
[7] Framework Regulation 27.
[8] Framework Regulation 27(4).
[9] Framework Regulation 27(3).
[10] Framework Regulations 26 and 27.

market analysis process. Comments relevant to each consultation question are addressed in the following sections. All responses received are available for inspection (with the exception of material supplied on a confidential basis) at ComReg's office.

2.10 As required by Regulation 20 of the Framework Regulations, any draft measure which ComReg proposes to adopt will be made accessible to the European Commission and the national regulatory authorities in other member states of the European Community, prior to adoption of the measure

## Liaison with Competition Authority

2.11 There is a requirement on ComReg under Regulation 27 of the *Framework Regulations* to carry out an analysis of a relevant market that has been defined. This analysis must be carried out in accordance, where appropriate, with an agreement with the Irish Competition Authority (CA) under Section 34 of the Competition Act 2002. In December 2002, ComReg signed a co-operation agreement with the CA for a period of three years.[11] To facilitate market review decision-making, a Steering Group, which included a representative from the CA, was established by ComReg. Through this forum, the CA has been informed and involved throughout the market review decision-making process. Appendix F includes the CA's response to ComReg's conclusion on this market.

## Structure of Consultation Document

2.12 The remainder of this consultation document is structured as follows:

- **Section 3** presents ComReg's methodology for defining and analysing relevant markets and ComReg's definition of the retail market absent of regulation both in the retail and wholesale market

- **Section 4** presents the conclusions on the market definition for the minimum set of retail leased lines. This section consists of a review of the market definition procedure and its scope, as well as demand- and supply-side assessments at the retail level;

- **Section 5** presents ComReg's market analysis for retail services which fall outside the scope of the recommended market for the minimum set of leased lines;

- **Section 6** presents ComReg's market analysis for the minimum set of retail leased lines and presents ComReg's view on whether this market is effectively competitive;

- **Section 7** presents ComReg's view on those undertakings with significant market power in the market for the minimum set of leased lines;

- **Section 8** presents the conclusions on the definition of the wholesale terminating and trunk market(s). This section consists of a review of the market definition procedure and its scope, as well as demand- side and supply-side assessments at the wholesale level;

[11] ComReg Document No. 03/06

- **Section 9** presents ComReg's market analysis for the wholesale markets and presents ComReg's view on whether this market is effectively competitive;

- **Section 10** presents ComReg's view on those undertaking(s) with significant market power in the wholesale markets;

- **Section 11** provides a discussion of the general principles associated with remedies and outlines a range of possible, as well as our proposed retail and wholesale remedies, under the new regulatory framework; and

- **Section 12** outlines the nature of the regulatory impact assessment that needs to be conducted in relation to any proposed regulatory intervention markets; and

- **Section 13** provides details with regard to the submission of comments on this consultation document.

# 3 Methodology

## Market Structure

3.1 There are a number of operators with backbone networks used for the provision of leased line products and services, (details are provided below). The largest operator is eircom. EsatBT also has a national network, although it is limited in scope. ESB Telecom, a subsidiary of the Electricity Supply Board (ESB) provides high bandwidth network facilities at the wholesale level. ntl and Chorus, both cable TV service providers, have limited network infrastructure on specific routes, which is used to provide leased line services. Additionally, there are a number of publicly owned Metropolitan Area Networks (MANs) and private metro rings within the main population areas of Ireland, which are utilised to provide wholesale and retail leased lines. Details of each are outlined below.

***Operators***[12]

**eircom**

3.2 eircom is the only provider of analogue leased lines; it also provides retail and wholesale digital leased lines. Additionally eircom provide a number of managed services which offer point to point capacity i.e. Frame Relay, IP[13] and ATM Virtual Private Circuits. eircom has the most significant and widespread network in Ireland. Its fibre network consists of over 200,000 kilometres of fibre extending from Dublin to the regions. Other parts of the network are composed of copper and are mainly used for access transmission. The copper network can transmit data only at speeds of up to 2Mb/s while the fibre network can deliver capacity at much higher speeds.

**Esat BT**

3.3 The second major provider of retail leased lines, managed services and wholesale leased lines in Ireland is EsatBT. Esat BT is a wholly owned subsidiary of BT plc. It is a fully integrated part of BTs international broadband network business, and provides services to multi-site corporates. Esat BT also operates in the residential home phone and Internet markets.

**ntl**

3.4 ntl's main business is cable TV services. However, the company also has some fibre infrastructure between Belfast, Dundalk and Dublin. ntl offers wholesale and retail leased lines.

**Chorus Communications**

3.5 Chorus has a fibre network linking Ennis, Shannon, Limerick, and Cork (approximately 150 kms of network), used for the provision of retail leased lines.

**Leap**

[12] Authorised undertakings which provide electronic communication networks and/or services within the relevant markets for terminating and trunk segment markets and retail leased line markets.

[13] Internet Protocol

3.6 Leap Broadband has signed the first of up to 50 deals with eircom wholesale to unbundle local exchanges. The investment, in excess of €210 million euros over the next three years, will enable Leap Broadband to deliver Symmetric DSL over existing copper network, determining the speed, contention rates and prices to meet the market requirements. ComReg considers below the impact of SDSL in the relevant markets. Leap currently provide wireless broadband asymmetric services via Fixed Wireless Access to end users.

***Operators with Metro Networks***

3.7 Table 4.1 below outlines the operators with metro networks and their locations. These are used for the provision of point to point capacity in the retail market.

| Operator | Location |
|---|---|
| Colt | Dublin |
| Energis (Previously Nevada) | Dublin, Cork, Shannon |
| MCI Worldcom (Ireland) | Dublin and Galway |
| Cable and Wireless (C&W) | Dublin |
| Equant | Dublin, Limerick & Galway |
| Global Crossing | Dublin |

**Table 3.1: Private Operators with Metro Networks**

***Resellers***

3.8 A number of operators do not have infrastructure, but purchase capacity at a wholesale level to provide leased lines at the retail level. These include companies such as Netsource, C&W (outside Dublin) and Sprint.

***Infrastructure Operators***

3.9 ESB Telecom and Aurora Telecom offer network infrastructure to wholesale operators which in turn is used for the provision of wholesale and retail services which fall within the scope of the relevant markets. Neither operator competes at the retail level.

**ESB Telecom**

3.10 ESB was awarded funding under the National Development Plan 2000-2006, to build national backbone infrastructure. Fibre has been deployed around the existing ESB electricity network. ESB manages the network as a 'carriers' carrier' (i.e. it will lease capacity to other operators rather than engaging in the retail market itself).

3.11 The ESB network comprises a Southern ring and a Northern Ring. The Southern Ring runs from Dublin to Shannon, Limerick, Cork, Waterford, Wexford, Arklow and back to Dublin. The Northern ring will run from Dublin, to Dundalk, Cavan, Letterkenny, Galway and Ennis.

**Aurora Telecom Ltd**

3.12 Aurora Telecom Ltd. (wholly owned by Bord Gáis) was established in 2002 with a 35-km fibre optic network in the central business district in Dublin. During 2002, this network was extended to 42 km, following its connection to five additional eircom exchanges, in response to customer orders. Aurora Telecom is a dark fibre provider

and its customers include new entrant telcos, wireless operators and data centres. The Aurora Telecom fibre network includes both a national network and a metropolitan network.

3.13 Aurora Telecom's national network provides connectivity between Dublin, Galway, Limerick, and Cork, Athlone, Tullamore, Mullingar, Ennis, Shannon, Belfast, Drogheda, Dundalk through a core fibre optic network. Aurora also has fibre rings within Dublin, Shannon and Ennis.

***Regulatory Developments***

3.14 Historically ComReg has regulated the services in this review by imposing an obligation on eircom to provide leased lines under a non discrimination obligation to both wholesale and retail customers. Additionally partial private circuits (PPCs) are mandated.

**Partial Private Circuits (PPCs)**

3.15 In July 2003, ComReg mandated eircom to provide a new wholesale version of leased lines, PPCs. If an operator is able to provide the leased line partly over its own network it has the option of purchasing a PPC for the remaining part. Further detail of how PPCs are purchased and provided is can be seen in Section 8. This service has been taken up by all the main operators. It allows them to provide services using infrastructure under their control, lowering costs, and creating efficiencies. It should also benefit end-users in terms of broader choices and more competitive price. ComReg notes that as PPCs have only recently been rolled out, it would be inappropriate at this stage to assess their impact on the relevant markets. However ComReg will continue to monitor their effect.

***Government Funded Projects***

3.16 A number of funded initiatives involving central and local governments have been developed as part of a national policy to facilitate broadband access. These are pertinent to the terminating and trunk segment and retail leased line market reviews as these projects will provide carrier neutral network infrastructure to wholesale operators for the provision of wholesale and retail services which fall within the scope of the relevant markets.

**Metropolitan Area Networks (MANs)**

3.17 The Department of Communications Marine and Natural Resources (DCMNR) has invested €65 million of Government and ERDF funding in the first phase of the Regional Broadband Programme, building 26 Metropolitan Area Fibre Networks (MANs) in towns and cities in association with the local and regional authorities.

3.18 The State-owned broadband infrastructure is being managed by Limerick based technology company E-Net (eNasc Éireann Teoranta) who have been awarded the 15-year services concession contract. E-Net operates as a wholesaler making broadband infrastructure available on an open-access basis to authorised telecoms operators. In addition to the fibre and duct products E-Net will also provide lit fibre to carriers who require such a facility, using either SDH or Ethernet technology. The company will facilitate and broker services with the preferred backhaul supplier of its client. Each

MAN is equipped with co-location facilities to allow operators to connect and interconnect. E-Net's prices will be standard for all MAN centres.

3.19 A program summary outlining progress to date may be seen in Appendix H. As at December 2004, nineteen MANs were fully constructed and six were under construction.

3.20 While some commissioning work remains to be completed, a number of the completed MANs are carrying commercial traffic. In June 2004, the DCMNR announced the next phase of the MANs Programme. All 92 towns with a population of 1,500 and over that do not have an adequate broadband provision from the private sector are to be targeted in a three-year programme with a dedicated multi-annual budget of €35 million per year. The plan will involve building Community Broadband Exchanges, in association with the local authorities that will remain in public ownership and be managed on an open-access basis.

3.21 The Minister for Communications, Marine and Natural Resources, Noel Dempsey TD, announced the first 35 of these towns on December 21st 2004. A further tranche will be announced in early 2005. The programme is fully funded by the Government in partnership with local and regional authorities.

**Other Government Funded Projects**

3.22 Additionally there have been a large number of other Government funded projects which have aimed to increase the availability of alternative telecommunications network infrastructure.

- ***The National Development Plan (NDP) 2000 – 2006*** - €200 million has been set aside, which includes projects to;
  - support ESB Telecom's construction of a fibre optic network (€50m project overall).
  - extend Esat BT's regional backbone network.

- ***Broadband Action Plan***—announced in December 2003, €140m of exchequer funding invested before 2007.
  - Connecting 88 towns with community broadband exchanges and strategic fibre-optic metropolitan area networks.
  - Group broadband scheme to facilitate smaller communities to pool their demands and secure high-speed connectivity from a range of providers with grant support from the government.

- ***Connectivity Framework Deals***—the government has facilitated framework deals, enabling high-speed broadband packages to be available to towns on the ESB Telecoms fibre optic network; and high-speed products connecting Dublin to 26 regional towns on the Esat BT network. Independent Service Providers, telecoms companies and consortia will be able to use capacity under these framework deals.

## Methodology and Scope of the Review

***Summary of consultation issue***

3.23 Regulation 26 of the *Framework Regulations* requires ComReg to, inter alia, define relevant markets appropriate to national circumstances for the purposes of the

*Framework Regulations*, taking utmost account of the *Relevant Markets Recommendation* which defines distinct markets for trunk and terminating segments. Together terminating and trunk segments enable the provision of wholesale leased line capacity. The *Relevant Markets Recommendation* also provides[14] that a market review must be undertaken for the purposes of Article 18 of the *Universal Service Directive*, which covers controls on the provision of the minimum set of leased lines.

3.24 This obligation applies to both the relevant markets identified in the *Relevant Markets Recommendation* and to additional relevant markets that ComReg may consider to merit investigation. In accordance with the *Framework Regulations*, the market definition exercise must be carried out in accordance with the principles of competition rules and must take "utmost account" of the *Relevant Markets Recommendation*, as well as the *SMP Guidelines*[15] [16].

3.25 In the initial consultation, ComReg laid out the proposed methodology for the review of the relevant markets. Detail of the implemented methodology is outlined in Appendix G. A summary of the methodology is also outlined below.

3.26 Additionally a number of issues arose (in the response to consultation) in the areas of the market definition and analysis which had an impact on the scope and the methodology of the review. In order to address them effectively ComReg will initially examine them in the section below. Notably these issues relate to the separation of the wholesale and retail markets and their associated products, the self-supply of wholesale leased lines by fixed and mobile operators, defining the market absent regulation, the impact of alternative infrastructure and the source of data used in the analysis.

3.27 In examining the scope of the review, ComReg took account of *The Relevant Markets Recommendation* which states that the European Commission considers that it is possible to define retail and wholesale markets that are broadly parallel. ComReg considers that leased lines are products and services provided in markets that exhibit a vertical structure having two basic layers: upstream and downstream. Products and services lying upstream are said to be wholesale products and services, while products lying downstream are retail products. Wholesale operators offer upstream products to other authorised operators (OAOs), who may operate as vertically integrated entities or as resellers, and to their own downstream units. Products and services sold directly to final end users (as opposed to those sold to OAOs) are said to be retail products and services.

3.28 Demand for wholesale products and services, which are used as inputs to the supply of retail products and services, necessarily derives from demand for those retail products and services (e.g. retail leased lines, mobile and fixed voice services). A substantial proportion of wholesale leased lines are purchased and used by fixed and mobile operators for their "own use". This means that the majority of wholesale leased lines

[14] See paragraph 7 of the Annex to the Relevant Markets Recommendation.

[15] Framework Regulation 27.

[16] Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic networks and services, OJ 2002 C 165/3, ("*The SMP Guidelines*").

are not subsequently re-sold as leased lines in retail markets; rather they are used as inputs to enable the production of other retail services (e.g. mobile and fixed services).

3.29 Self supply is the provision of services by a vertically integrated organisation from its wholesale arm to its retail arm for sale in the downstream market – there is no formal transaction in the provision of such services. ComReg has considered whether the self supply of trunk and terminating segments of leased lines imposes a competitive constraint on the prices set for trunk and terminating segments offered by a vertically integrated operator in the wholesale market. As noted above, the demand for trunk and terminating segments derives not only from demand for retail leased lines but also from demand for many other retail services (i.e. fixed and mobile voice services). Where a vertically integrated operator provides voice services on its own network using point to point capacity, this too would have to be factored in as the self supply of trunk and terminating segments.

3.30 ComReg notes that the correct approach to market definition assesses both demand and supply-side substitution possibilities. A tool used widely to define markets is the hypothetical monopolist test (HMT), which examines the substitution possibilities occurring in the vicinity where price is equal to cost. Where a hypothetical monopolist offers trunk and terminating segments of leased lines at a price equal to cost, other vertically integrated entities may choose to self-supply terminating and trunk segments of leased lines. This self-supply of lines is undertaken to enable the production of other electronic communications services. ComReg believes that self-supply is dimensioned to enable optimal output of these other electronic communications services. In other words, entities choosing to self-supply where a hypothetical monopolist sets price equal to cost would not plan to hold unused capacity over the long term. Whether self-supplied lines are included in the market for terminating and trunk segments depends on how those entities using self-supplied lines would react to a small but significant constant price increase by the hypothetical monopolist.

3.31 ComReg believes that faced with a small but significant lasting price increase, entities using self-supplied lines would not offer these lines to other entities in the 'leased lines' market. This is because the entities using self-supplied lines would sacrifice income in other markets (opportunity costs), which combined with other potentially high costs associated with change of use, would render such a move unprofitable when assessed over a period of a year or less. However, existing purchasers of leased lines faced with an increase in the price of lines might choose to opt for self-supply, which would constitute demand-side substitution. The latter may well have a strong constraining effect on the behaviour of a hypothetical monopolist, and as such could materially affect the boundary of the market. In this review, ComReg excludes self supplied trunk and terminating segments from its analysis of the wholesale markets, where such lines are understood to be those used for the supply of other electronic communications services.

3.32 ComReg took the view in its initial consultation that the hypothetical monopolist test should be applied initially in a context where regulation is absent, as this leads to the correct identification of market boundaries, and as such enables market power to be

correctly assessed. Further, applying the hypothetical monopolist test in the absence of regulation avoids the problem of circularity[17].

3.33 The absence of regulation in both the wholesale and retail segments ought to strengthen the profitable opportunities for a vertically integrated hypothetical monopolist. For example, if the price of a retail service were increased by a small amount, a vertically integrated hypothetical monopolist may find it profitable to deny competitors access to wholesale elements that are used as inputs to the retail offerings and in the absence of regulation may be in a position to implement such a strategy.

3.34 The absence of regulation is likely to result in markets that would be defined on a narrower basis than in the presence of regulation, as competitive constraints would be less apparent. ComReg notes that the retail markets in the absence of regulation will be no wider and likely narrower than the recommended markets specified by the European Commission in Relevant Market Recommendation. The EC has recommended the market for retail leased lines up to and including those with a capacity of 2Mb/s.

3.35 Additionally, given the vertical relationship between products and services that are the subject of this review ComReg has taken the view that markets should be defined initially at the retail level, and then, in light of the retail market(s) defined at the wholesale level.

***Consultation question 1***

**Q. 1. Do you agree with the methodology proposed by ComReg? Please detail your response.**

***Responses to consultation question 1***

3.36 Of four respondents to this question, all broadly agreed that the methodology proposed by ComReg was appropriate. It was considered by one respondent that it was correct to analyse wholesale markets first and then carry out retail analysis taking into account the findings of the wholesale review. That respondent also took the view that the SSNIP test and analysis of demand and supply-side substitutability was an appropriate method for defining the market.

3.37 However, another respondent expressed concern with respect to the application of the proposed methodology in the market review. Specifically they submitted that ComReg had not paid due attention to the timeframe for the analysis. It was the respondent's view that ComReg had undertaken a historical/current analysis and not a prospective one. They further argued that the pace of growth and technological change in today's communication market meant that historical trends were not a good predictor for the future for infrastructure products and, thus, the appropriate methodology was one that was forward looking.

3.38 The same respondent noted that ComReg had not taken sufficient consideration of infrastructure providers in its analysis i.e. Government funded MANs and Aurora

[17] Circularity occurs when markets are defined in the presence of regulation. This is because regulation implies the need for market power, and market power implies a market.

telecom.[18] Additionally, they suggested that ComReg should have considered the provision by three mobile network operators of low bandwidth trunk demands for own use and, possibly, to other MNOs (in the case of base station site sharing).

3.39 It was also claimed that ComReg had not used the data gathered as part of the Market Analysis process to draw conclusions on the relevant markets, but rather had relied on data from the Quarterly Review, which by its very nature was historical.

3.40 Additionally, it was pointed out, by another respondent that in analysing the defined markets ComReg should have considered market share along with other factors as general indicators of market power e.g. infrastructure advantages, barriers to entry. Any determination must have been based on all of these factors. The respondent was concerned that ComReg had placed too much reliance on market shares in its analysis. It was the respondent's view that in certain cases the market share data did not seem to have sufficient statistical base to be reliable or was not accurate enough to support the conclusions drawn.

3.41 The fourth respondent, stated support for ComReg's methodology in defining the relevant retail market *absent regulation*, but pointed out that no actual analysis of the retail market took place at this stage. It argued that this was an incorrect approach and that the characteristics of the services drove customer demand and this defines the retail markets. The respondent stated that it was unclear which retail market the review of the 'Retail Markets in the Absence of Regulation' related to and that the detail of analysis was insufficient compared to the analysis which took place in the rest of the document.

***ComReg's Position***

3.42 In the initial consultation, ComReg took the view that the wholesale markets should be defined initially and then, at the retail level. However in light of the responses to consultation a greater dichotomy between retail and wholesale leased line markets was identified. On this basis ComReg is of the view that it is more appropriate to define retail markets first and then the wholesale markets. The market(s) for retail leased lines provides only part of the wholesale demand for leased lines. Other retail services, such as mobile telephony, are also contributors to wholesale demand for leased line services. ComReg has not defined these other retail markets in this review (they have been reviewed by ComReg in a number of other reviews), but is mindful of their influence.

3.43 Additionally, as noted in *The SMP Guidelines* the starting point for the definition and identification of markets is a characterisation of retail markets over a given time horizon, taking into account demand-side and supply-side substitutability. Having characterised and defined retail markets which are markets involving the supply and demand of end users, it is then appropriate to identify relevant wholesale markets which are markets involving the demand for products by, and supply of products to, a third party wishing to supply end users.[19]

3.44 In its market definition and analysis ComReg took utmost account of *the Relevant Markets Recommendation* which recommends that the market be defined

[18] See market structure above for further detail.

[19] Section 2 SMP Guidelines

prospectively or in a forward looking manner. Further, ComReg took due consideration, in its market analysis, of prospective market developments which were likely to take place within the timeframe of the review. This document contains the final conclusion on methodology. ComReg has determined that it is appropriate to define the retail market before the wholesale analysis, on the basis that wholesale demand is partially derived from demand for retail leased lines.

3.45 It was argued that ComReg had not undertaken a forward looking review, given that it used some historical data. However ComReg notes that historical data provides valuable insight into the market dynamics and provides an important foundation for the market review. Support for this view is provided in *The SMP Guidelines* which states that '.*any information gathered, any findings made and any studies or reports commissioned or relied upon by the NRA in the exercise of their tasks, in relation to the conditions of competition in the telecommunications market should serve as a starting point for the proposes of applying Article 15 of the Framework Directive and carrying out a prospective market review'*[20].

3.46 It was also suggested that it was inappropriate to use data which ComReg collected as part of its Quarterly Review of the Irish Communications market, as opposed to data collected during the Market Review. One respondent felt that this was unsuitable as this data is 'by its very nature is historical'. However, ComReg notes that data collected as part of the Quarterly Review was used in support of data collected for Market Analysis, to verify trends and assumptions.

3.47 ComReg agrees with the sentiment put forward by one respondent that any determination that an undertaking enjoys market power must be based on a number of factors of which market share is only one. ComReg notes, several times in the consultation that market share *alone* is not sufficient to establish a position of dominance. Although a high market share is not sufficient to establish the existence of market power, it is unlikely that a firm without a significant share of the market would have significant market power. However ComReg has consistently considered other criteria[21] where relevant in its market analysis. ComReg takes this opportunity to clarify one respondent's query relating to ComReg's text on *Retail Markets in the Absence of Regulation*. The objective of this section was to identify the boundaries of the retail market without encountering problems that could arise due to circularity. ComReg is of the view that it is correct to consider initially the boundaries of the retail market in the absence of wholesale regulation. Doing this allows for an appropriate assessment of the derived wholesale market. To do otherwise would mean that the analysis of wholesale market power would depend on a retail market definition adapted to reflect the dynamics resulting from an existing wholesale remedy imposed to address market power at the wholesale level, which would lead to a circular argument. ComReg concluded that in the absence of regulation, the retail product market was very likely to be the same or narrower than the market recommended in the *Relevant Markets Recommendation*.

[20] Para 35 SMP Guidelines

[21] Historical conduct suggestive of the existence of market power e.g. pricing, technological advantages, infrastructure advantages e.g. ubiquity, barriers to entry, economies of scale and scope, vertical integration, potential competition, countervailing bargaining power and barriers to switching.

3.48 Figure 3.2 illustrates the scope of the review.

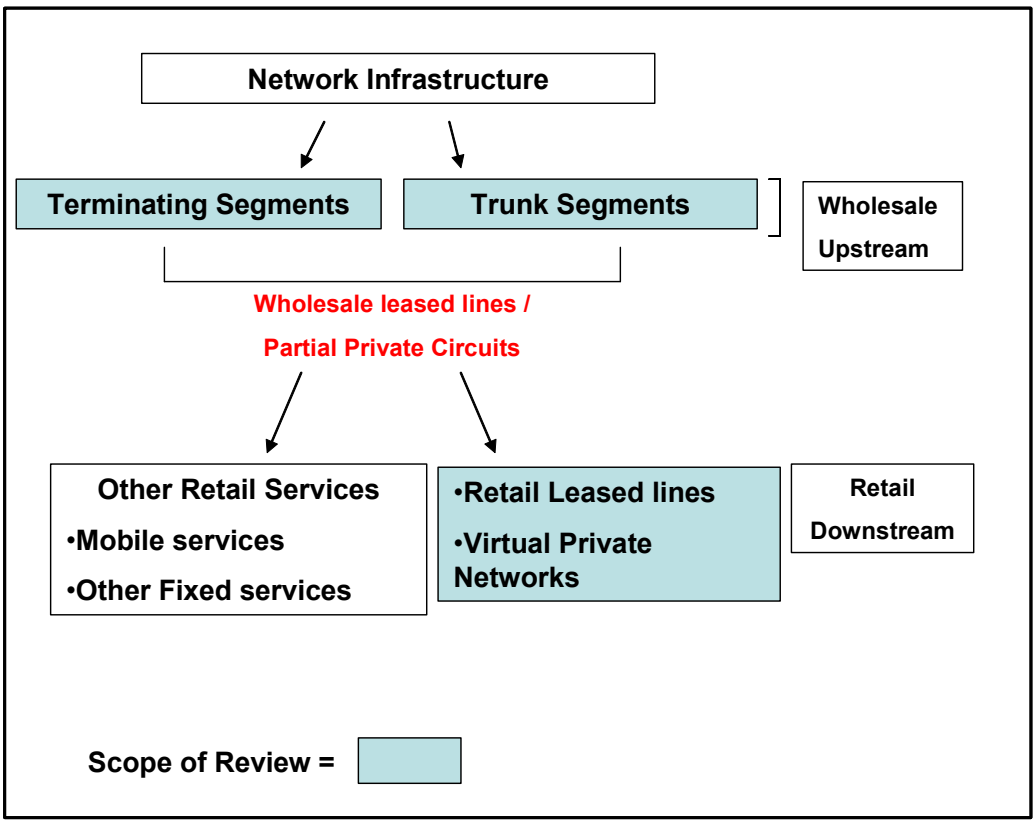



**Figure 3.2 Scope of the Market Review for Retail Leased Lines and Terminating and Trunk Segments**

3.49 One respondent noted that ComReg had defined the scope of the market too narrowly and had not taken sufficient account of infrastructure providers in the market analysis i.e. Government funded MANs and Aurora telecom (see 'Market Structure' for details). In response, ComReg notes that dark fibre provides one type of network infrastructure (others could be copper or a wireless technology) with which the relevant downstream products can be delivered. However, ComReg is of the view that the provision of dark fibre does not fall within the scope of this review. ComReg considers Aurora's infrastructure relevant to the review in that it can facilitate the provision of leased lines in the event that the wholesale operator lights the fibre for own provision. These circuits will be reflected in the calculation of retail leased lines market share. The impact of the MANs and Aurora are considered in further detail below.

3.50 ComReg notes one respondent's suggestion that ComReg should have taken account in its market review of self supply by mobile network operators (MNOs). It took the view that developments in the market indicated that MNOs are currently building their own networks rather than purchasing wholesale capacity products. ComReg notes that this trend affects the relevant markets by narrowing the potential customer base and, thus, the volume of circuits demanded. However, this would not justify the broadening of the market definition.

3.51 A retail leased line is typically used by business users to connect offices sites or to access the Internet. These are fixed permanent telecommunication connections providing symmetric capacity (same capacity both upstream and down stream). It is a matter for the end user to determine the nature and mix of services carried over a leased line. Leased lines provided in Ireland are typically supported by service level agreements (SLA) prescribing service quality, fault response and other service support elements that ensure the quality of service.

3.52 In addition to retail leased lines this review will affect a range of other retail services. This category includes all retail services which use the wholesale input services. These services include fixed and mobile voice services and VPNs. In relation to these services, ComReg believes that the most pertinent issue in the context of this review is not whether they should be subject to retail regulation, but ensuring that any dominance found to exist in the provision of the relevant wholesale services cannot be exploited through charging excessive prices, so raising the costs of the retail services to end users, or leveraged into the provision of retail services to the detriment of consumers. This issue concerning the scope of the wholesale access remedies is considered further in Section 11.

3.53 There are two wholesale products, terminating and trunk segments. An ECN/ECS provider can purchase an end to end leased line from another operator where it does not have its own network available for providing the service to a customer. Alternatively, if it is able to provide the leased line partly using its own network, it has the option of purchasing the remaining part from an operator e.g. a partial private circuit. Wholesale leased lines can be used for simple resale of retail leased lines or used as inputs to other retail services.

3.54 Within this review ComReg will consider retail and wholesale leased lines where both network termination points are within Ireland.

***Conclusion***

3.55 ComReg concludes that the scope of the review is limited to terminating and trunk segments provided in the wholesale market, and retail leased lines supplied in the retail leased line market.

3.56 ComReg concludes that the methodology adopted in its final review of retail leased lines and trunk and terminating segments allows for the optimal analysis of the markets.

# 4 Retail Market Definition

## Introduction

4.1 ComReg has sought to identify the scope of the retail market for leased lines.

4.2 Regulation 26 of the *Framework Regulations* requires ComReg to, inter alia; define relevant markets for the purposes of the *Framework Regulations*, taking the utmost account of the *Relevant Markets Recommendation*. The *Relevant Markets Recommendation* provides[22] that a market review must be undertaken for the purposes of Article 18 of the *Universal Service Directive*, which covers controls on the provision of the minimum set of leased lines.

4.3 Article 18 of the *Universal Service Directive* has been transposed into Irish law by Regulation 15 of the *Universal Service Regulations*. Regulation 15 of the *Universal Service Regulations* requires ComReg, where it determines, as a result of a market analysis, that a relevant market consisting of the provision of part or all of the minimum set of leased lines,[23] is not effectively competitive, to impose obligations regarding such provision and regarding the conditions for such provisions which are set out in Schedule 3 to the *Universal Service Regulations*, on an undertaking designated as having significant power in such relevant market. The 'minimum set' corresponds to leased lines at all capacities up to and including 2 Mb/s symmetric capacity which can be either digital or analogue.

4.4 Where as a result of such market analysis, ComReg determines that a relevant market for the provision of leased lines in the minimum set is effectively competitive, it is obliged to withdraw any obligations applicable to an undertaking on 24 July 2003, relating to leased lines, referred to in the *Universal Service Regulations* or, as appropriate, Regulation 15 of the Universal Services Regulations in relation to that specific leased line market.

## What are the functional characteristics of a leased line?

***Summary of consultation issue***

4.5 *The Relevant Markets Recommendation* in its headline describing leased lines refers to 'dedicated' capacity and connections e.g. traditional leased lines. However ComReg notes that within the Irish market point to point capacity is also available over managed services which may not necessarily be dedicated but which offer services, or could enable services functionally similar or even identical to a traditional leased line. The purpose of this section is to assess the functional substitutability of these managed services.

4.6 As a starting point, ComReg proposed functional characteristics of a leased line. In doing so ComReg considered whether the following managed services could offer a functionally equivalent service to a traditional leased line e.g. dedicated symmetric point to point capacity. In its analysis below ComReg has addressed the major issues

[22] See paragraph 7 of the Annex to the Relevant Markets Recommendation

[23] As identified in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive

associated with the relevant managed service, such as contention, on demand switching, transparency or dedicated capacity. Where a characteristic have not been discussed in relation to the specific service, ComReg is of the view it is not significant.

i. ATM VPN
ii. IP VPN
iii. Frame Relay
iv. Ethernet
v. Symmetric Digital Subscriber Line (SDSL)
vi. Internet Access via asymmetric broadband capacity

4.7 In making this assessment it is important to make the distinction between services and the network platforms on which those services are provided. Whilst this is relatively easy at a conceptual level, it is significantly more difficult in practice. When one is discussing services provided over PDH[24] or SDH[25] the distinction is clear, ComReg is only interested in point to point symmetric capacity products, and not any of the other services that are provided over these platforms, such as switched voice conveyance. For reasons outlined below, asymmetric point to point capacity is not considered a functional substitute to a traditional leased line.

4.8 However if one is looking at services provided over ATM or IP platforms the distinction is often blurred as the services are sold by reference to their underlying platform in order to highlight differing technical characteristics from traditional leased lines. These other platforms could be configured to provide a number of services other than symmetric capacity products that would fall outside of this market. In the discussion below, any reference to particular technological platforms is made only in the context of examining various managed services products sold to end customers rather than the technology which they are being provided over.

**(i) Asynchronous Transfer Mode Virtual Private Network (ATM VPN)**

4.9 ATM is a transmission protocol and is well suited for bursty[26] traffic. ATM has the potential to be contended[27], depending on the solution design specified by network parameters or data priorities.

4.10 In relation to on demand switching ComReg has considered the particular cases of channelised leased line bearers and ATM products. A channelised product is typically purchased by larger customers who take physical delivery of one access circuit (a 34 Mb/s bearer) in a central site, over which channels are provided which link to other sites. ComReg considers that ATM circuits offer permanent virtual paths with the paths defined at the time of provision and this is comparable to a channelised leased line.

[24] Plesiochronous Digital Hierarchy

[25] Synchronous Digital Hierarchy

[26] traffic which has variable bandwidth requirements

[27] Contention is a type of network protocol that allows nodes to *contend* for network access. That is, two or more nodes may try to send messages across the network simultaneously. The contention protocol defines what happens when this occurs.

4.11 *The Relevant Market Recommendation* refers to 'dedicated' capacity and connections.[28] ComReg considers this to mean that capacity is capable of being used only by the customer concerned and is available for the use when that customer requires it. Capacity is obviously dedicated when assigned exclusively to that customer. Management functions can be employed on an ATM VPNs which allow the customer the experience of a dedicated circuit without specific infrastructure or capacity being assigned exclusively and permanently to that customer and use. ComReg is minded that when considering the meaning of dedicated capacity it is important to examine the customer experience rather than the technical solution.

4.12 Additionally, a customer may not always require a guarantee of 100% capacity and may prefer to know that x% of capacity is always available with y% being the maximum capacity which can be used for 'bursts'. ComReg considers this to be dedicated capacity for the lower guaranteed capacity, with the ability to avail of additional capacity where available.

4.13 An operator may implement a form of statistical overbooking, whereby the operator calculates that the aggregated customer demands for network capacity at any time will be less than the theoretical total of all the capacity which has been sold. ComReg considers that this form of overbooking can be considered as dedicated capacity and ATM may have functional characteristics of a traditional leased line.

4.14 ComReg considers "dedicated" requires further clarification. ComReg therefore considers that where a customer has a reasonable expectation to achieve a minimum capacity, albeit with the ability at times to achieve a greater throughput, the service offers equivalent functional characteristics to a traditional leased line which provides dedicated capacity.

4.15 Additionally a traditional leased line provides "transparent transmission capacity". ComReg considers it useful to explore the meaning of 'transparent' by addressing it from an end user service perspective rather than examining the technical aspects. ComReg considers that transparency can be demonstrated by the ability to receive information as it was transmitted without significant loss or degradation. In an analogue world this could be construed as signals being received without significant loss (or gain) and little interference/distortion. In a digital environment this includes the reception of packets of information with little packet loss and little interference/distortion.

4.16 An important consideration for users is the type of distortion: a customer using capacity for voice could tolerate little packet delay but a customer using capacity for video transmission may have less concern about the issue of delay. On the other hand, for data transfer (e.g. e-mail) a customer may consider delay to be insignificant and may even accept packets delivered in the wrong order as the customer's end applications may manage any necessary reordering of packets.

4.17 Therefore, the issue of transparency is a feature which can be customer/service specific which is addressed in the solution design by specifying network parameters or

[28] page 27

data priorities such as CBR[29], VBR[30], etc. There are currently technical solutions for such customer requirements on platforms using SDH, ATM and IP.

4.18 Therefore ComReg concludes that contended capacity can provide equivalent functionality to the end user as uncontended or dedicated capacity. ComReg thus concludes that ATM VPN services may be functionally substitutable for a traditional leased line.

***Summary***

- contended services can offer equivalent functionality to dedicated capacity despite the fact that they are not dedicated.
- ATM has the potential to be contended, (depending on the solution design specified by network parameters or data priorities) and can provide a service level equivalent to dedicated capacity
- the issue of transparency is a feature which can be customer/service specific which is addressed in the solution design by specifying network parameters or data priorities
- ATM provides a functionally equivalent service to a traditional leased line

**(ii) Internet Protocol VPN (IPVPN)**

4.19 With IP solutions, the destination point is not typically defined by the originating point or capacity allocations associated with the access point, rather the final destination is associated with the IP address defined by the user. Indeed, IP circuits may be used for point to point or point to multipoint applications.

4.20 The IP network can be configured to replicate *point to point capacity* via IP tunnelling which provides a permanent virtual path between two points. ComReg considers that in this case IPVPNs may provide an equivalent service to a traditional leased line and thus is deemed to be a functional substitute, where other conditions around are met, such as perceived availability of a defined bandwidth. In this case, the fact that the service is provided over an IP platform is immaterial.

4.21 However an IP solution which would allow an end user to send data and choose to have that data arrive at different destinations on demand e.g. *point to multi point capacity* does not offer the equivalent functional characteristics offered by a traditional leased line. ComReg is of the view the inherent additional flexibility is provided, as customers do not have to define specifically the point to point connectivity at the time

[29] Constant bit rate is a service class for ATM networks in which the cell throughput is guaranteed.

[30] Variable bit rate is a service class for ATM networks in which the cell throughput can vary on a best effort basis in accordance with the connection contract.

of provisioning, and can adjust this easily and flexibly to suit their needs e.g. point to multi point IPVPNs.

4.22 Removing the functionality of on-demand switching which facilitates the point to multi point capacity constrains the functional characteristics to simply capacity between two points. ComReg considers a typical configuration to be either a private circuit (i.e. between two customer sites); or between a customer site and a service provider access point (e.g. internet or VPN access). ComReg therefore considers such point to point connectivity and point to service provider access as important features when acquiring capacity. The network terminating points (NTP) represent the boundary of a leased line. ComReg holds that a point between the platform and another platform such as a VPN would constitute a leased line NTP. Thus the NTP may be at the customer site or a service provider access point (e.g. internet or VPN access).

***Summary***

- Services which allow for on demand switching by end users and are capable of multipoint connectivity are not functionally equivalent to a traditional leased lines
- Where an IPVPN is used for the provision of point to point connectivity this is considered to be functionally equivalent to a traditional leased line.
- The network terminating points (NTP) may be at the customer site or a service provider access point (e.g. internet or VPN access).

**(iii) Frame Relay VPN**

4.23 Frame Relay is a packet-switched technology that uses bridges, routers, or FRADs (Frame-Relay access devices). These devices aggregate and convert data into Frame-Relay packets at a range of speeds. Frame Relay is generally used to carry smaller amounts of data between points in a similar way to ATM.

4.24 ComReg held in the initial consultation that Frame Relay services are not a functional substitute for a traditional leased line as they are generally heavily contended. Frame Relay VPNs differ from ATM VPNs in that they are not configured to provide an equivalent service to dedicated capacity. Frame Relay is generally used to provide highly contended capacity which does not allow the end user receive information as it was transmitted without significant loss or degradation. Thus it is not considered to have equivalent functional characteristics as a private circuit.

***Summary***

- Frame Relay is a heavily contended which does not provide an equivalent service to dedicated capacity and thus is not a functional substitute for a traditional leased line.

**(iv) Ethernet**

4.25 ComReg is aware of the recent introduction of an Ethernet based transparent capacity service. However, there are a number of functional differences between such circuits and leased lines including:

- Generally not used to carry voice services (although they can support VoIP), ISDN, VPNs or carry data based on other protocols
- The use of circuits to provide higher capacity circuits (e.g., above 20 Mb/s)
- Circuits are contended and are best effort.

***Summary***

- Ethernet technologies can be configured to offer an equivalent functional service to a high capacity traditional leased line.

**(v) Symmetric Digital Subscriber Lines (SDSL)**

4.26 Digital subscriber line technologies are based on copper loops that convert the copper pair into a digital line. DSLAMs[31] at an exchange connect high speed DSL data traffic. SDSL is described as symmetric because it supports the same data rates for upstream and downstream traffic.

4.27 SDSL is technically equivalent to other technologies used to provide low bandwidth leased lines. SDSL is considered to be point to point symmetric capacity. It is possible, that the characteristics of SDSL will provide a functional substitute to leased lines carried over SDH/PDH in that it will provide symmetric capacity that can be used for a wide variety of purposes and is flexible in terms of the services carried.

***Summary***

- SDSL is functionally equivalent to a traditional leased line.

**(vii) Internet Access via asymmetric broadband capacity**

4.28 The primary technologies used for the provision of broadband services in Ireland are ADSL, cable modem and Fixed Wireless Access (FWA). However, as concluded in ComReg's market review on Wholesale Broadband Access,[32] technologies based on copper loops or ADSL are the most prevalent and only significant means of broadband access in Ireland at present.

4.29 Leased lines can be used for Internet access. ComReg has examined whether or not asymmetric broadband capacity offers equivalent functionality as traditional leased lines. Symmetric refers to the data rate provided over a circuit to and from a customer location being equal. For example, a 64kb/s leased line is symmetric in that a customer can receive data or send data at this rate. A 512kb/s/256kb/s ADSL implementation would not be symmetric as a customer can receive data at a higher data rate (512kb/s) than can be sent (256kb/s).

4.30 This suggests that ADSL and symmetric capacity have functional differences which indicate that they cannot be considered as technical substitutes.

***Summary***

- ADSL and symmetric capacity have functional differences which indicate that they cannot be considered as substitutes.

[31] Digital Subscriber Line Access Multiplexers.
[32] Wholesale Broadband Access; (ComReg 04/25)

4.31 In its preliminary conclusion, ComReg held that retail leased lines were not limited to dedicated capacity but may offer functional characteristics of: *'point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user'* Additionally, ComReg proposed that the network terminating point represented the appropriate boundary of a leased line.

***Consultation question 2 and 3***

**Q. 2. Do you agree with the functional characteristics that are understood to be offered by leased lines products and services as described above? Please detail your response.**

**Q. 3. Do you believe that network termination points represent the boundary of a leased line? Please detail your reasoning.**

***Responses to question 2 and 3***

4.32 One respondent, while in agreement with the use of the terms in the definition of a leased line, held that a more appropriate definition would be: 'Point to point transparent symmetric capacity between network terminating points, dedicated/uncontended, which did not include 'on demand switching' or routing functions controlled by end users'. They argued that the important functional divergence between the above definition centred on the concept of bandwidth contention. In the respondent's definition, allocated leased line bandwidth was permanently available.

4.33 The respondent noted that this was not the case in the definition used by ComReg since full capacity availability might have been restricted based on predefined unspecified parameters. They argued that the uncertainty relating to availability in the definition rendered the definition used by ComReg inappropriate for a product that in many cases was used as input to other products requiring defined dedicated availability (normally 24/7/365) as a primary functional characteristic. Since it was unlikely that users/buyers of leased lines which required uncontended dedicated bandwidth would regard contended or shared bandwidth as a demand substitute, it was the respondent's view that the uncontended functional characteristic referred to in the ComReg definition did not adequately represent the functional characteristics of a leased line.

4.34 The same respondent also disagreed that transparency was not relevant when describing the product services offered in the leased line market. The respondent disagreed with this approach since, although some data applications could tolerate packet delay, these parameters were specified at higher layers in the network architecture. They argued that leased lines that were used to build networks were required to exhibit transparent operation for the data layer of the OSI seven layer model. The respondent concluded by noting that transparency was a key element in its leased line definition since it precluded the possibility of data undergoing distortion or transformation of the input sequence at the output.

4.35 Another respondent agreed to a large extent with the functional definition of a leased line; however they also noted that the critical consideration would be what a buyer was seeking when purchasing a leased line service. They argued that leased lines did not necessarily require 'on demand switching, or routing functions controlled by the end user'. However they noted that this did not preclude any technology with this capability from being used to provide point to point capacity between network termination points. In cases where this occurred, the respondent believed that the product fell within the relevant market definition.

4.36 The same respondent agreed with ComReg's proposal that channelised bearers should be included in the definition of a leased line. They also noted that one Irish operator (eircom) was increasingly using an IP product as a substitute for leased lines and had been successful in deploying this product in place of leased lines for some customers.

4.37 A third respondent was of the view that the distinction made by ComReg between wholesale and retail services was incorrect. They suggested that the more appropriate approach to the analysis would have assumed that SDH and PDH were wholesale level technologies whereas services 'on top of these layers', such as IP, were retail level services. Wholesale products would comprise first layer technologies such as SDH and PDH, over which ATM or IP could be run by the incumbent or its competitors in order to provide different services with different characteristics (contention, switching or routing functionality) to their customers at the retail level.

4.38 One respondent argued that PPCs and wholesale leased lines were wholesale services, which network operators could either sell 'as is' in the retail market as standard leased lines or could add value by providing further additional service features. These two types of product fell into separate markets. Hence, they took the view that VPNs, IP VPNs, ATM solutions and Frame Relay fell into separate market(s) to retail leased lines.

4.39 Of the two respondents who provided submissions on this issue both agreed that network termination points represented the appropriate boundary point. Using their proposed definition[33] one respondent agreed that the network termination point was the appropriate boundary of a leased line.

4.40 Further support was provided by another respondent who noted that, network terminating point was the logical boundary point. If a consumer was considering replacement by a substitute product, then this would occur at the network termination points.

4.41 A further respondent submitted that ComReg's assessment of what was meant by transparency was deficient. In transmission terms transparent was taken to mean the ability of a user to make use of the total offered capacity as they see fit either by "framing" the capacity (e.g. combining a number of VC12 components and a VC3 within a transparent STM-1) or using the capacity in a single aggregated block. An STM-1 offered configured so as only to support a 63xVC12 payload would not meet this transparency condition.

[33] One respondent's suggested definition of an NTU (Network Termination Unit) is the point at which the network is controlled and maintained by one operator ends and at which it begins for an end-user (other operator)

***ComReg's position to question 2 and 3***

4.42 ComReg does not agree with the respondent's submission that 'it is unlikely that users/buyers of leased lines requiring uncontended dedicated bandwidth would regard contended or shared bandwidth as a functional substitute'.[34] ComReg notes that this statement was not supported by any evidence. Dedicated capacity can be provided in other ways which are functionally equivalent from the demand-side, to allow the customer the experience of a dedicated circuit without being assigned exclusively and permanently to that customer site. This is outlined in detail in above. ComReg concludes that where a customer has a reasonable expectation to achieve a minimum capacity, albeit with the ability at times to achieve a greater throughput, the service offers an equivalent service to a traditional leased line which provides dedicated capacity.

4.43 It was also stated that transparency is a key element of the definition of a leased line since it precludes the possibility of data undergoing distortion or transformation of the input sequence at the output. It is important to analyse transparency by examining it from the end user perspective rather than the technical side. It must first be noted that end users require leased lines for different functions e.g. high quality transmission of voice or data. A customer can tolerate little delay on voice. However for a customer using a leased line for the transmission of data a delay will not significantly affect the quality of end user service. Transparency can be addressed in the solution design by specifying network parameters or data priorities such as CBR and VBR, to suit the needs of end users. ComReg considers that these products are close functional substitutes, in that they provide the same functionality.

4.44 One respondent argued that ComReg should not exclude a technology which allows for 'on demand switching, or routing functions controlled by the end user' from the definition of a leased line. ComReg supports this view and holds that where a technology can facilitate point to point capacity (even if it can also provide point to multi point capacity) the technology may be considered as a functional substitute to a traditional leased line.

4.45 One respondent was of the view that ComReg's methodology in defining the functional definition of leased lines was inappropriate. They felt that the distinction made by ComReg between wholesale and retail services was incorrect and suggested that the more appropriate approach to the analysis would have assumed that SDH and PDH are wholesale level technologies whereas services 'on top of these layers', such as IP, are retail level services. ComReg does not support this view. Traditional retail leased lines are provided over SDH and offer dedicated point to point capacity to end user. Alternatively, as established above, IP services may be also provided as a layer over the SDH network (or alternatively over Ethernet) and can offer the same functionality as a dedicated leased line product. ComReg has examined whether these services are functional substitutes to the end user in the relevant retail market and to an authorised operator in the equivalent wholesale markets. ComReg notes that this is independent of the infrastructure which the capacity is being provided over.

4.46 One respondent noted that an STM-1 offered which was configured so as only to support a 63xVC12 payload would not meet ComReg's transparency condition.

[34] eircom's response to consultation

ComReg notes that this is true however a STM-1 would be configured in the way end customer requested it, be that a number of VC12 (2Mbits), VC3 (34/45Mbit) or STM-1 (155Mbit).

4.47 ComReg concludes that network terminating points (NTP) represent the boundary of a leased line. ComReg holds a point between this platform and another platform such as a VPN would constitute a leased line NTP. Thus the NTP may be at the customer site or a service provider access point (e.g. internet or VPN access).

***Conclusion***

4.48 In conclusion, ATM VPNs, IP VPNs (where they offer point to point capacity), Ethernet circuits, SDSL services currently offer the functionality equivalent to a traditional leased line. Frame Relay circuits and ADSL do not offer an equivalent service to a traditional leased lines. ComReg will also consider any managed services if and when it meets the functional requirements below to assess whether they possess the functional characteristics comparable to a private circuit.

| Managed Service | Functionally Equivalent to Traditional Leased Line? |
|---|---|
| ATM | Yes |
| IP VPN | Yes (if point to point) |
| Frame Relay | No |
| Ethernet | Yes |
| SDSL | Yes |
| ADSL | No |

**Table 4.1: Managed services which have the functional characteristics of a traditional leased line**

4.49 ComReg concludes that the functional definition of a leased line, is not limited to dedicated capacity but can include all services that offer characteristics of: *'point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user'*

4.50 ComReg concludes that the network terminating point represents the appropriate boundary of a leased line

## Market Definition

4.51 In defining a market for retail leased line capacity, ComReg considers a number of criteria which are listed below and - outlined in Figure 4.1 - analyses:

- whether traditional leased lines and other **managed services** are included in the same relevant market;

- whether leased lines of **various bandwidths** fall within the same retail market;
- whether **analogue and digital leased lines** fall within the minimum set of leased lines;
- whether **international** and **national leased lines** fall within the same retail market.

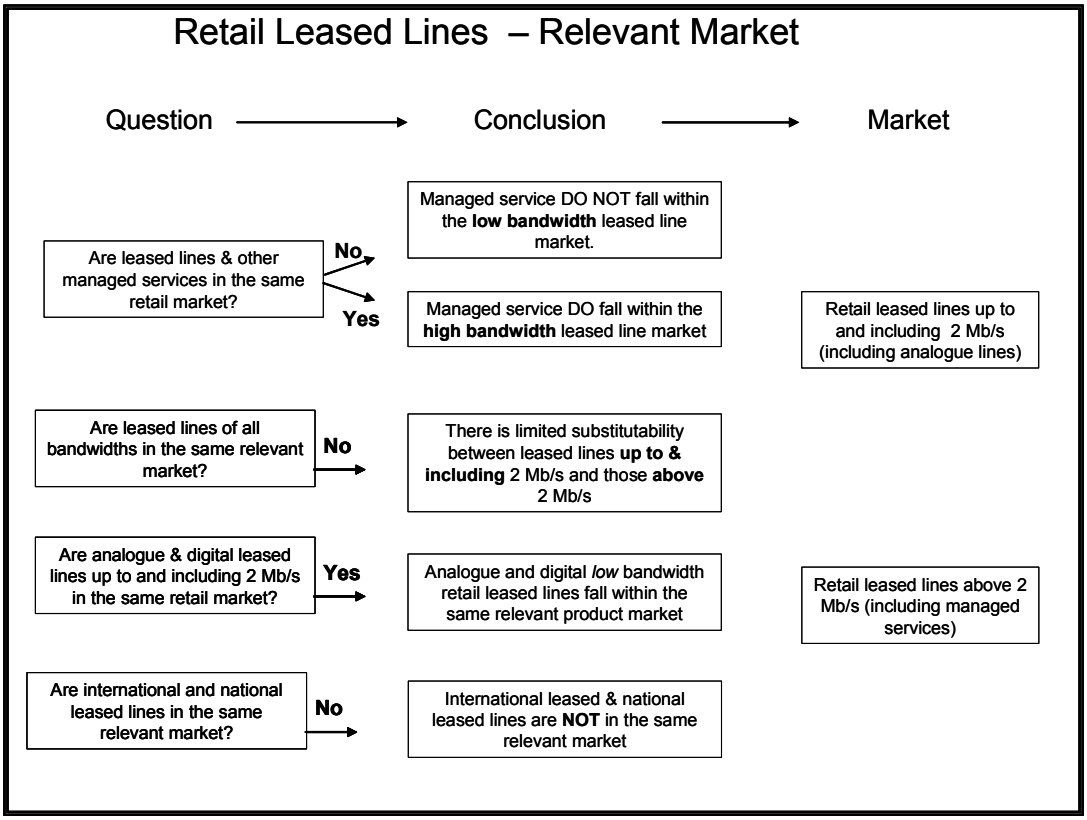



**Figure 4.1 – Market Definition Process**

## Are traditional leased lines and other managed services included in the same relevant market?

### *Summary of consultation issue*

4.52 The *Relevant Markets Recommendation* has defined a retail leased line market for the minimum set of leased lines. Retail leased lines in the minimum set provide uncontended transmission capacity (i.e., guaranteed bandwidth) between two points for speeds up to and including 2 Mb/s. In accordance with this recommendation, ComReg has defined two separate retail markets, one for leased lines up to and including 2 Mb/s and the second for leased lines above 2 Mb/s. The appropriateness of this bandwidth split is considered further below in the review of whether leased lines of all bandwidth are included in the same relevant market.

4.53 In assessing whether other managed services products fall within the same relevant market as retail leased lines, ComReg considered the extent to which such services

would exert competitive pressure on the pricing of traditional leased lines offered by a hypothetical monopolist.

4.54 When defining a market for retail leased lines, ComReg takes into consideration the *Framework Regulations*[35] which require the NRA to take the utmost account of the desirability of making regulation technologically neutral, that is to say it does not discriminate in favour of or against the use of a particular type of technology. In defining the market, ComReg should, therefore, not differentiate between technologies used to deliver leased lines, provided that there is no functional or pricing difference.

4.55 In the initial consultation ComReg established that a number of managed services can provide a functionally equivalent service to a traditional leased line. However, for a number of reasons these services have been excluded from the relevant market as outlined in ComReg's response to consultation questions 4-10.

***Consultation question 4-10***

**Q. 4. Do you believe VPNs should not be included in the market? Please provide evidence to support your response.**

**Q. 5. Do you believe that ATM VPN services should not be included in the market? Please provide evidence to support your response.**

**Q. 6. Do you believe that IP VPNs should not be included in the market? Please provide evidence to support your response. Please give your views on whether the functional definition should be amended.**

**Q. 7. Do you believe that Frame Relay should not be included in the market? Please provide evidence to support your response.**

**Q. 8. Do you believe that Ethernet should not be included in the market? Please provide evidence to support your response.**

**Q. 9. Do you believe that SDSL should not be included in the market? Please provide evidence to support your response.**

**Q. 10. Do you believe that ADSL should not be included in the market? Please provide evidence to support your response.**

***Responses to consultation questions 4-10***

4.56 One respondent was of the view that it was appropriate for ComReg to confine the market definition for leased lines up to and including 2 Mb/s to the standards of the minimum set. In contrast, all other respondent believed ComReg had defined the

[35] Framework Directive: Recital 18.

market too narrowly, and has not reflected the impact of services such as point to point IP and Ethernet which are effectively substitutes.

4.57 Another respondent made a general comment in relation to questions 4-10, noting that ComReg had defined the leased line market too narrowly. Services such as ATM, IP, and Ethernet were effectively excluded from consideration but have been used to compete with leased line offerings from other operators. It was submitted that ComReg should have undertaken a more comprehensive analysis to include these services within the scope of this market.

4.58 One respondent stated that a VPN itself was not a substitute for a leased line; it was further up the value chain. However, the underlying leased line that was used to provide capacity upon which to build a VPN would remain within the definition. They noted further that, while an IPVPN itself was outside the scope of a leased line definition, any point to point capacity used in the provision of the IPVPN would remain within the definition.

4.59 In relation to ATM services, one respondent argued that ATM services should not be included in the retail market. They noted that ATM had not achieved the position of pre-eminence in network architecture originally forecast when it was first launched. It was their view that it was likely that the demand for, and deployment of, ATM services would continue to decline.

4.60 However, another respondent noted that ATM could be used to provide point to point capacity. To the buyer it was a substitute product. They argued that a supplier of ATM products could readily provide point to point capacity to customers in response to an increase in price for SDH leased lines. For this reason, the respondent believed that ATM services, when used to provide point to point capacity, should have been within the definition of a leased line.

4.61 There was support among respondents that Frame Relay services should not have been included in the retail low capacity leased line market. It was one respondent's view that Frame Relay services did not constrain the market for leased lines. It was its view that the market was shrinking and would continue to do so during the timeframe of the review.

4.62 There was support from one respondent that Ethernet services should not be included in the relevant market. However, they did not elaborate or provide reasons. In contrast, another respondent disagreed and stated that Ethernet technology, where used to provide point to point capacity, imposed a constraint on pricing for leased lines, particularly for capacities above 2Mb/s. Another respondent supported this view; and took the view that Ethernet was a wholesale access solution.

4.63 There was a strong view among some respondents that SDSL, if available commercially, should be included in the market for leased lines, up to and including 2 Mb/s. One respondent] noted that, at the time of consultation, SDSL services fell within the functional description of leased lines. However, they noted that no SDSL products were commercially available in Ireland. These services could have been expected to become a substitute for leased lines in the medium to long term, if appropriate upstream components are supplied by eircom. OAOs must either have used wholesale leased lines from eircom, or LLU as an input for SDSL service. It was submitted that there was not been widespread take-up of LLU in Ireland because of

pricing and other difficulties. As a consequence, it was considered to be unlikely that SDSL would constrain leased line prices during the timeframe of the review.

4.64 Another respondent proposed that SDSL should not be included in the same retail market as the minimum set of leased lines, because SDSL was currently not supplied by any players in the market and was unlikely to be supplied within the lifetime of this review. However the same respondent agreed with ComReg's view that SDSL services may at some point in the future act as a competitive offering in the market, if uncontended.

4.65 Two respondents agreed that it would be inappropriate to have included ADSL services in the relevant market. It was stated that leased lines had traditionally provided symmetrical capacity. However, from a buyer's perspective, this was not always an essential characteristic of the product. Many applications for which leased lines were used are asymmetrical. However, the contention ratios used for ADSL services have meant that they have not become substitutes for leased lines. It was, therefore, noted that ADSL services have not had an impact on leased line pricing, and agreed that they should be excluded from the definition.

***ComReg's position***

4.66 As noted by one respondent, what is important in this consideration is what the buyer is seeking when buying a leased line service. In examining whether it is appropriate to broaden the market definition, ComReg takes the utmost account of *The SMP Guidelines*, which notes (paragraph 44) that the relevant product market comprises of all those products or services that are sufficiently interchangeable in terms of their objective characteristics, by virtue of which they are suitable for satisfying particular needs of consumers, their prices or intended uses but also in terms of conditions of competition and supply and demand of the market. As noted previously, ComReg must be technology neutral in its analysis.

4.67 As a starting point, ComReg identifies that in a recent survey, when business users were asked for what purpose they use their leased line connection the following results were found. As outlined in Figure 4.2 below there are a number of applications for which leased lines are commonly used i.e. all end users utilise leased lines for e-mail while approximately 39% use leased lines for video conferencing. It can be seen that dedicated or contended services can be used to facilitate the provision of these applications. Clearly contended capacity can be used to provide a functionally equivalent service as dedicated capacity for some applications. However ComReg must establish to what degree this substitution can and does take place.

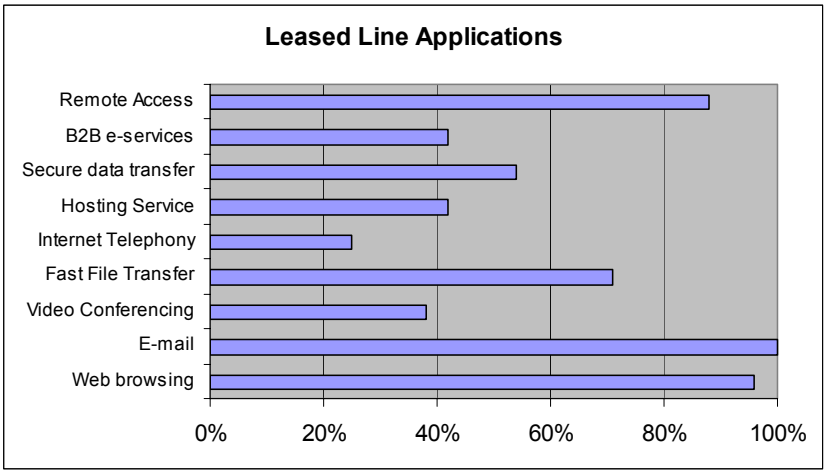



**Figure 4.2: Applications commonly used over Leased Lines**

4.68 It can be seen that there is increasing interest in IPVPN services in Ireland. As noted in eircom's annual report' *There is currently a trend for migration from analogue and lower capacity digital lines to higher capacity digital lines (e.g. 2Mbps) and migration of some customers to other managed data services such as Business IP+.*[36] Additionally, EsatBT holds that its IP connection *'can offer dedicated, scaleable bandwidth'*[37].

4.69 The essential difference between dedicated and contended capacity, is that while dedicated capacity is fully allocated to the end user, contended networks can be managed to provide end users with an equivalent service. Operators gain efficiencies while the quality of service requirement is managed via SLAs. ComReg notes that network management technology has improved significantly and has reached a point of sophistication which can guarantee end users services equivalent to dedicated capacity when required. ComReg is of the view that prospectively, even greater efficiencies can be gained with the emergence of new technology.

4.70 One respondent noted that **ATM** circuits should not be included in the relevant market, as demand for and deployment of ATM services is likely to decline. ComReg recognises that when defining the relevant market it is important to assess the functional characteristics and pricing of products, together with relative ease of provision on the supply-side. Additionally, the relative take up of services will provide evidence that substitution is taking place within the market. However, from the information available to ComReg, point to point capacity provided over ATM consistently account for a large proportion of the market. In the market analysis (Section 6) ComReg also examines the competitive constraint which an operator can exert. ComReg uses as an indication of market power the relative quantity of services which operators provide in the relevant market.

4.71 ATM provides a functionally equivalent service to a traditional leased line. ComReg also notes that ATM VPNs are currently the primary means of providing high capacity circuits and are thus included in the relevant market for leased lines above 2 Mb/s. Currently ATM access circuits are only available at speeds in excess of 2 Mb/s,

[36] eircom SEC report….

[37] www.esatbt.ie

(however it is technically possible to have an access link of 2 Mb/s). If and when ATM is used to supply low capacity leased lines, ComReg will assess whether there is demand-side substitution and whether it is appropriate to include these services in the market for the minimum set of leased lines.

4.72 Additionally ComReg considers an **IPVPN** (when used to provide point to point connectivity) to be functionally equivalent to a traditional leased line. However ComReg notes that there is an inherent difficultly in applying the SSNIP text to assess whether in fact these products constrain the minimum set of leased lines. Firstly pricing for an IPVPN is based on a number of variable criteria i.e. distance, capacity, burstability and quality of services Thus pricing is typically bespoke and will vary depending on the users requirements. It is therefore not possible to show that a relative price increase of either product would support demand-side substitution between the two markets.

4.73 However ComReg does recognise that there is a movement from traditional leased lines to IPVPNs which is having an impact on the market. This is clear from operators' responses to the initial consultation, in addition to interviews carried out with operators as part of the second data collection. Data available to ComReg indicates that some retail customers are using alternatives to point to point capacity. Where traditionally a customer would have bought individual leased lines for a branch network (or channelised leased lines), the market appears to be moving to use of IP VPNs. ComReg notes that one large Irish customer of traditional leased lines (used for the transmission of highly secure data) recently switched to point to point IPVPNs.

4.74 ComReg is clear that there is demand and supply-side substitution at the margins of the market. However at this point, ComReg does not have sufficient evidence available to it to conclusively show sufficiently significant demand-side substitution to justify broadening the market from the minimum set. However ComReg intends to closely monitor the market in the short term and to continuously assess the impact of these products.[38] If appropriate ComReg will carry out a further market definition under the *Framework Regulations* to extend the market and include other transmission products other than the minimum set of leased lines.

4.75 ComReg is of the view that **Frame Relay** does not offer an equivalent service to dedicated capacity. Frame Relay VPNs differ from ATM VPNs in that they can not be configured to provide an equivalent service to dedicated capacity. Frame Relay is generally used to provide highly contended capacity which does not allow the end user receive information as it was transmitted without significant loss or degradation. Thus it is not considered a demand-side substitute. There was support among respondents for the exclusion of Frame Relay as it does not constrain the price of a leased line within the minimum set.

4.76 ComReg considers that capacity provided over **Ethernet** offers the equivalent functionality to a traditional leased line. However, the information available indicates that this technology is generally not used for the provision of low bandwidth services. This is evident from the fact that Ethernet technology is available at the minimum

[38] ComReg intends to monitor market trends of new product development and substitution trends, for this purpose ComReg may request information for this purpose, periodically. Furthermore, the dispute resolution process will assist ComReg to monitor the developments of the market.

capacity of 10 Mb/s. ComReg therefore includes capacity over Ethernet in the retail market for high bandwidth leased lines. This conclusion was supported by respondents.

4.77 ComReg agrees that **SDSL** technology is a functional substitute for leased lines. However, as the product is currently not available commercially in Ireland, it is difficult for ComReg to make any firm conclusions whether this technology should be included in the relevant market as pricing data is unavailable. Therefore, it cannot be shown, from the demand-side, that SDSL is in fact a substitute. However if and when SDSL is used to supply low capacity leased lines, ComReg will assess whether there is demand-side substitution and whether it is appropriate to expand the market definition under the *Framework Regulations* to include these services in the market for the minimum set of leased lines.

4.78 Additionally, **ADSL** is not included in the market as it provides asymmetric capacity, which is not considered by ComReg (with support from respondents) to be equivalent to a leased line.

4.79 There are several platforms which can deliver a leased line. These include for example; SDH, PDH and ATM. In so far as these platforms offer point to point symmetric capacity, whether contended or uncontended, and which does not include on demand switching or routing functions which the user controls, then these platforms are relevant in defining the market. This is particularly pertinent when looking at supply-side substitution, given that an operator can buy inputs using any one of these platforms to provide retail products.

4.80 As a starting point, ComReg considers whether in the event of a lasting price increase of a traditional leased line by a hypothetical monopolist supplier, a provider of another transmission product could potentially switch in the immediate to medium term to offer dedicated leased line services without incurring significant costs. ComReg notes that the significant element of sunk costs associated with the provision of managed services products and traditional leased lines is incorporated into the underlying network infrastructure i.e. trenching, ducting, optical fibre. ComReg notes that the supply of the listed managed services products are just differentiated by the network equipment utilised over the network infrastructure.

4.81 There is clear supply-side substitution from other managed services products to traditional leased lines e.g. a provider of point to point capacity over ATM could very easily switch its production to provide traditional leased lines. However the converse is not as simple. Significant financial investment (in terms of CPE equipment) would be required if an operator of traditional leased lines wished to respond to a relative price increase of a point to point circuit provided via ATM. ComReg notes that this would not be economically feasible, in response to a lasting price increase of a single circuit, however if an operator was guaranteed that this price were significant and lasting increase on a number of circuits then the investment required for the network upgrade would be economically feasible and the transition would be possible within a relatively short timeframe. Thus ComReg notes that there is supply-side substitution between the minimum set of leased lines and other managed services products.

4.82 There was support from respondents that the underlying leased line that is used to provide capacity upon which to build a VPN should be included in the market definition. ComReg holds that an access circuit which complies with the technical

standards outlined in the list of standards published in the OJEC[39], is considered part of the minimum set of leased lines. There was support for this view from respondents who noted that while a VPN itself may not be a substitute for a leased line as it is further up the value chain (where it offers point to multi point capacity), however, the underlying leased line that is used to provide capacity upon which to build a VPN would remain within the definition.

***Conclusion***

4.83 ComReg concludes that:

- retail leased lines provide the following functionality: *'point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user'*.

4.84 Table 4.2 summaries ComReg's conclusions on whether traditional leased lines and other managed services are included in the same relevant market:

| Managed Service | Functionally Equivalent to Traditional Leased Line? | Same market as traditional leased lines? | |
|---|---|---|---|
| | | Low Bandwidth | High bandwidth |
| ATM | Yes | No | Yes |
| IP VPN | Yes (if point to point) | No | Yes |
| Frame Relay | No | No | No |
| Ethernet | Yes | No | Yes |
| SDSL | Yes | No | No |
| ADSL | No | No | No |

**Table 4.2: Managed services included in the same market as traditional leased lines.**

- ATM offers equivalent functionality as a traditional leased line. However ATM is typically used for the provision of high capacity data transmission and thus is excluded from the minimum set of leased lines. ATM is included the market for high capacity leased lines.

- A point to point IPVPN can offer the equivalent functionality to a traditional leased line. ComReg is of the view that there is some demand-side substitution within the margins of the low bandwidth market however ComReg does not have sufficient evidence to justify broadening the market definition for the minimum set of leased lines. IPVPNs are therefore not included in either market for retail low bandwidth leased lines. However at the high level there is sufficient take up of services and thus point to point IPVPNs are included in the market for leased lines above 2 Mb/s.

[39] Official Journal of the European Communities pursuant to the Article 17 of the Framework Directive

- Frame Relay does not offer equivalent functionality to a traditional leased line and thus is not included in either of the relevant leased line markets.

- Ethernet can offer the equivalent functional characteristics of a traditional leased line however ComReg does not consider that capacity provided over Ethernet in the market for the minimum set of leased lines. However as Ethernet is generally used to provide capacity above 2 Mb/s it is included in the high bandwidth leased line market.

- SDSL technology is a functional substitute for leased lines within the minimum set. However, as the product is currently not available commercially in Ireland it is not included in the relevant market. SDSL is used for circuits up to and including 2 Mb/s and therefore is excluded from the market for leased lines above the minimum set.

- ADSL is not included in the same market as traditional leased lines as it provides asymmetric capacity, which is not considered to be functionally equivalent to a traditional leased line.

## Are leased lines of all bandwidths in the same relevant market?

***Summary of consultation issue***

4.85 ComReg has considered whether, and the extent to which, retail leased lines of different bandwidths fall within the same retail product market(s). A range of bandwidths for retail leased lines are currently available in Ireland, namely:

- 9.6 kbps
- 64 kbps (and multiples thereof ranging from 128 kbps – 2048 kbps[40]);
- 34 Mb/s;
- 45 Mb/s; and
- 140/155 Mb/s and above.

4.86 Multiple circuits can be acquired by entities seeking capacity of other bandwidths, subject to a number of technological and pricing issues that are discussed below.

**Demand-side substitution**

4.87 Retail leased lines provide end users with capacity that can be used to carry voice and/or data traffic from point to point. The amount of capacity required on any particular route is generally tailored to the volume of traffic on (or anticipated to be likely to flow over) that route. In this context, ComReg has considered the extent to which retail leased lines of particular bandwidths (and multiples thereof) are substitutes for each other. In essence, the question is whether a lasting 5 to 10% price increase by a hypothetical monopolist supplier of a particular bandwidth would lead to a sufficient number of end users switching to another (lower or higher) bandwidth, so that the price increase is ultimately unprofitable.

[40] Please see Appendix I for the range of products provided by eircom

*Functional substitutability*

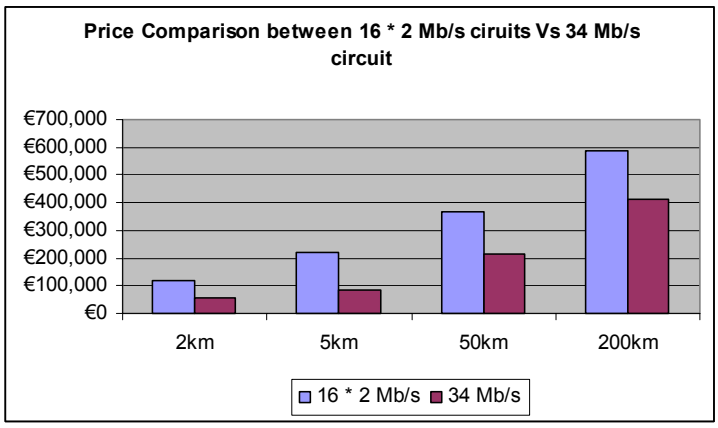
4.88 In terms of pure functionality, ComReg takes the view that it is possible to use multiples of lower bandwidth leased lines as substitutes for higher bandwidth leased lines, and higher bandwidth to meet lower capacity requirements[41]. ComReg is of the view that bandwidths up to and including 2 Mb/s[42] are generally provided over copper infrastructure (currently over 95% of circuits), while those above 2 Mb/s are predominantly provided over fibre networks. ComReg has considered the impact of the different underlying infrastructures used in defining the relevant market for Ireland. ComReg notes that, from a purely functional perspective, it would appear that a chain of substitution exists for various bandwidths.

*Price comparisons*

4.89 It is important that any price comparisons made by ComReg compare prices at the competitive level, since the hypothetical monopolist test contemplates demand and supply-side responses for a lasting price increase starting from competitive prices[43]. The retail leased line rates are currently regulated and can be considered to reflect a competitive price level for the provision of retail leased lines.

4.90 That said, ComReg notes that the relative price differences between lower bandwidth leased line prices and higher bandwidth prices suggest that it is unlikely that end users would respond to an increase in, for example, prices for 34 Mb/s leased lines by buying multiple 2 Mb/s lines[44]. Similarly, an end user is unlikely to respond to a small but significant increase in, for example, 2 Mb/s leased lines by buying a 34 Mb/s circuit.

4.91 The prices for a leased lines of 2 Mb/s and 34 Mb/s, the annual prices are outlined in the graph below:




[41] ComReg is aware that, for certain limited types of end user application, there may be technical constraints on the substitutability of circuits up to 2 Mb/s.

[42] For the purposes of this review ComReg will consider a 2048 kb/s leased line to be equivalent to a 2 Mb/s leased line.

[43] This is explained in further detail in Appendix G – Market Review Methodology.

[44] The following prices reflect eircom's published rates, as at January 2003. The assumptions used to calculate prices are contained in Appendix I.

| Annual Charges | | | |
|---|---|---|---|
| | 2 Mb/s | 16 * 2 Mb/s | 34 Mb/s |
| 2km | €7,237 | €115,792 | €55,830 |
| 5km | €13,725 | €219,600 | €86,748 |
| 50km | €23,029 | €368,464 | €214,738 |
| 200km | €36,855 | €589,680 | €412,817 |

**Table 4.3: – Price comparison between 2 Mb/s and 34 Mb/s leased lines**

4.92 This pricing evidence shows that it is not cost effective for a customer to use 2 Mb/s leased lines as 'building blocks' to respond to a constant price increase for higher bandwidth leased lines, in this case for a 34 Mb/s circuit.

4.93 Similarly, it would appear that multiple 34 Mb/s leased lines are unlikely to provide a substitute for 155 Mb/s leased lines.

| Annual Charges | | | |
|---|---|---|---|
| | 34 Mb/s | 4.5 * 34 Mb/s | 155 Mb/s |
| 2km | €55,830 | €251,235 | €84,620 |
| 5km | €86,748 | €390,366 | €104,620 |
| 50km | €214,738 | €966,321 | €239,620 |
| 200km | €412,817 | €1,857,677 | €502,120 |

**Table 4.4: – Price comparison between 34 Mb/s and 155 Mb/s leased lines**

4.94 However ComReg suggests that there is a chain of substitution[45] between a 34Mb/s, 45Mb/s and 155 Mb/s leased line. More importantly ComReg is minded that the majority of high bandwidth leased lines are provided over managed services rather than traditional leased line and can be provided at virtually any capacity above 2 Mb/s. ComReg thus concludes that there is a single market for high bandwidth retail leased lines.

4.95 It would appear that various bandwidth n*64 kilobit/s leased lines are priced similarly, indicating that a chain of substitution between such circuits might exist. As such, the pricing data available to ComReg suggests there is a chain of substitution for n*64 kilobit/s leased lines of bandwidths up to and including 2 Mb/s, but that there is a break above 2 Mb/s, which indicates that there is limited substitution of 2 Mb/s leased lines for demand for capacity above 34 Mb/s.

4.96 From the Figure 4.3 below it can be seen that there is a clear cut off point at 2 Mb/s, for the cost of acquiring additional capacity. If an end user chooses to increase their bandwidth requirement there is a marginal price increase between products within the lower bandwidth range (up to and including 2 Mb/s). However, the price difference moving from 2 Mb/s is significantly greater.

[45] See Commission Guidelines (2002/C165/03) Article 62 chain substitutability occurs where it can be demonstrated that although products A and C are not directly substitutable, product B is a substitute for both product A and product C and therefore products A and C may be in the same product market since their pricing may be constrained by the substitutability of product B.

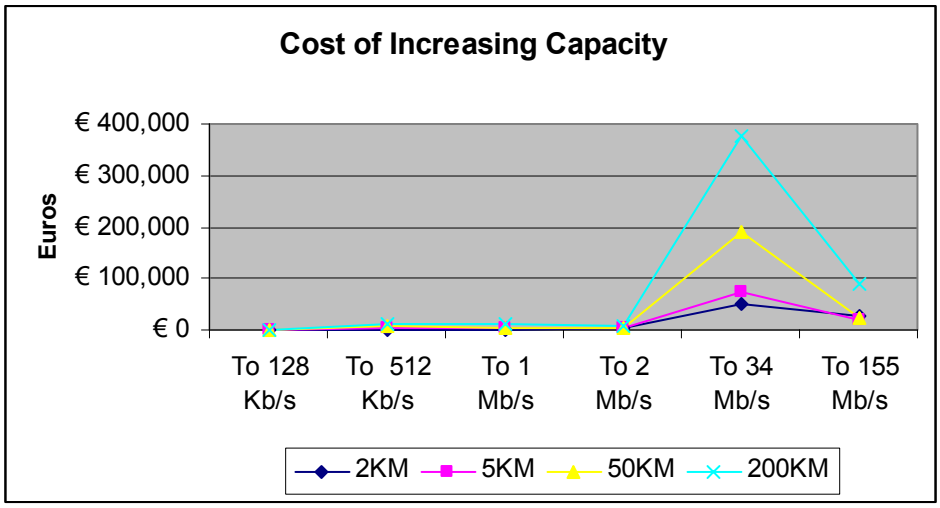



**Figure 4.3: Cost of Increasing Capacity**

**Supply-side substitution**

4.97 ComReg's demand-side analysis demonstrates that there is a break in the chain of substitution for leased lines for those up to and including 2 Mb/s and those above 2 Mb/s capacities. The fundamental question for ComReg's supply-side analysis is, therefore, whether supply-side substitution is such that other operators would respond to an increase in the price offered by a hypothetical monopolist by commencing service provision, thus bridging this break.

4.98 The majority of retail leased lines of capacity up to and including 2 Mb/s are provided over eircom's copper-based technology. There is little use of competing infrastructure to provide leased lines at bandwidths at or below 2 Mb/s. ComReg considers that it is unlikely that a new entrant would incur the cost of constructing such infrastructure to provide low bandwidth leased lines, considering the high sunk costs associated with replicating a copper access network and the economies of scale, scope, and density enjoyed by eircom. This seems the case for all capacities up to and including 2 Mb/s leased lines.

4.99 Leased lines above 2 Mb/s are predominantly provided over fibre networks. The provision of high bandwidth retail leased lines to a new location by a new entrant would require either access to wholesale leased lines at prices permitting re-supply or the construction (including sunk costs such as trenching and ducting) of additional fibre links to end users. This implies that the provision of the wholesale inputs is dependent on the proposed obligations (as outlined in section 11) at rates that allow an appropriate margin to be made. ComReg sees evidence in the market that competing operators are building fibre infrastructure to supply high bandwidth leased lines, although ComReg notes this tends to be concentrated in urban areas.

4.100 As discussed in the market analysis section below, the competitive conditions and means of provision for lower bandwidth (up to and including 2 Mb/s) and higher bandwidth leased lines differ somewhat. Competing operators are more likely to provide retail leased lines up to and including 2 Mb/s by purchasing wholesale products rather than building their own infrastructure. Supply-side substitution implies

that the market is delineated up to and including 2 Mb/s leased lines. While in the market for leased lines above 2 Mb/s, competing operators can provide retail leased lines by purchasing wholesale products, there is a greater incentive for infrastructure based competition which can be delivered in a relatively short timeframe and poses a competitive constraint on a hypothetical monopolist supplier.

4.101 ComReg, therefore, took the preliminary view that there was little supply-side substitutability between higher and lower bandwidth retail leased lines.

***Responses to consultation***

4.102 Of the four submissions, three disagreed with ComReg's definition of a market for leased lines of all bandwidths up to and including 2 Mb/s.

4.103 One respondent accepted ComReg's analysis of the demand-side of these markets, namely that as a result of pricing structures there is a 'break' in the chain of substitution at 2Mb/s. As such on the demand-side there was support that there could be at least two markets (i.e. one for lines up to and including 2Mbits and one for lines above 2 Mb/s).

4.104 However, on the supply-side, the respondent had reservations regarding ComReg's conclusion. They held that as wholesale leased lines were available at all bandwidths an operator could within the timeframe of the review purchase a wholesale product for the provision of retail leased lines. Hence, they argued that there was one market for retail leased lines which encompassed all bandwidths.

4.105 Another respondent highlighted that ComReg's belief that 'circuits up to 2Mb/s are provided over copper lines, while above this capacity was provided using fibre' was not exclusively the case in the Irish marketplace particularly for routes where a customer might have a capacity requirement of more than 2Mb/s. The respondent was of the view that it was operational policy for some operators to replace an installation of 5*2Mb/s, as a matter of routine with a fibre line.

4.106 This was supported by another respondent who suggested that as broadband usage grew; there was evidence of increasing movement from relatively low bandwidths to higher specification services. Furthermore, it was noted that operators (eircom) were now switching customers with 5 x 2Mb or more onto a fibre connection, obviously in order to enable a switch to a 34 Mb service or higher. This trend seemed set to continue on a wider scale. The same logic would also apply for movement on to even higher bandwidth services (e.g. 155 Mb).

4.107 Additionally, it was asserted that the pricing analysis used by ComReg in its analysis was not sufficiently detailed to support the conclusion that there was no substitutability between 2Mb/s and 34Mb/s leased lines. Taking for example a 5 Km circuit requiring 6*2Mb/s capacity, the price to the buyer would be €82,356 (6* €13,726). At 34Mb/s the cost would be €86,749. The buyer could avail of 16* E1 circuits for approximately the same price as 6 individual circuits. This demonstrated demand substitutability between 34Mb/s and 2Mb/s according to current conditions in Ireland.

4.108 One respondent agreed with ComReg's conclusion that there was a defined market for bandwidth up to and including 2Mb/s. However they also contended that there was supply-side substitution at 2 Mb/s with the high bandwidth leased line market, as competitors appeared to be willing to enter the market for leased lines at 2 Mb/s and to

build capacity to meet customer demand. This was the case especially in urban markets where many of the key customers are concentrated.

***ComReg's position***

4.109 In light of one respondent's concerns ComReg has considered whether it is appropriate from the supply-side to define a single market for retail leased lines encompassing all bandwidths. However, as recognised by the same respondent, from the demand-side there is a clear bandwidth split at 2 Mb/s. Additionally, from the supply-side the two markets are differentiated in terms of competitive conditions. From the data collected as part of the Market Review Process it is clear that competing operators are more likely to provide retail leased lines up to and including 2 Mb/s by purchasing wholesale products – this is evident from the large number of low bandwidth wholesale leased lines which are purchased. However OAOs are more likely to build their own infrastructure at higher bandwidths. Wholesale high bandwidth leased lines are not available at a discounted rate, thus there is not much incentive for OAOs to resell. This is logical, as the potential revenue which can be earned at the high bandwidths creates the incentive to build own infrastructure.

4.110 It was argued by one respondent that it was operational policy for some operators to routinely replace an installation of 5*2Mb/s with a fibre line. This view was supported by another respondent, who further argued that some operators migrate customers to fibre in order to prompt customers to switch to a high bandwidth leased line (i.e. 34 Mb/s circuit), ultimately increasing bandwidth usage. ComReg takes the view that multiple lines provided between the same points are considered to be a single circuit. Thus, where an operator provides multiple 2Mb/s circuits between two points this is included in the high bandwidth retail market.

4.111 ComReg also points out that the number of customers demanding multiple low bandwidth leased line as opposed to a single high capacity leased line is low. ComReg maintains that the vast majority of retail leased lines up to and including 2 Mb/s are provided over eircom's copper based technology.

4.112 Additionally it was asserted that the pricing analysis used by ComReg in its analysis was not sufficiently detailed to support the conclusion that there is no substitutability between 2Mb/s and 34Mb/s leased lines. ComReg recognises that in the event of a 5-10% increase in the price for 2 Mb/s circuits a customer using multiple 2 Mb/s circuits may choose to switch to a 34 Mb/s leased line. However, as noted in *The SMP Guidelines*[46] the possibility for consumers to substitute a product or service may however be hindered by considerable switching costs. ComReg holds the view that the cost of Customer Premises Equipment (CPE) for a high bandwidth leased line represents a significant switching cost of moving to a high bandwidth leased line which further restrains demand-side substitution between the markets, indicating two distinct markets.

***Conclusion***

4.113 ComReg concludes that there is a defined market for bandwidth up to and including 2Mb/s. From the demand and supply-side perspective, there is chain substitution between different bandwidths up to and including 2 Mb/s.

[46] para 50

4.114 ComReg has also defined a distinct market for leased lines above 2 Mb/s. From the demand and supply-side perspective, there is chain substitution between different bandwidths above 2 Mb/s.

## Are analogue and digital leased lines in the same retail market?

***Summary of consultation issue***

4.115 ComReg has considered, from the demand-side whether there is evidence to suggest that analogue and digital low bandwidth leased lines (up to and including 2 Mb/s) fall within the same market (i.e. whether digital leased lines impose a competitive constraint on the pricing of analogue leased lines and/ or analogue leased lines constrain the pricing of digital).

*Functional substitutability*

4.116 Analogue leased lines are typically used for the provision of voice and voice band data connections. ComReg does not believe that there is a significant functional difference between lower bandwidth digital (at 64 kb/s) and analogue leased lines, primarily because:

- digital and analogue leased lines can both support voice and data; and
- underlying network facilities used to provide both forms of lower bandwidth leased lines are the same, with only the terminal equipment differing.

4.117 A digital leased line offers more flexibility in terms of the type of traffic that it can carry. For example, a digital leased line guarantees the availability of 64 kb/s for data (and can carry voice if digital phone end user equipment is installed), while an analogue line guarantees voice transmission, but can only carry lower capacity data (using a modem). In this sense, a digital leased line can be characterised as offering a higher level of service.

*Price comparison*

4.118 The data available to ComReg suggests that it would not be profitable for a hypothetical monopolist supplier of either analogue or digital leased lines to raise the price 5 to 10% above the competitive level. In response to such a price rise a sufficient number of end users would switch to digital or analogue circuits respectively. However ComReg notes from market trends that it is unlikely that a subscriber would switch from a digital to an analogue leased line, this is evidenced from subscriber data below.

4.119 ComReg is of the view that the respective cost bases for analogue and digital leased lines do not differ significantly, other than in relation to the costs of the network terminating equipment (which are higher for digital equipment). As such, ComReg has no data suggesting that there would be significant differences in the competitive prices for both services. The small cost differences that exist are not, in ComReg's view, such that they would preclude the provision of digital low bandwidth leased lines in response to a 5 to 10% increase in analogue leased line costs.

*Subscriber development*

4.120 The data available to ComReg indicates that there has been a steady decline in the number of analogue leased lines in use over the last four years. This can be seen in the graph below. Less than 80% of the analogue leased lines that were in use in the first half of 1999, were still in use in the second half of 2003. However, over the same period, the number of lower bandwidth digital leased lines increased three-fold. As such, it is clear that a significant and increasing number of lower bandwidth digital leased lines are in use in Ireland.

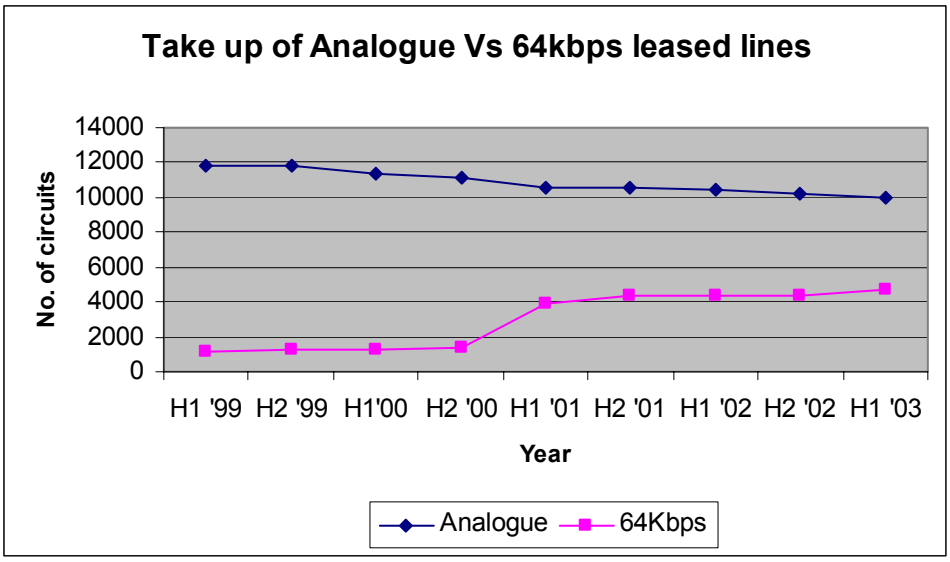



**Figure 4.4: Take up of Analogue Vs 64 kbs leased lines**

4.121 From the supply-side ComReg has considered the extent to which existing suppliers of lower bandwidth analogue and digital leased lines could enter the market and begin to supply digital and analogue services, respectively in response to a 5 to 10% increase by a hypothetical monopolist of analogue or digital leased lines.

4.122 ComReg considers that supply-side substitution between lower bandwidth retail analogue and digital leased lines is dependent on the provision of the necessary wholesale input. This implies that the provision of the wholesale inputs is dependent on the proposed obligations requiring the wholesale provision of such services, and at rates that allow an appropriate margin to be made.

4.123 Lower bandwidth leased lines are normally provided using the same network elements, whether they are analogue or digital. Supply-side substitution relies on potential suppliers being able to acquire sufficient wholesale capacity through the proposed obligations on the wholesale operator. ComReg does not consider that entry by existing suppliers using competing network infrastructure would occur in the short term, nor would the costs of deployment be justifiable in the context of a rational make/ buy decision (given the sunk costs of trenching and ducting that would need to be incurred).

***Responses to consultation question***

4.124 There was consensus among respondents that it was appropriate to include analogue and digital leased lines within the same market.

4.125 It was argued by one respondent that from a supply-side perspective, the costs of delivering analogue and low speed digital leased lines were almost identical. Further, from the demand-side, there was little difference in the functionality offered. It was also observed that, in practice, analogue lines are being replaced by digital. Thus they are in the same market.

***ComReg's Position***

4.126 ComReg takes the view that, on balance, analogue and digital lower bandwidth retail leased lines fall within the same relevant product market. This view is in keeping with *The Relevant Market Recommendation*, which states that it is not necessary to identify specific markets for each category of leased line in the minimum set since it is likely that the market structure will be similar for each subset.

***Conclusion***

4.127 In line with *The Relevant Markets Recommendation*, analogue leased lines fall within the same market as low bandwidth digital leased lines.

## Are international leased lines in the same market for national low and high bandwidth leased lines?

***Summary of consultation issue***

4.128 ComReg has considered the scope of the appropriate retail market for leased lines. In *the Relevant Markets Recommendation* the Commission defined a retail market which includes the minimum set as described in the *Universal Services Directive*. It does not distinguish between national and international leased lines. ComReg, however has defined a market for international leased lines, which has one point (the 'A end') in Ireland and the other (the 'B end') outside Ireland. This differs from a market for national leased lines, which has two points within Ireland. ComReg has considered whether and to what extent international leased lines (of all bandwidths) and national leased lines (of all bandwidths) fall within in the same market.

*Demand-side*

4.129 From the demand-side analysis a consumer of international leased lines will not respond to a small but significant non-transitory price increase by a hypothetical monopolist of international leased lines by switching to a national leased line (e.g. a leased line from Dublin to London is not equivalent to a leased line from Dublin to Galway).

*Supply-side*

4.130 Starting from a narrow market for national leased lines, ComReg has examined whether an operator of international leased lines would respond to a small but significant non-transitory price increase by a hypothetical monopolist supplier of national leased lines. ComReg believes that such a switch in production could not occur, sufficiently promptly or cost effectively in order to constrain the hypothetical monopolist operating in a retail market. An international operator would need to

acquire key network based inputs which are different and additional to those used to provide international leased lines (although they would already be acquiring some of the necessary inputs). Furthermore, an international operator would incur marketing and sales costs on building up a customer base in the national market. Thus it is unlikely that this could occur within a timeframe to constrain a hypothetical monopolist.

4.131 From the outset it is important to note that international leased lines are often provided as part of a broader regional (e.g., pan-European or global contract). This differs from the national market for leased lines, where provision is offered on terms and conditions determined by the dynamics of the national Irish market. The conditions of supply and hence the pricing reflect a separate market place.

***Responses to consultation***

4.132 Three of the four companies that responded to this question did not support ComReg's analysis of the international market as being separate from that for national leased lines.

4.133 One of the three respondents commented that, on the demand-side, ComReg's analysis could be applied to any leased line route i.e. a route from Dublin to Galway would not substitute for Dublin to Shannon, in the same way as a route from Dublin to London would not substitute for a route from Dublin to Paris. Further on the supply-side, ComReg had analysed whether an international operator could substitute into the national market. This would appear to be an analysis of whether the national market is wider than just national and includes international, not whether the international market is a separate market to the national. The more correct approach is to consider whether, if the price of international leased lines rose, national carriers could move into this market.

4.134 However one respondent did agree that there is a separate market for national and international leased lines.

***ComReg's position***

4.135 One respondent noted that ComReg's logic (that from the demand-side there is a discrete market for international leased lines as a national leased line is not a substitute) could be applied to any leased line route. In response ComReg recognises that due to the inherent nature of a point to point capacity, in reality no two leased lines can be considered to be viable demand-side substitutes. However, pragmatically it would be inappropriate to define markets on a route by route basis. Thus ComReg has defined a single national retail market this is discussed in further detail below in the analysis of the relevant geographic markets. However ComReg takes the view that there is a distinct market for international capacity differentiated from national capacity. As noted in *The SMP Guidelines*, the relevant product market comprises all products that are sufficiently interchangeable or substitutable not only in terms of their objective characteristics, by virtue of which that they are particularly suitable for satisfying the constant need of consumers, their prices or their intended use, but also in

terms of conditions of competition and or structure of supply and demand of the market[47].

4.136 ComReg notes that the purchasers of retail international leased lines are typically large multi-national corporates. As such, they are relatively sophisticated and well-informed purchasers. Often international capacity will be provided by a global carrier for connectivity between many international sites. In contrast national lines are purchased by a broad range of business consumers; however the majority of Irish businesses are relatively small with typically less than ten employees, which would indicate a lack of countervailing bargaining power and thus different buying patterns.[48]

4.137 In the initial consultation ComReg considered whether, from the supply-side there was a single market for national and international capacity, or two separate markets. One respondent questioned this logic. However, ComReg points to *The SMP Guidelines* which note that in circumstances where the overall cost of switching production to the product in question is relatively negligible, then the product can be incorporated into the product definition. ComReg concludes that no supply-side substitution exists, as it is unlikely that a supplier of national leased lines would be able to switch its production into the international market promptly and at minimal cost and vice versa. Thus there are two distinct product markets.

***Conclusion***

4.138 ComReg finds that both demand and supply-side factors indicate that there are separate markets for national and international leased lines. International leased lines are the subject of a separate review and notification.[49] .

## The Geographic Market

***The Minimum set of leased lines***

4.139 ComReg has considered the scope of the geographic market within which the conditions of supply and demand for low bandwidth leased lines are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas. In conducting this analysis, ComReg has started from the narrowest possible geographic market (i.e., individual markets for each point to point route), and has considered the factors that suggest that the relevant geographic market should be broader.

*Infrastructure*

4.140 Table 4.4 below shows the network infrastructure presently employed in Ireland. ComReg notes that the majority of retail leased lines of capacity up to and including 2 Mb/s are provided over eircom's copper-based technology. eircom's network is

[47] para 44

[48] Source: SMEs in Europe, 2003. European Commission's Observatory of European SMEs, 2003

[49] ComReg document 04/120. Market Review: International Leased Lines.

national in scope. There is little use of competing infrastructure to provide end to end leased lines at bandwidths below 2 Mb/s and below.

4.141 Operators highlighted in yellow are known as "carriers' carriers", in that they provide dark fibre services to other operators, who then provide retail services to end users. Of these networks, services have recently become available and take up is believed to be limited.

4.142 In contrast, there are a larger number of operators providing services within Dublin. These networks are primarily fibre based and are used to deliver high bandwidth point to point capacity.

4.143 Retail leased line charges in Ireland are currently regulated and can be considered to simulate the competitive price level. Prices are standardised nationally and are based on distance rather than geographic location. eircom is currently required to publish its retail leased line tariffs, making them transparent to other operators. The evidence suggests that the regulated prices form a 'price ceiling' below which competitors set prices. ComReg does not have any evidence to indicate that leased line prices up to and including 2 Mb/s would be differentiated on a route by route basis in the absence of regulation. Additionally, lower bandwidth leased lines can be considered to be a commodity good (the product will often be purchased through necessity); countervailing bargaining power is limited and thus could not be exerted on a route by route basis. ComReg therefore took the preliminary view that the market for leased lines up to and including 2 Mb/s is national in scope.

| | Dublin to Cork | Dublin to Galway | Dublin to Limerick | Other National Routes | Within Dublin | Cities Other than Dublin |
|---|---|---|---|---|---|---|
| C&W | | | | | v | |
| Chorus | | | | v (Linking Ennis, Shannon, Limerick and Cork) | v | |
| Colt | | | | | v | |
| eircom | v | v | v | v | v | v |
| Energis | | | | | v | v |
| Equant | | | | | v | v |
| ESB | v | v | v | v | v | |
| Esat | v | v | v | v | v | v |
| Global Crossing | | | | | v | |
| ntl | | | | v (Linking Dundalk - Dublin) | v | |
| Worldcom | | | | | v | v |
| Govt Funded MANs | | | | | | v |
| Aurora Telecom | v | v | v | v | v | v |

**Table 4.5: Operators' Network by Route**

**Demand-side substitutability**

4.144 ComReg takes the view that end users would be unable to respond to an increase in price on a particular route (between two points) by acquiring leased lines between either two other points or, other than in very limited circumstances, one of the original points and a new point. As such, demand-side factors do not suggest to ComReg that the relevant geographic market is broader than route-specific. However, neither do these factors suggest that the conditions of competition vary on a route-by-route basis.

**Supply-side substitutability**

4.145 On the supply-side, different conclusions are reached, depending on the nature of market entry contemplated. If the analysis looks only at market entry through the construction of competing infrastructure in response to a lasting 5 to 10% price increase by a hypothetical monopolist on a particular route, it is unlikely that existing operators will respond by building alternative infrastructure within the relevant timeframe, given the time that such construction might take and the sunk costs that it is almost certain to entail, other than in particular local areas. The data made available to ComReg suggests that there is a greater likelihood that alternative infrastructure might be constructed by entities that already have a core network in the Dublin area.

4.146 It should be noted however, that on the supply-side, decisions to enter the market through the construction of new facilities are not made on a route-by-route basis. Alternative infrastructure is constructed on the understanding that it is a 'network' in its own right (whether as fibre rings, connectivity between key centres or some other architecture), rather than a single link between two geographic points. Economics of joint-production (scope economies) mean that networks spanning multiple locations rather than two points are much more cost effective.

4.147 However, if market entry in response to such an increase in price at the retail level occurs using wholesale leased lines acquired at the wholesale level from an existing network operator, ComReg considers that such entry is much more likely to occur (subject, of course, to the pricing constraints imposed on provision at the wholesale level through proposed obligations). Clearly, the nature and scope of wholesale obligations imposed at the wholesale level has a significant impact on both the scope of the relevant product and geographic retail markets.

4.148 ComReg also notes the effect of the proposed and existing national pricing regulation which has the effect of restricting eircom's ability to geographically differentiate its pricing.

***Consultation question 11***

**Q. 11. Do you agree with ComReg's conclusion that the market for retail leased lines up to and including 2 Mb/s, is national in scope? Please provide evidence in support of your response.**

***Responses to consultation question 11***

4.149 Three of the four respondents agreed that it was appropriate to define the geographic market for leased lines up to and including 2 Mb/s as national in scope. One respondent went further and stated that, to define the market on a narrower basis would be overly complex and could enable cross subsidisation and anti-competitive behaviour by a potential SMP operator.

4.150 However it was the view of another respondent that there were distinct geographic markets for leased lines in Ireland. It suggested that the level of detail in ComReg's analysis was insufficient. The respondent noted that a number of operators had chosen to roll out infrastructure to major urban areas. This build was clearly based on the belief that customer density was sufficiently high to ensure a return on that investment over a reasonable timeframe. The very existence of this infrastructure changed the market dynamics in such areas. Customers could now choose between different

suppliers. Carriers could buy from other carriers. The availability of customer choice would impact demand and price level offered. The customer benefited from price competition between operators.

4.151 It was noted that apart from inter-city trunks most operators had infrastructure in Dublin and in other cities. Using population as a proxy for business activity and thus for demand for services it was quite clear that the high demand areas were fully competitive. It was contended therefore that there was a distinct inter-city market for leased lines. In addition, given the amount of network rollout in Dublin, the market in Dublin was also competitive.

***ComReg Position***

4.152 One respondent was of the view that there was a distinct inter-city market for leased lines. In addition, given the amount of network rollout in Dublin, it was their view that the market in Dublin was also competitive. ComReg recognises that competition is more developed in some areas of Ireland. However, defining markets solely on this basis is likely to result in multiple markets differentiated by tenuous criteria. Additionally, ComReg notes that nearly 44% of eircom's total traffic is carried in higher demand areas e.g. within Dublin and the main national routes.[50] This tends to indicate that the competitive dynamics are not starkly different despite the presence of some alternative infrastructure. In light of one respondent's comments that the market in Dublin was competitive, ComReg notes that on certain routes or areas within Dublin there is more competition. However it would be inappropriate to state that the whole of Dublin has homogeneous competitive conditions. ComReg further notes that even if multiple geographic markets were defined based on demand, this would be unlikely to affect the SMP designation established in Section 6.

4.153 ComReg is of the view that the imposition of ex-ante obligations and the availability of wholesale products on a national basis could change competitive pressures over time. ComReg has noted the potential negative consequences (for consumers and competition) of removal or imposition of obligations in geographic markets defined for a short-term timeframe. Thus ComReg concludes that a broader approach is more appropriate and that the geographic market for retail leased lines up to and including 2 Mb/s is national in scope.

4.154 In response to ComReg's statement in the initial consultation that prices were homogenous nationally, one respondent noted that leased line prices were standardised nationally due to regulation imposed (on the basis that cost accounting information could not supply sufficient level of detail to prove cost-orientation) rather than market dynamics. It was their view that to test whether prices would vary across different markets would require that operators be given the freedom to price according to demand and market competitiveness. Only then could one judge how an unencumbered operator would behave. ComReg notes that under a transparency obligation, eircom is currently obliged to pre-publish prices for retail leased lines. Additionally prices are standardised nationally for the application of cost accounting and cost orientation obligations. ComReg recognises that only eircom's pricing is as a result of regulatory obligations rather than market dynamics. However evidence

[50] Dublin to Cork, Galway, Limerick (including Shannon)

suggests to ComReg that eircom's regulated prices are in essence a 'price ceiling' below which competitors set prices. Generally prices among operators are standardised nationally and are based on distance rather than geographic location.

4.155 Additionally the functional characteristics of leased lines are homogeneous nationally. From the demand-side, supply of lower bandwidth leased lines can be considered to be commoditised, and countervailing bargaining power is limited and is unlikely to be exerted on a route by route basis.

4.156 On the supply-side ComReg concludes that the majority of leased lines below 2 Mb/s are provided over eircom's cooper based national network. There is little use of OAO infrastructure to provide end to end at bandwidth below 2 Mb/s. As can be seen below, ComReg concludes that that the geographic scope of the relevant wholesale market is national. It is clear that this will have a significant impact on the defining the equivalent retail geographic market, since this largely determines the consistency of the terms on which retail suppliers can acquire wholesale inputs.

4.157 ComReg concludes that the relevant retail geographic market for the minimum set of leased lines is national in scope.

***Geographic Definition - High bandwidth leased lines***

4.158 ComReg has identified that there is a separate market for leased lines above 2 Mb/s. This is not a market as defined by the *Relevant Markets Recommendation* and as noted in the Section 5, no operator has SMP in this market. ComReg has considered the scope of the geographic market within which the conditions of supply and demand for high bandwidth leased lines are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas. ComReg holds that the market is national in scope. In terms of product specification, pricing and functionality high bandwidth leased lines are homogenous. They are marketed and available nationally on the same terms and conditions. ComReg additionally notes that from the supply-side an operator providing leased lines will be subject to the same costs regardless of where the leased line is provided geographically.

4.159 No operator was of the view that the market for leased lines above 2 Mb/s is anything other than Ireland. ComReg therefore concludes that the retail market for high bandwidth leased lines is national in scope.

***Conclusion***

4.160 ComReg concludes that:

- the functional definition of a leased line is *'point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user'*;
- the appropriate boundary split for a leased line is the network terminating point;
- there is a relevant market for national leased lines of bandwidths up to and including 2Mb/s differentiated from the market for higher bandwidth leased lines;
- there are products available which provide functional characteristics of a traditional leased line. However in accordance with the *Relevant Markets Recommendation*

ComReg maintains that it is appropriate to define the market in accordance with the minimum set of leased lines;

- analogue and low bandwidth digital leased lines fall within the same market;
- there is a separate market for leased lines above 2 Mb/s, which includes contended capacity based products;
- there is a distinct market for national leased lines which is separate to international leased lines;
- the retail markets for the minimum set of leased lines and for high bandwidth leased lines are both national in scope.

# 5 Retail Market Analysis – High Bandwidth

5.1 As noted in the *Framework Directive*[51] a NRA is required[52] to determine whether to impose, maintain amend or withdraw obligations on an undertaking, it shall determine on the basis of its market analysis whether the market is effectively competitive. Where a NRA concludes that the market is effectively competitive, it shall not impose or maintain any of the specific regulatory obligations. In cases where regulatory obligations already exist, it shall withdraw such obligations placed on undertakings in the relevant market. An appropriate period of notice shall be given to parties affected by the withdrawal of obligations.

5.2 In the initial consultation[53] ComReg noted in line with *The Relevant Markets Recommendation* that there is a bandwidth split at 2 Mb/s, additionally the market identified for the provision of leased lines above 2 Mb/s was examined to test if the market is effectively competitive. At present this market is regulated. eircom is obliged to pre-publish price changes for retail leased lines above 2 Mb/s at least two months in advance. In the presence of proposed and existing regulation at the wholesale level, ComReg assesses this market to see if it tends towards effective competition.

5.3 In the initial consultation ComReg noted eircom's market share was very low (approximately between 0-5 percent) and falling in terms of both revenue and circuits. A number of respondents had reservations about the reliability and accuracy of data used in the market analysis for leased lines above 2 Mb/s; they believed that eircom's market share was underestimated. In light of this ComReg carried out a subsequent data request. Face to face interviews were also carried out with respondents. Market shares had initially been calculated based solely on private circuits. However in the subsequent data collection ComReg requested data on all point to point capacity provided by traditional leased lines as well as managed services.

5.4 ComReg is of the view that it is appropriate to define the market broadly in accordance with the definition of a retail leased line (as described in Section 4) to include all point to point symmetric capacity regardless of what technology it is being provided over. Taking this approach it was identified that leased lines above 2 Mb/s are generally not provided over private circuits but over other platforms i.e. ATM, IP/VPN. With a wider definition it is evident that the market is greater in terms of number of circuits than was initially perceived. eircom currently provides less than 10% of high bandwidth leased lines over traditional leased lines. It was also clear that eircom's market share in the relevant market is larger than the initial consultation,, holding approximately 36% of the market measured by circuits.

5.5 The absolute size of this market is small in terms of the number of circuits sold approximately 2% of all retail leased lines sold are above 2 Mb/s. The market has developed in the context of retail regulations imposed on eircom under the old

[51] Article 16 subsection 2 & 3

[52] under Articles 16, 17, 18 or 19 of the Universal Service Directive or Articles 7 or 8 of the Access Directive

[53] Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National) 04/59

regulatory framework. In this context, ComReg takes the view that it would be inappropriate to conclude that any operator has SMP in this market. Further, the small number of large purchasers of high capacity leased lines would indicate the potential for countervailing bargaining power in the market.

5.6 ComReg is of the view that barriers to entry for the provision of high bandwidth leased lines above 2Mb/s are relatively lower than for lower bandwidth leased lines. There are considerable economies of scale in capacity. The costs of installing a low bandwidth point to point connection are not dissimilar (but are lower) to the costs of installing a high bandwidth connection. This is because the costs of installing a connection are largely independent of capacity installed. As revenue associated with a higher bandwidth connection is likely to be greater, the prospects for a profitable entry are therefore greater in the higher bandwidth market. In this sense the barriers to entry can be said to be lower. Evidence of lower barriers to entry is indicated in the Ireland by the level of infrastructure competition within this market, which is greater than the market for the minimum set of leased lines.

5.7 ComReg believes that regulation at a wholesale level should be sufficient to safeguard competitive conditions in the retail market for high bandwidth leased lines, by ensuring the availability of essential inputs. However, ComReg intends to monitor the evolution of this market at each review, in order to ensure that the competitive conditions do not change to the detriment of the market, absent regulation.

***Consultation question 12***

**Q. 12. Do you agree with ComReg's conclusion to withdraw obligations from eircom for leased lines above 2 Mb/s? Please provide evidence in support of your response.**

***Response to consultation question 12***

5.8 Of the five respondents four disagreed with the conclusion that the market above 2 Mb/s was sufficiently competitive and that obligations should be removed.

5.9 A number of respondents had reservations in relation to the level of detail in ComReg's analysis and the quality of data used in arriving to its conclusions. It was suggested that the level of analysis carried out by ComReg in relation to this market was not sufficient to warrant the very significant step of lifting an existing SMP designation. These concerns were magnified by reservations about the reliability and accuracy of the data presented in the initial consultation, specifically in relation to leased lines above 2Mb/s on which ComReg had based its decision to lift the current SMP designation on eircom.

5.10 Additionally, it was suggested that ComReg should consider pricing trends. It was noted that eircom has not republished its leased line prices since 2001. If the market was competitive, it was likely that eircom would have sought to reduce its prices. The respondents believed that this evidence that eircom was not being forced to adjust its prices to respond to competitors suggests that eircom continued to enjoy market power in this market.

5.11 ComReg's assertion that barriers to entry in this market were lower, since potential revenues were higher (making entry more economical) was questioned by two respondents. It was argued by both, that the barriers to entry were not lower, as the costs of trenching and fibre deployment remained the highest costs. Opportunity costs were higher where fibre count and older transmission systems were used. On this basis, the respondent believed that the advantages which eircom held in the sub 2Mb/s market (ubiquitous access and backbone network, economies of scale and scope, vertical integration, and barriers to entry) also applied in the above 2Mb/s market. It was their view that all leased lines, including national leased lines under and above 2Mb, should be considered to fall within one market for the purposes of this market analysis exercise.

5.12 One of these two respondents noted that in their view countervailing bargaining power could only really exist if the value of the buyer's business was large in relation to the revenues of the supplier and that customer has a real opportunity to switch. It was clear that the value of any one leased lines contract was not significant for eircom's overall business and that these consumers did not have a wide choice of alternative providers. This was supported by another respondent who noted that merely stating that the customer was 'large' did not prove buyer power per se. They also pointed to ComReg's analysis of buyer power in relation to low bandwidth leased lines, which noted that eircom's ubiquity reduces the bargaining power of customers who wish to purchase full geographic coverage within the Republic. They believed that this was as relevant for customers who wish to purchase higher bandwidth circuits as those purchasing low bandwidth circuits.

5.13 Two respondents did not agree with ComReg's proposal to withdraw obligations on eircom for leased lines above 2Mb/s. It was their view that removing obligations might allow eircom to aggressively target other operators in the leased line market, thereby undermining competition and choice for business consumers. They were concerned that eircom might seek to link the sale of regulated sub 2Mb/s services with unregulated services above 2 Mb/s. They were anxious that, were ComReg's proposals to be implemented, eircom might be in a position to use pricing of a high bandwidth leased line as a form of loss leader to support the sale of regulated products. ComReg needed to provide an assurance that controls would be put in place to ensure that eircom did not use the relaxation of regulation in certain market sectors to unfairly compete in others.

5.14 However another respondent strongly supported ComReg's proposal to withdraw obligations from eircom with respect to leased lines above 2Mb/s and questioned whether it was appropriate to conclude that no other operator had SMP. It was noted that market share per operator should be provided. With respect to regulating the market at the wholesale level, the respondent assumed that the relevant remedies would apply only to those parts of the market where eircom was dominant and that if any other operator were dominant that the same remedies would also apply. Also, the respondent suggested that, ComReg should have defined a separate market for leased lines at 2Mb/s which was demonstrably competitive.

5.15 Finally it was noted that, if retail competition had developed in the context of retail regulation imposed on eircom under the old regulatory framework, then to remove that regulation risked damaging that competition.

***ComReg's Position***

5.16 A number of respondents expressed reservations about the reliability and accuracy of data used in the market analysis for leased lines above 2 Mb/s. In light of these comments ComReg carried out a subsequent data request, which identified that eircom's market share in the relevant market is greater than estimated initially, at approximately 36% (measured by circuits). ComReg also notes that market share alone is not sufficient to establish the possession of dominance. ComReg has considered other criteria, where relevant in its market analysis (e.g. barriers to entry, and countervailing bargaining power).

5.17 ComReg recognises that market share by revenue may be the preferable means of calculating market presence in the leased line market. As indicated by the Commission, the number of leased line termination points does not take account of the different types of leased lines that are available ranging from analogue voice quality to high speed digital leased lines and short and long distances. However ComReg notes from the one-to-one interviews which were carried out with operators as part of the data collection process that there is an inherent difficulty in separating revenue generated from the provision of point to point capacity and the service which is being provided over that capacity. These services are generally provided as a bundled service. Thus any calculation based on revenue would not be reflective of an operator's market share of the relevant product market as it would represent revenue earned from bundled services.

5.18 Additionally, ComReg notes that in the relevant market the range of bandwidths is small (the lower limit of the relevant market is 34 Mb/s) thus the comparison on a circuit by circuit basis within the relevant market is not as significant as may be the case with a comparison between a high bandwidth and an analogue circuit, therefore market shares by circuit are a reasonable proxy for market shares by revenue. ComReg also notes that revenue generated from high bandwidth circuits does not vary significantly by circuit speed for leased lines above 2 Mb/s. ComReg takes the view that if all operators are treated in a uniform way this will diminish the impact on variance in terms of the distance of circuit. In this case ComReg takes the view that market share based on number of circuits is the more robust means of measuring market presence. ComReg also notes that eircom's market share in terms of total capacity is approximately 24% of the total market.

5.19 An undertaking will be subject to the rebuttable presumption that it is in a position of single dominance if it holds in excess of a 50% market share[54]. Even a market share as low as 40% might, given the existence of other relevant factors, be supportive of a finding of single dominance[55]. However the data indicates that eircom's market share in the higher bandwidth (e.g. over 2 Mb/s) leased lines market is below the threshold considered to be indicative of SMP. It would appear that other operators compete more keenly (and successfully) with eircom in the supply of these higher bandwidths.

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[54] See AKZO v. Commission, Case C-62/86, [1991] ECRI-3359; approved in Hilti AG v. Commission, Case T-30/89, [1991] ECR II-1439.

[55] Op. cit., United Brands v. Commission; cf. Commission's Xth Report on Competition Policy (1980), at para. 50. See also SMP Guidelines, at paras. 75-76.

5.20 For reasons of commercial sensitivity ComReg will not name individual operators; however as be seen from Figure 5.1 below there are a number of strong players functioning within the relevant market which would indicate that eircom is not in a position to act independently of its competitors.

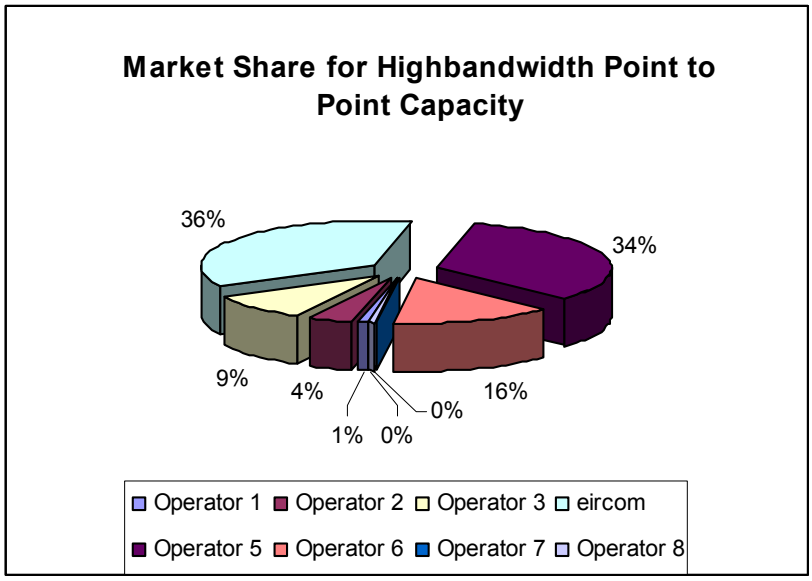


**Figure 5.1: Market share for the high bandwidth point to point market**

5.21 ComReg does not agree with the proposition that potential revenue from a single high bandwidth leased line contract would not be significant in relation to eircom's total leased line revenue. From the information available to ComReg, the average revenue earned by operators per high bandwidth circuit is approximately ten times the amount earned on average per low bandwidth circuit. Coupled with the smaller total number of circuits supplied in the market (approximately 2% of all retail leased lines are above 2 Mb/s), this would tend to indicate the presence of countervailing bargaining power which can be exerted upon suppliers. ComReg is of the view that operators in the high bandwidth leased line market can not act independently of these consumers. In a recent consumer survey, Corporate users were asked how much on average their company spent on telecommunications services per month. 46% of leased line users spent over €12,000, while only 12% of DSL and 18% of ISDN did. ComReg notes that the competitive dynamics of the relevant market would indicate that market share is less relevant as an indicator of market presence. Where the number of circuits is so low and in the presence of countervailing bargaining power, market share could easily shift with the acquisition of a single contract. ComReg notes that there are limited technological barriers to switching, since switching can be technically accomplished without terminating the service. A regulated 'in situ transfer' service allows the leased line end user to switch their service from one provider to another with no physical alteration or break in service.

5.22 ComReg also does not support the view that consumers do not have viable alternatives to eircom. There are a number of strong players currently operating in this market, as evidenced from the market share data.

5.23 ComReg notes that these market shares reflect, in part, the current regulatory environment. eircom is currently required to publish all of its retail leased line prices, including those for higher bandwidth leased lines. As such, eircom's prices for traditional leased lines are almost perfectly transparent to other operators. Given the size of the margin that such other operators can generate they are able to compete with eircom on price. ComReg notes that, without this transparency, other operators might find it more difficult to undercut eircom in the same manner. However, as identified in the second data collection process, most high bandwidth leased lines are not provided over traditional infrastructure. Thus, they have not been regulated.

5.24 One respondent held the view that the market for 2 Mb/s leased lines was also competitive. As established in Section 4 the appropriate bandwidth split is at 2 Mb/s. It is concluded in Section 6 that eircom has SMP in this market.

5.25 ComReg recognises one respondent's comment that eircom has not reduced its prices since 2001 for traditional leased lines. ComReg notes that the majority of high capacity leased lines are provided over alternative technologies for which prices are not published and are generally bespoke. Therefore, an analysis of the price trend of traditional leased lines provides an indication of behaviour in only a limited part of the relevant market. Additionally, ComReg is of the view that high capacity contracts are generally entered into by tender. This is evidenced by a recent survey which identified that 46% of corporations had gone through a tendering process when choosing their leased line service provider.[56]

5.26 In relation to barriers to entry, ComReg agrees that the structural barriers to entry for the provision of leased lines above 2 Mb/s are equal to those for leased lines up to and including 2 Mb/s. However, the potential return is far greater for high capacity circuits. This would indicate that there is more incentive for the supply of high bandwidth leased lines over own infrastructure. This bears true for the Irish market, where there is evidence of a number of operators who have overcome the relevant barriers to entry and of significantly more infrastructure competition. ComReg has also noted that high capacity leased lines are generally used by large businesses or corporations which are typically located in close proximity to each other in business areas which concentrates demand in particular areas. This allows OAOs to target certain high demand routes for network build, which also lowers the associated risk of entry. Additionally, this reduces the competitive advantage eircom enjoys in other markets (e.g. the minimum set of leased lines) from its ubiquitous and widespread network. ComReg has noted that eircom may enjoy advantages such as vertical integration. However, it does not appear that this occurs to any greater extent in this market than another operator or sufficiently to impose a competitive constraint. ComReg is of the firm view that wholesale remedies are more appropriate to address any potential competition problems at the retail level. Thus, ComReg proposes to remove existing retail obligations.

5.27 ComReg recognises that eircom has SMP at the wholesale level and that it is a vertically integrated provider. However, it takes the view that wholesale remedies are sufficient to address any potential problem which could result from this advantage. This is outlined in detail in Section 11.

[56] TNS MRBI Broadband and Data Communications Survey May 2004.

5.28 One respondent argued that the proposal to remove retail obligations on eircom was a 'very significant step'. As noted already, existing obligations apply only to traditional leased lines, which account for a minimal number of total circuits within the market. ComReg is satisfied that sufficient analysis and justification is provided to warrant this decision. ComReg holds that the removal of retail obligations will not diminish the competitiveness of this market and that wholesale obligations are more appropriate to promote further competition. ComReg will however closely monitor the developments of the relevant market to asses the regulatory impact of this decision and to ensure that the conclusions reached are correct.

5.29 As noted earlier, this document is both a response to consultation document and a consultation on the draft decision attached in Appendix B to E. As required by Regulation 20 of the Framework Regulations, the draft measure is now being made accessible to the European Commission and the national regulatory authorities in other member states of the European Community prior to taking a final decision. Details of the consultation procedure are included in section 13 and consultation questions are contained in Appendix A.

***Conclusion***

5.30 ComReg proposes to withdraw all existing regulatory obligations imposed on eircom for retail leased lines above 2 Mb/s. ComReg reserves the right to reassess the competitive conditions in this market in the future if required.

# 6 Retail Market Analysis - The minimum set of leased lines

## Background

6.1 Having firstly identified a relevant market for retail low bandwidth leased lines in Ireland, ComReg is required to conduct an analysis of whether the market is effectively competitive by reference to whether any given undertaking or undertakings is/are deemed to hold SMP in that market. Recital 27 of the *Framework Directive* states that a relevant market will not be effectively competitive "*where there are one or more undertakings with significant market power*". Regulation 25(1) of the *Framework Regulations* states that:

"*A reference in these Regulations ... to an undertaking with significant market power is to an ... undertaking (whether individually or jointly with others) [which] enjoys a position which is equivalent to dominance of that market, that is to say a position of economic strength affording it the power to behave to an appreciable extent, independently of competitors, customers, and, ultimately, consumers*".

6.2 Additionally, Regulation 15 of the *Universal Service Regulations* requires ComReg, where it determines, as a result of a market review, that a relevant market consisting of the provision of part or all of the minimum set of leased lines,[57] is not effectively competitive, to impose obligations regarding such provision and regarding the conditions for such provisions which are set out in Schedule 3 to the *Universal Service Regulations*, on an undertaking designated as having significant power in such relevant market.

6.3 Accordingly, an undertaking may be deemed to have SMP either individually or jointly with other undertakings in a relevant market. In addition, where an undertaking has SMP on a relevant market, it may also be deemed to have SMP on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking.[58]

6.4 ComReg is obliged under the *Framework Regulations* to assess SMP in accordance with the principles of competition law and to take the "utmost account" of the *SMP Guidelines*.[59] The criteria considered to be probative on the issue of SMP are discussed below.

[57] As identified in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive.

[58] Framework Regulations, Regulation 25(3).

[59] Framework Regulation 25(2).

## Market Analysis

### Market shares

6.5 The following tables show eircom's market share developments over a three year period, first by revenue, second by number of circuits[60:]

6.6 The data indicates that eircom's market share in the low bandwidth (i.e. up to and including 2 Mb/s) leased lines market remains high and relatively stable, in terms of volume. In addition, it continues to supply 100% of analogue leased lines in Ireland. eircom's market share by revenue appears to be materially less than its share by volume.

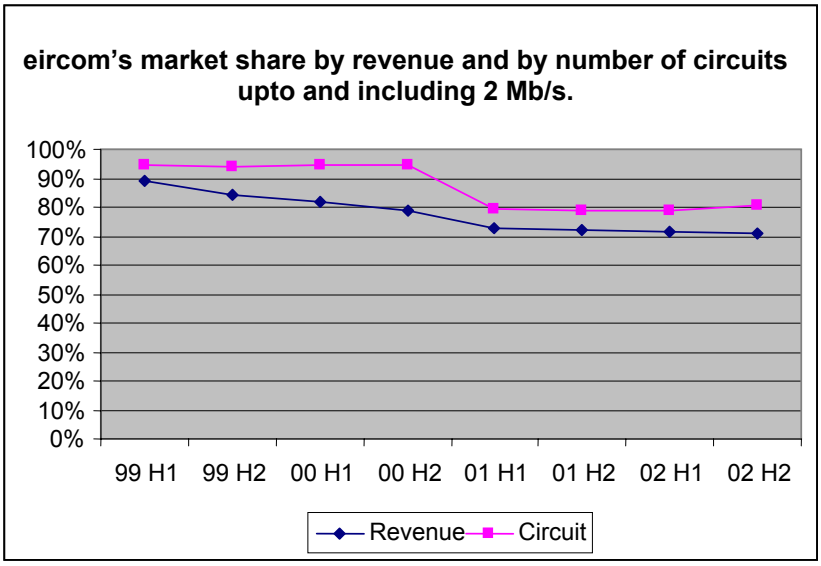


**Figure 6.1: Comparison of eircom's market share calculated by revenue V's No. circuits. (up to and including 2Mb/s)**

6.7 The data available to ComReg suggests that eircom's share in the market for lower bandwidth leased lines might be the result of a number of factors. It appears that eircom's share of circuits provided becomes progressively lower as bandwidths increase. As such, it appears that eircom's competitors are more successful in competing for customers acquiring higher capacity lines which earn higher revenue.

[60] ComReg Quarterly Report Data.

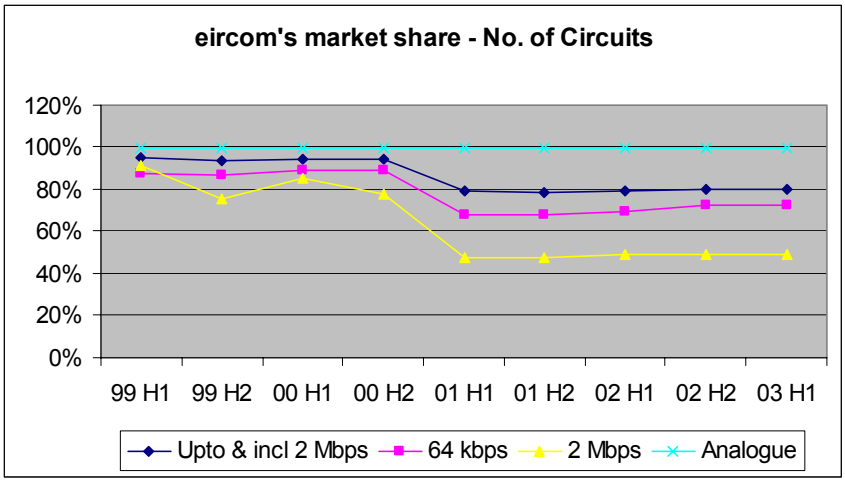


**Figure 6.2: eircom's Market Share - Circuits**[61]

6.8 ComReg's consideration of the market share data suggests that competition in the market, while slowly increasing, has remained relatively weak over the last three years, with eircom being able to regain small amounts of in market share.

6.9 eircom's market share remains well over 50%, whether calculated by revenue or volume. Further, the evidence shows that eircom's market share has not only been well over 50%, but has also remained stable over time. The market analysis strongly suggests that eircom has SMP. This is consistent with competition law principles and *The SMP Guidelines*, which states that market shares are often used as a proxy for market power. Although a high market share alone is not sufficient to establish the possession of significant market power (dominance), it is unlikely that a firm without a significant share of a relevant market would occupy a dominant position.

**Price development**

6.10 ComReg has considered whether the price developments for low bandwidth leased lines since 1999 reflect trends that might indicate that competition in the market is effective. It notes that all such data should be considered in light of the impact of the existing regulatory pricing constraints. However ComReg notes that eircom's prices are regulated and any proposed price change must be notified to ComReg. To this end, ComReg has considered eircom's prices for 64 kbps, 1 Mb/s and 2 Mb/s circuits over distances of 2 kms, 5 kms, 50 kms and 200 kms.

[61] Ibid.

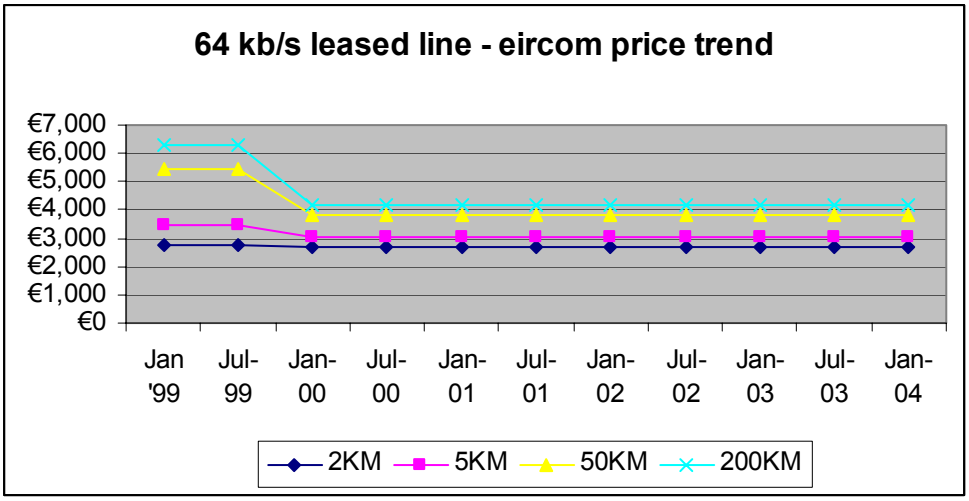


**Figure 6.3: Prices for a 64 kb/s leased line circuit (Euros)**

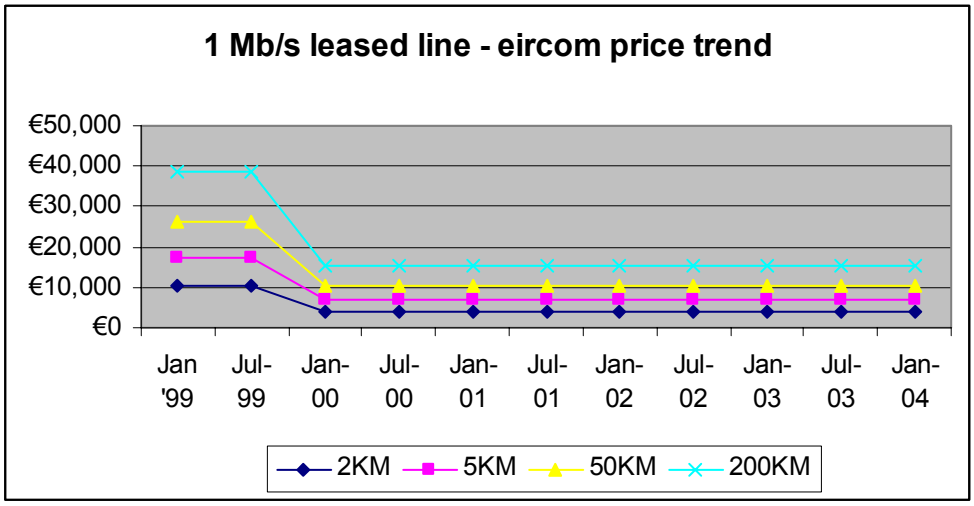


**Figure 6.4: Prices for a 1 Mb/s leased line circuit (Euros)**

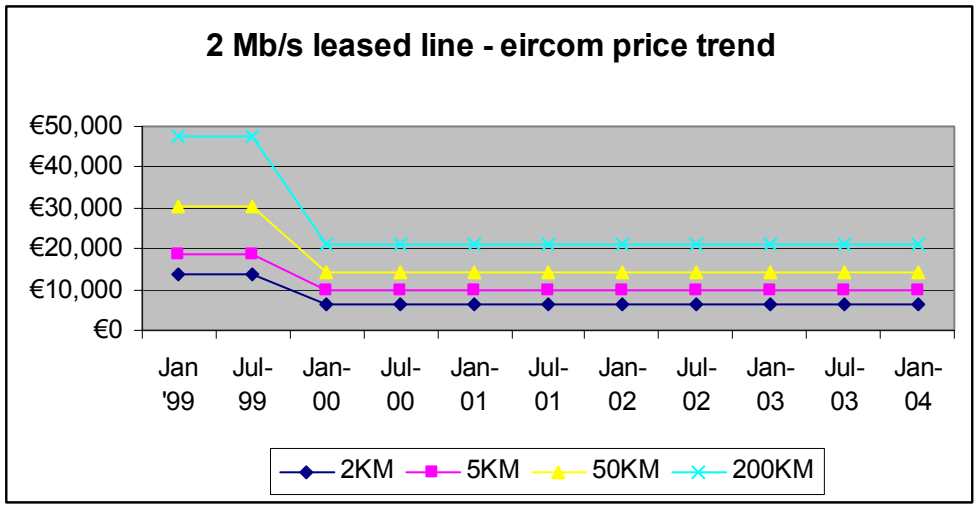


**Figure 6.5: Prices for a 2 Mb/s leased line circuit (Euros)**

6.11 eircom's pricing development does not indicate that it is adjusting its prices to respond to competitors in the market. The data indicates that there have been no pricing adjustments by eircom in response to such market entry.[62] As such, it would appear that little pressure has been exerted on eircom's prices.

**Technological advantages**

6.12 ComReg has no reason to believe that eircom enjoys advantages of a technological nature. The technology used to supply low bandwidth leased lines is mature and eircom does not enjoy an exclusive or preferred relationship with the entities who supply it with its leased line inputs (both service inputs such as trenching construction work and product inputs such as cables).

**Infrastructure advantages**

6.13 The underlying network used to supply retail low bandwidth leased lines is very costly to replicate (see the barriers to entry discussion, below). As noted in the assessment of the appropriate bandwidth split Section 4, nearly all leased lines of lower bandwidth are provided over copper, since this is the most efficient means of delivering leased line services up to and including 2 Mb/s. As noted in the review of the supply-side substitutability of low and high bandwidth leased lines, operators are more likely to enter the higher bandwidth market, since the potential return of investment is greater.

6.14 As illustrated above eircom has over 80% market share in the market for retail leased lines. The remaining 20% is provided by other operators, only one of which has a national backbone network. ComReg is of the view that it is likely that all low bandwidth leased lines are provided to end users through the resale of eircom's wholesale products (eircom currently provides 80% in revenue and approximately 85% in terms of circuits). ComReg is proposing to impose appropriate and proportionate remedies at the wholesale level, to address such barriers. ComReg takes the view that it is more appropriate to deal with such control of infrastructure issues at the wholesale level, rather than at the retail level.

**Economies of scale and scope**

6.15 ComReg takes the view that real advantages resulting from economies of scale and scope accrue to eircom in supplying retail low bandwidth leased lines.

6.16 eircom's backbone network infrastructure is significantly more widespread than its competitors, in terms of coverage and reach. Additionally, eircom's copper local access network connects every building to the trunk and national network. ComReg is of the view that it is not economically feasible for any other operator to replicate eircom's complete network.

6.17 Many advantages enjoyed by eircom's retail arm are derived from the wholesale economies of scale and scope. As such, the remedies that ComReg is proposing to oblige eircom to offer should reduce the effect of the wholesale scale economies enjoyed by eircom.

[62] Ocean started to offer the Concert portfolio including IPLC's in 1998/9

6.18 In response to the industry questionnaires circulated by ComReg as part of the Market Review data collection process, operators other than eircom referred to the economies of scale and scope enjoyed by eircom in relation to local access networks and services and eircom's ability to make use of existing network elements and personnel to further reduce its costs of providing services.

6.19 ComReg notes that there are other benefits of scale and scope economies at the retail level that the market share data indicate would accrue to eircom (e.g., advertising, service and support, administration and management). While these benefits would appear to amount to a smaller share of retail leased line prices than those derived from wholesale scale and scope advantages, ComReg notes that the proposed wholesale remedies will not address these retail-specific scale and scope advantages.

**Network Ubiquity**

6.20 The ubiquity of eircom's network means that, in many places, it is the only provider of leased line services over own infrastructure. The towns passed by OAOs networks do not necessarily have access to OAOs networks as deployment will depend on the extent of local demand and the commercial feasibility of providing a service.

6.21 There are also a number of potential alternative networks such as ESB Telecom and the Government funded MANs. Presently, the fibres on five MANs are lit. The ESB and Aurora networks are both limited to intercity routes with some network infrastructure in Dublin. Consequently, an end user purchasing capacity on any of these networks would have to contract with a second operator for end-to-end services.

6.22 In Ireland, low bandwidth retail leased lines are typically priced by reference to the volume of circuits and their contractual term. The effect of such ubiquity and volume-related pricing is to provide strong incentives for customers to maximise the volume of services benefiting from available discounts and to simplify procurement management by buying all low bandwidth circuits from eircom.

**Vertical integration**

6.23 eircom's vertical integration may generate efficiencies (through the avoidance of transaction costs) that other low bandwidth leased line suppliers would have difficulty replicating. In addition, it also raises the potential for the leverage of upstream market power into downstream (retail) markets, not least because of the difference between average cost (by reference to which wholesale prices are regulated) and marginal costs (actually incurred on an end-to-end basis for additional leased lines). While potential remedies such as the obligation of non-discrimination and the requirement of accounting separation (in addition to cost accounting), can address some of the implications of potential leveraging behaviour (margin squeeze), the underlying structural effect will endure.

**Barriers to entry**

6.24 Many advantages enjoyed by eircom’s retail arm derive from the wholesale economies of scale and scope of its widespread network. ComReg is of the view that it is not economically feasible for any other operator to replicate eircom's network.

6.25 At the wholesale level, there are significant network-related barriers to entry, particularly in relation to low bandwidth terminating segments of leased lines. In

addition, other barriers to entry, including, sales, marketing and advertising accrue to eircom as it has a well established brand and financial strength.

6.26 The scope available to new entrants for using pricing as a competitive strategy is limited. Unless a new entrant builds its own network, they must purchase a wholesale product from an existing operator and resell the product to end users. If its wholesale costs are set by the existing operator from which it acquires capacity (and competes against at the retail level), they are at risk of price squeeze and similar behaviour.

**Potential competition**

6.27 ComReg has considered the potential for new operators to enter the market in the timeframe of this current review.

6.28 ComReg is of the view that it is not economically feasible for any other operator to replicate eircom's local access network. There has been some backbone network build in Ireland in the recent past however this is not significant in relation to the scope of eircom's trunk network. The development is evidenced by comparison of the telecommunications network infrastructure of 2000 and that of 2003 – as can be seen by Figures 6.6a and 6.6b below.

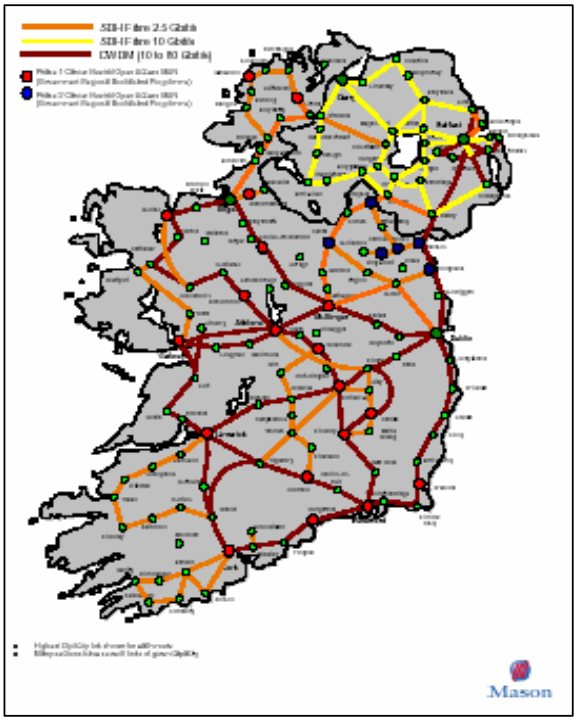


**Figure 6.6a: Backbone Build 2003**

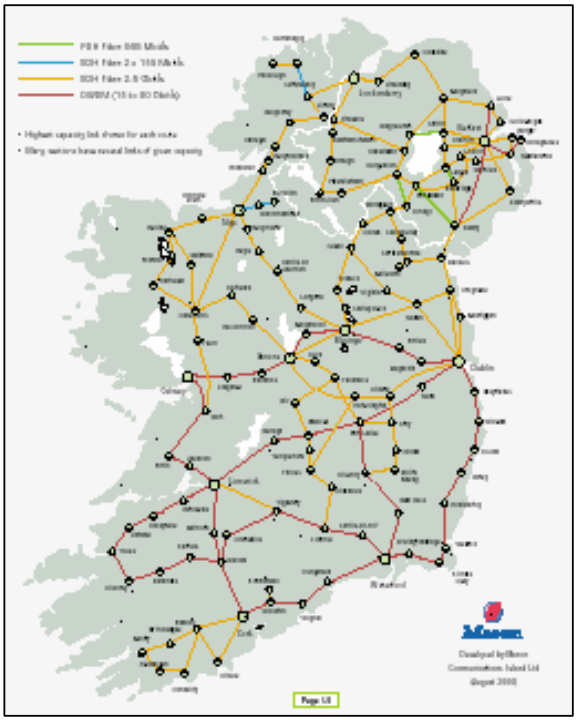


**Figure 6.6b: Backbone Build 2000**

6.29 However, there have been several government funded projects which aim to increase the availability of alternative telecommunications network infrastructure. Details of these projects are also laid out in the market structure at the beginning of this Section.

6.30 In light of its conclusions relating to economies of scale and scope, ubiquity, vertical integration and barriers to entry and expansion, ComReg believes that significant market entry is unlikely for lower bandwidth leased lines.

6.31 However, ComReg does consider that the availability of low priced infrastructure to OAOs through Government funded projects will have an indirect impact on the retail market. The funding is primarily focused on the delivery of broadband services (users at the high end of lower bandwidth leased lines market). Additionally, these services have only recently become available on some of these networks. ComReg takes the view that their impact on the market will not be significant in the timeframe of this review. However, if the competitive dynamics do change in the medium term, ComReg will review the market to analyse any significant developments.

6.32 As indicated by market developments in other Member States, ComReg is of the view that another source of potential competition will arise from the introduction of Symmetric DSL (SDSL) technology. SDSL technology is currently being trialled in Ireland, however it is not publicly available for the provision of symmetric capacity. SDSL is a technology which can be used to provide symmetric retail services which can be either contended or uncontended. SDSL is a technology which can be used by other operators to gain local access to the end user and provide elements of point to point capacity to deliver a services equivalent to traditional leased lines. In this context ComReg considers that if and when SDSL is available, it will have the potential to constrain eircom from acting independently from its competitors. ComReg will monitor its development and impact.

6.33 Additionally ComReg does recognise that there is a movement from traditional leased lines to other managed services products (i.e. point to point IPVPNs) which is having an impact on the market for the minimum set of leased lines. This is clear from operators' responses to the initial consultation, in addition to interviews carried out with operators as part of the second data collection. ComReg is clear that there is demand and supply-side substitution at the margins of the market. However at this point, ComReg does not have sufficient data available to it to conclusively show significant demand-side substitution to justify broadening the market from the minimum set. However ComReg intends to actively monitor the market and to continuously assess the impact of these products. ComReg holds that these products represent a source of potential competition to traditional leased lines.

**Countervailing buyer power**

6.34 eircom is currently obliged to publish its retail leased line prices. This requirement limits the extent to which its customers can exercise buyer power. Negotiation remains possible where there are alternative suppliers (to eircom). However, the heavy reliance of other retail suppliers on eircom's wholesale products, which are priced on a retail-minus basis (other than partial private circuits), broadens the effect of eircom's publication requirement to the remaining entities in the sector.

6.35 In addition, the effect of eircom's ubiquity (and the fragmented nature of coverage of low bandwidth competitors), as noted above, further reduces the bargaining power of customers seeking full geographic coverage. Further, eircom is in a position to offer a range of services and, thus, complete solutions for end users' communication needs. ComReg does not believe that the dynamics of the market are such that customers will acquire significantly greater bargaining power during the timeframe of this review.

**Barriers to switching**

6.36 It appears to ComReg that there are a number of barriers to switching that are of varying importance, and which are quantifiable within certain parameters. There are limited technological barriers to switching, since switching can be technically accomplished without terminating the service. A regulated 'in situ transfer' service allows the leased line end user to switch their service from one provider to another with no physical alteration or break in service.

6.37 However, there are a number of financial factors that might operate as barriers to switching. Leased line contracts often have multi-year terms and penalty clauses for early termination. eircom provides a leased line discount scheme, under which a customer can avail of the price discount facility on committing to a certain rental level and periods (from two to four years). If the leased line customer ceases to avail of the discount facility prior to the expiry of the rental period chosen, the customer is liable to pay to eircom a sum equivalent to 5% of the corresponding minimum rental level, for the unexpired term of the rental period. Additionally, the leased line customer may increase but not decrease the committed rental volume chosen if they want to avail of discounts available. This imposes a significant switching barrier for eircom's customers considering switching to another operator.

6.38 These factors reduce the size of the contestable market at any particular point in time, and can impose high one-off switching costs. This effect is potentially compounded by the higher up-front connection charges (and lower rental charges) that are currently reflected in eircom's pricing structures. Given that these structures are replicated at the wholesale level (as a result of the retail-minus pricing used for wholesale leased lines other than partial private circuits), ComReg considers that there is pressure on other operators to adopt a pricing structure that is not dissimilar.

6.39 Finally, ComReg notes that ubiquity can combine with customer perception and *inertia* to act as a barrier to switching (albeit a barrier that is difficult to quantify). This can be reinforced by any difficulties that customers experience when buying retail leased lines from an entity that does not control the underlying network. In such circumstances, there are, inevitably, potential difficulties relating to control and responsibility in fault-finding.

***Consultation question 13***

**Q. 13. Do you agree with ComReg's conclusion for its market analysis on the market for retail leased lines up to and including 2 Mb/s? Please provide evidence in support of your response.**

***Responses to question 13***

6.40 Of the four respondents who responded to this question, three agreed with ComReg's conclusion.

6.41 One respondent which agreed that eircom is dominant in the market for leased lines up to and including 2Mb/s argued that this was evidenced by eircom's economies of scale and scope. It took the view that there were barriers to entry and expansion, and little

countervailing buyer power. It further noted that this position was not likely to change in the timeframe of the review. In the absence of appropriate wholesale and retail remedies, it was suggested that there was potential for eircom to leverage its upstream wholesale market power into the retail downstream market and place its competitors at a competitive disadvantage through actions like margin squeezing. The proposed wholesale remedies alone will not be sufficient to protect against this.

6.42 It was noted by another respondent, who agreed with ComReg's conclusions, that eircom's market shares were still significantly high and had been stable for many years. They agreed with ComReg's analysis that there was limited buyer power in this market, and particularly that eircom's ubiquity (and the fragmented nature of coverage of low bandwidth competitors) further reduced the bargaining power of customers seeking full geographic coverage. They also argued that barriers to switching were an important issue, particularly the discount packages offered by eircom, since these reduced competitive pressure from alternative operators.

6.43 However, another respondent stated that, given the extent of OAO rollout both between and within major urban centres, it considered OAOs' market shares provided by ComReg to be lower than expected for revenues and volumes. It argued that, with the availability of alternative infrastructure (by Irish Government, ESB and EsatBT), the access obligations imposed on eircom and eircom's partial private circuit obligation, this market was competitive in key geographic areas. It suggested that a sufficiently robust geographic analysis of the revenues and volumes would indicate that a finding of single market dominance was inappropriate.

6.44 The same respondent disagreed with ComReg's argument that eircom's leased lines price trends in recent years indicated a lack of response to competition. They believed that this indicated a decrease in real terms (when inflation was taken in to account). In past pricing submissions, eircom had sought price increases – particularly, for low speed and analogue leased lines which had been refused by ComReg. It was suggested that OAOs have not been able to compete at this end of the market because of the low prices charged. The respondent claimed that eircom's leased line charges were amongst the lowest in Europe, currently ranking 4th among 35 countries.

6.45 It was submitted by one respondent that the impact of economies of scale and scope, which ComReg asserted that eircom had, on the competitiveness of a market was a moot point. While eircom had an extensive access network in Ireland, any suggestion that possession of copper access facilities in remote areas allowed eircom to compete for urban leased line business was clearly neither appropriate nor logical.

6.46 The same respondent questioned whether eircom retail derived any advantage from wholesale economies of scale. It questioned the logic of trying to reduce any such economies of scale from a productive efficiency perspective. The same respondent argued that eircom's ubiquity was only relevant where the market was ubiquitous which not the case for the Irish retail leased lines market. No further detail was provided in support of this statement. The respondent did not agree with ComReg's conclusion on potential competition and it was held that that the impact of Government funded projects would be significant in the timeframe of the review. For example, specifically with respect to the Government MANs project, a Management Service Entity (MSE) had been appointed to develop services/offerings/prices in the immediate future. The respondent took the view that the Government was re-entering

the market as a substantial network provider in all urban areas outside Dublin; duplicating eircom's fibre network in 17 urban areas (extending to a further 80 urban areas). The existing and planned fibre rings therefore competed with eircom's wholesale offerings to OAOs, who competed in the downstream retail market. Given the scale of Government intervention and the fact that the MANs fibre rings would be linked to other Government funded initiatives (such as the ESB and Bord Gais networks), it argued that this represented the immediate implementation of a new national network. As such, it concluded that this requires full inclusion in this market review by ComReg, and that the entity providing this service should be subject to the same degree of regulatory scrutiny as other operators.

***ComReg Position***

6.47 One respondent expected eircom's market share to be lower than that presented in the initial consultation. In response to respondents' comments on the quality of its market share data, ComReg carried out an additional data collection, the results of which reaffirmed eircom's high market share. In the market up to and including 2 Mb/s, eircom was found to have a market share of approximately 88%, measured by volume of circuits. The second round data collection showed that eircom provided 100% of analogue circuits, over 80% of leased lines up to and including 2 Mb/s and over 55% of leased lines at 2 Mb/s. eircom's market share is higher for the lower capacity circuits, ComReg notes that despite the availability of alternative infrastructure eircom has a high and stable market share which further emphasises its market power. As noted in Section 4, ComReg has defined the market as national. In this market, eircom has a market share well in excess of 50%.

6.48 In relation to ComReg's conclusion that eircom's static price was indicative of market power, one respondent was of the view that this analysis was incorrect and that ComReg's rejection of a recent request for a price increase to account for inflation was contrary to the promotion of competition. It was suggested by the respondent that OAOs had not entered the market because of the low prices charged. ComReg does not agree, and holds that operators are less likely to enter these markets as demand for analogue and low capacity leased lines appears to be falling. Additionally, eircom's dominance in the market particularly for low bandwidth and analogue leased lines disincentivises new market entry.

6.49 In relation to the comment that eircom had the lowest leased line charges in Europe, ComReg is not in a position to comment. No source for this statement was provided. As such, the data speed or platform to which this calculation relates is unclear. However, as can be seen by the graph below, the average price among European member states for a 64 kb/s and 2 Mb/s circuit reduced significantly between 1998 and 2002[63]. A similar decrease in price is not evident in Ireland. Nevertheless ComReg notes that there is an inherent difficulty in comparing leased line tariffs among different member states. Due to different tariff structures and variance in definitions of local and main link charges, ComReg is minded not to place too much emphasis on benchmarking tariffs between countries.

[63] DG Infso Telecoms Price Development – Teligen Ltd 2001

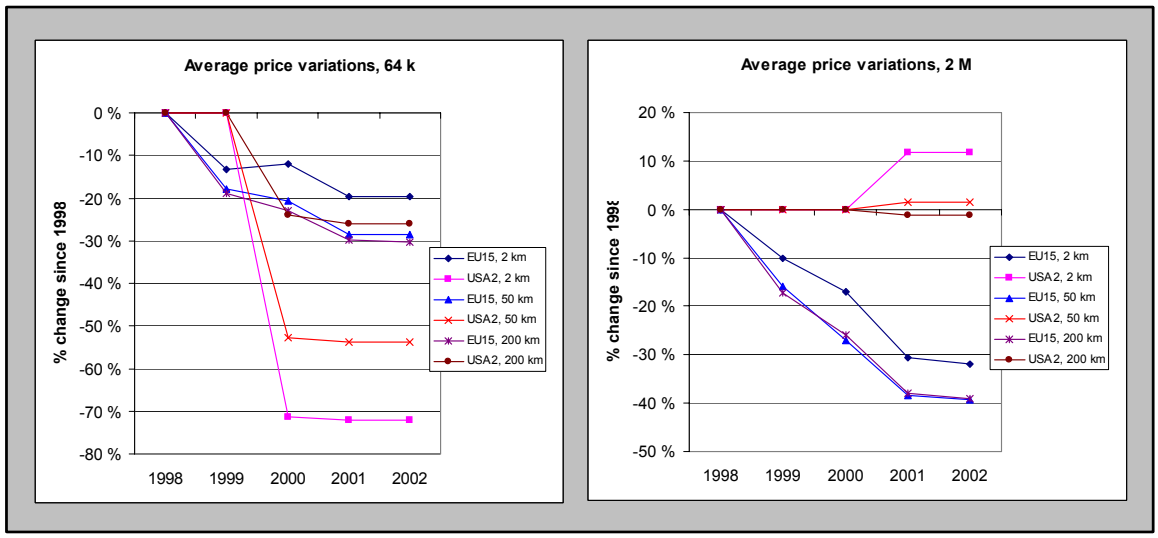


**Figure: 6.7 Average price change for a 64 kbps and 2 Mb/s national leased lines in USA and the EU countries.**

6.50 ComReg does not agree that eircom does not enjoy any advantage over its competitors due to economies of scale. In fact, ComReg notes that there are significant sunk costs associated with market entry using own infrastructure, particularly at low bandwidths. Sunk costs are costs which are required to enter a market, but which cannot be recovered on exit. A new entrant must consider whether there is the potential to cover sunk costs as well as costs of service provision, whereas eircom has already covered its sunk costs. Sunk costs inevitably create an asymmetry between existing suppliers and potential new entrants which is likely to deter market entry. As noted in the initial consultation, eircom's backbone network infrastructure is significantly more widespread than its competitors' in terms of coverage and reach. ComReg concludes that it is not economically feasible for any other operator to replicate the incumbent's complete network. Therefore it must be concluded that eircom enjoys economies of scale which allow it to leverage market power. Additionally. ComReg concludes that eircom enjoys a first mover advantage. By moving first and incurring sunk costs eircom does not face decisions about recovering those costs, whereas a prospective entrant does.

6.51 One respondent submitted that operators which had international parent companies enjoyed greater economies of scale than eircom. However, ComReg notes that the relevant geographic market for the provision of retail leased lines is Ireland. From the information available to ComReg, it is difficult to see what, if any, benefit a subsidiary operator can enjoy from being part of a wider organisation group. The respondent did not provide any detail regarding the potential competitive advantage.

6.52 The same respondent questioned ComReg's logic in trying to reduce economies of scale. It is not ComReg's aim to reduce operator's productive efficiencies from economies of scale. However, as noted in *The SMP Guidelines* economies of scale and scope are two criteria which can be used to measure the ability of an undertaking to behave independently. Furthermore, it was noted that barriers to entry exist where entry into the market requires large investment. As noted:

*Entry barriers are exacerbated by further economies of scope and density which generally characterise such [electronic communications] networks. Thus, a large network is always likely to have lower costs than a smaller one, with the result that an entrant in order to take a large share of the market and be able to compete would have to price below the incumbent, making it thus difficult to recover sunk costs*[64].

6.53 ComReg notes that, additionally, there are benefits at the retail level accruing from advertising service and support, administration and management.

6.54 One respondent submitted that eircom did not enjoy any advantage from its ubiquitous network as the market itself was not ubiquitous. ComReg strongly contests this as it is clear that demand exists for retail leased lines throughout Ireland for a standard product. eircom's ubiquitous and widespread network allows for the provision of services throughout Ireland, often providing services without competition.

6.55 As noted previously, ComReg agrees that the availability of alternative infrastructure through Government funded projects will have a positive impact on the competitive dynamics of the retail market. It notes that a small number of circuits have been provided over this infrastructure to date. As noted by the respondent, the existing and planned fibre rings will compete with eircom's wholesale offering and will compete in the retail market in the future. However, the mere presence of network infrastructure does not equate to effective competition. The take up of services on those networks, which is currently minimal, is the crucial factor at the retail level.

6.56 ComReg notes that the MANs do not currently provide the local access element of leased line circuit. As such, it expects that their impact will be primarily on a part of the wholesale trunk segment market (but not on the inter-city market). This, in turn, will have an indirect impact on the retail market. It is likely, however, that retail providers will continue to be dependent on eircom for the terminating segments. ComReg is also of the view that the impact of the MANs will be more significant in the higher capacity retail leased line market.

6.57 Overall, ComReg is of the view that the market power which eircom currently enjoys will not be undermined sufficiently within the timeframe of the review to reduce eircom's ability to act independently of its competitors.

***Conclusion***

6.58 ComReg considers that the market analysis set out above indicates clearly that eircom possesses SMP in the relevant market for retail symmetric capacity up to and including 2 Mb/s.

6.59 In addition, ComReg considers that eircom is likely to continue to enjoy such a position during the timeframe of this review. It believes that the wholesale remedies proposed in section 11 are unlikely to have the effect of reducing eircom's market power sufficiently during that timeframe, in light of eircom's current market share, the significant impact of economies of scale and scope and vertical integration, the

[64] Footnote 85 – The SMP Guidelines refers to Hoffmann-La Roche v Commission, op. cit., at paragraph 48

existence of barriers to switching, the absence of material countervailing buyer power and the barriers to entry and expansion.

# 7 Designation Of Undertakings With Significant Market Power in the Market for the Minimum Set of Leased Lines.

7.1 Having regard to the sections above, particularly Sections 4, 5 and 6, ComReg is of the view that, in accordance with the *Framework Regulations:*

*eircom Ltd should be designated as having SMP on the market for the minimum set of leased for retail leased lines up to and including 2 Mb/s*

7.2 Upon completion of the market analysis of the market for the minimum set of leased lines and the determination to impose specific obligations on eircom Ltd as required by Regulation 27(4) of the Framework Regulations, those obligations carried forward by Regulation 8 of the Access Regulations and Regulation 13 of the Universal Service Regulations will cease to apply to leased lines over 2 Mb/s

7.3 A reference in this section to any given undertaking shall be taken to include any and all undertakings which are affiliated with, or controlled by, the undertaking in question.

# 8 Wholesale Market Definition – Terminating and Trunk Segments

## Introduction

8.1 ComReg has sought to identify the scope of the appropriate wholesale markets in Ireland for leased lines, used for the direct or indirect supply of services to end users. It notes, from the outset, that as stated in the *Relevant Markets Recommendation* there is an inherent difficulty in differentiating between markets for retail and wholesale leased lines. This difficulty arises from the functional similarities between the levels of trade, and the difficulty in differentiating between purchases made by other operators, on the one hand, and purchases made by large end users for own provision of electronic communications services, on the other.

8.2 Despite these difficulties, ComReg considers that the definition of the relevant retail market (or markets) is likely to be relevant to market definition in related upstream (or wholesale) markets. ComReg has defined the relevant retail market(s), absent of regulation, prior to defining the relevant wholesale market(s)[65]. It takes account of the identified retail markets in this chapter.

## Market Definition

8.3 There are two wholesale products as defined by *The Relevant Markets Recommendation*: terminating and trunk segments. An ECN/ECS provider can purchase an end to end leased line from another operator where it does not have its own network available for providing the service to a customer. Alternatively, if it is able to provide the leased line partly using its own network, it has the option of purchasing the remaining part from an operator i.e. a partial private circuit. Wholesale leased lines can be used for simple resale of retail leased lines or used as inputs to other retail services.

8.4 The market(s) for retail leased lines provides only part of the wholesale demand for leased lines. Other retail services, such as mobile telephony, are also contributors to wholesale demand for leased line services. ComReg has not defined these other retail markets in this review (they have been reviewed by ComReg in a number of their reviews), but is mindful of their influence.

8.5 In its analysis of the wholesale markets, the following issues are considered:

- Are wholesale leased lines (WLL) and partial private circuits (PPCs) substitutable products?
- Are trunk and terminating segments in the same relevant market?
- Where is the appropriate boundary split between trunk and terminating segments?
- Are there different terminating segment markets for different bandwidths?
- Are there different trunk segment markets for different bandwidths?
- Is there a national geographic market for terminating segments?

[65] Where feasible it is more appropriate to address retail market failures identified by imposing regulation at a wholesale level. ComReg will consider the effect of obligations it proposes to impose on SMP-designated operators at the wholesale level when considering retail market definition.

- Is there a national geographic market for trunk segments?

## Are PPCs and leased lines substitute products?

***Summary of consultation issue***

8.6 As a starting point, ComReg assesses whether PPC and wholesale leased lines are substitutable products.

8.7 A Partial Private Circuit (PPC) can be used to provide symmetric capacity between two points, one of which is the Point of Handover (PoH) to an OAO, the other which is an end user NTP. Typically, a PPC includes a terminating segment and a trunk segment with the handover of the circuit to an operator at the PoH. The end user link (EUL), which is the circuit from the eircom PPC serving exchange to the end user via the eircom exchange serving that end user, may not be directly equivalent to the terminating segment of a leased lines as it may include some element of the trunk segment. PPCs are a wholesale product allowing an operator which has invested in infrastructure to provide retail leased lines or circuits for own use cost effectively. Rather than leasing an end-to-end leased line from the incumbent, an operator can lease part of the circuit and use its own infrastructure for the remainder, see Figure 8.1.

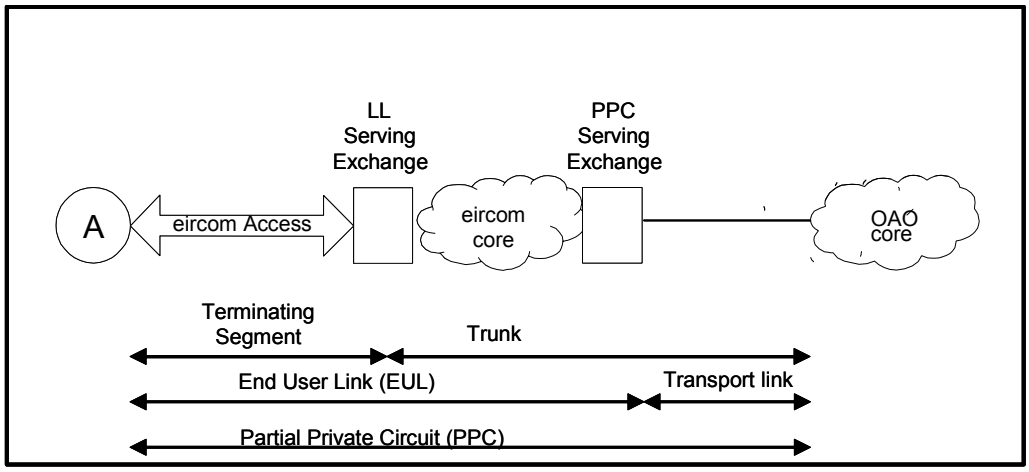


**Figure 8.1 PPC in trunk and terminating segment market**

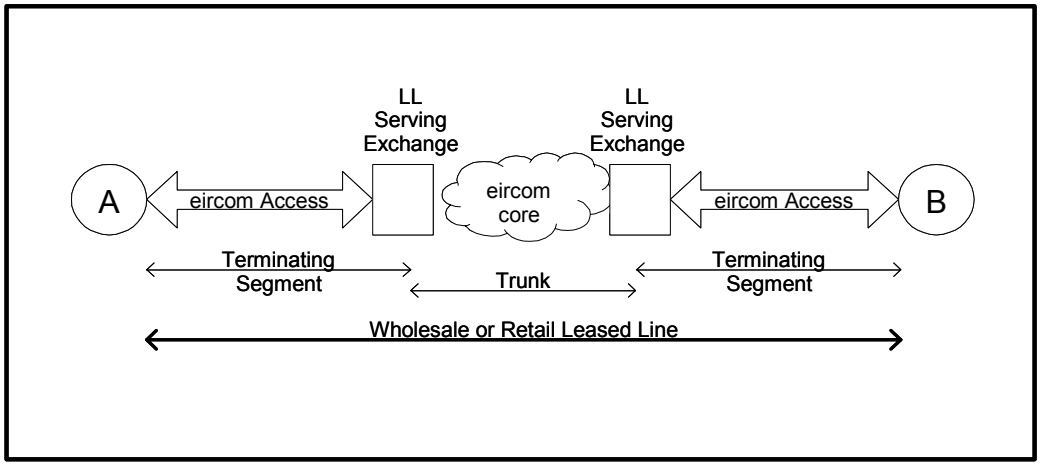


**Figure 8.2 Trunk and terminating segments of a leased line**

8.8 Both PPCs and leased lines are functional equivalents. Figure 8.1, above shows the construction of a partial private circuit (PPC). It assumes that there is a split of trunk and terminating segments at the customer's leased line service exchange.

**Demand-side**

8.9 PPCs and wholesale leased lines provide equivalent functionality to an OAO i.e. both provide symmetric point to point capacity and as can be seen from the diagrams above both products utilise most of the same network elements. However the way in which the capacity is delivered to the OAO is significantly different. A leased line is delivered on an end to end basis for example a 2 Mb/s circuit is delivered at 2 Mb/s at both the A end and the B end (where the A end is an end user site and the B end is either another end user site or an OAO point of presence (POP)). A PPC by contrast is a part circuit for example a 2 Mb/s circuit is delivered at the A end and at 2 Mb/s but at the other end is delivered to the OAO POP over a large capacity transport link (this can be either over ISH or CSH).

8.10 PPCs allow the OAO to avail of network efficiencies by aggregating numerous circuits (either PPCs or voice interconnect circuits) on a single transport link. PPCs are most efficient for circuits that are close to an OAO's own network and when there is potential to aggregate a number of circuits onto a single transport link.

8.11 Since the introduction of PPCs, many OAOs been reviewed the wholesale leased lines that they purchase and are evaluating which circuits it would be economically efficient to substitute to PPCs. This is a complex decision based not only on the relative prices of the two products, but also on the characteristics of the circuits and the characteristics of the OAOs network. Figure 8.3 below provides evidence of the take up of PPCs.

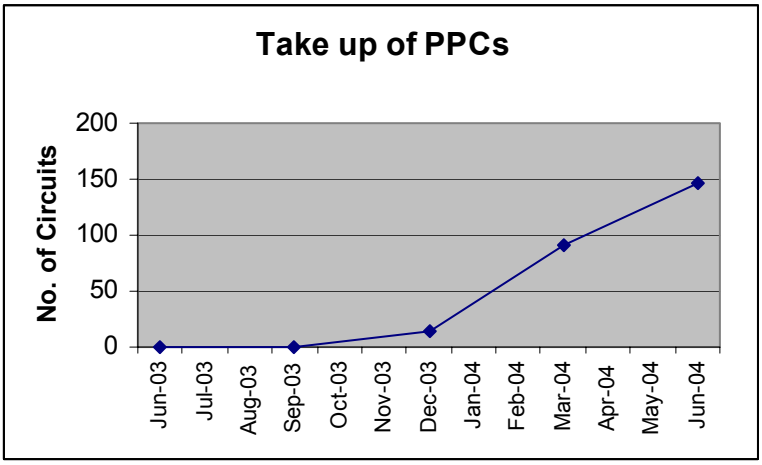


**Figure 8.3 – Take up of Partial Private Circuits**

8.12 As a result of such an evaluation, it is likely that an OAO will continue to avail of both PPC and wholesale leased lines. The precise mix of these two products will depend, at least in part, on the relative prices. Therefore, in the event of a lasting price increase by a hypothetical monopolist, these two products will act as substitutes for each other. For this reason, ComReg believes that, from the demand-side, PPCs and wholesale leased lines are in a single market.

**Supply-side**

8.13 ComReg notes that, in Ireland, eircom is both the primary provider of wholesale leased lines and is the only supplier of PPCs. There is an inherent difficulty in analysing whether a leased line operator would enter the market for PPCs in the event of a lasting 5-10% price increase by a hypothetical monopolist supplier of PPCs, as PPCs are a regulated product.

8.14 However, ComReg is of the view that, from the supply-side, an operator of leased lines would technically be able to supply PPCs (in a timely manner), in response to a 5-10% price increase by a hypothetical monopolist supplier of PPCs. Additionally, a provider of PPCs would technically be able to switch their production at relatively short notice in response to a constant price increase by a hypothetical monopolist, to provide leased lines. Essentially, the same technology is used for the provision of leased line and PPC services. From this analysis ComReg is of the view that, from the supply-side, PPCs and leased lines are in the same market.

**Conclusion**

8.15 ComReg is of the view that, from the demand-side and the supply-side, PPCs and wholesale leased lines are in the same market.

***Views of respondents***

8.16 Of four respondents, three did not believe that PPCs and wholesale leased lines were direct substitutes. One respondent noted that the products differed in their construction, as a PPC only provided end -to-end connectivity by using a portion of an OAOs own network. However, it agreed that PPCs exerted a pricing constraint on leased lines. On the supply-side, a supplier of PPCs could switch easily to leased lines, supporting the conclusion that they are in the same market.

8.17 However, another respondent did not agree that, on the demand-side, PPCs and wholesale leased lines provided 'equivalent' functionality to an alternative operator. It noted that there would be many instances where alternative operators did not have the network capability to choose the PPC option. It took the view that, in some areas (*i.e.* outside of Dublin), PPCs would not be an alternative for non-eircom operators for many years. It argued that PPCs and wholesale leased lines should be defined as separate markets – with PPCs as inputs to wholesale leased lines.

8.18 The same respondent felt that, on the supply-side, given that eircom was the dominant supplier of both types of service, it would appear illogical to presume that in the case in which eircom raised the price of PPCs by 5-10%, it would then increase supply of PPCs by switching from production of wholesale leased lines to PPCs (and vice versa). It was the respondent's view that this would be self defeating and irrational behaviour. The respondent believed that this analysis is flawed and that wholesale leased lines and PPCs fall within separate markets.

8.19 Another respondent disagreed with ComReg's position that both PPCs and leased lines fell within the functional definition of a leased line. They argued that PPCs were never connected between network terminating points. Instead, one end was connected at a network terminating point and the other at an OAO point of interconnection.

8.20 It was noted by one respondent that ComReg's explanation of a PPC excluded the transport link. The transport link was the connection from the OAO to the interconnect exchange and represented the connection from the terminating segment to the trunk segment. They argued that, in effect, the transport link was the trunk interconnection product allowing the terminating segment to be connected to the trunk segment. There must be an element of trunk segment incorporated into any leased line delivered using PPCs. This may have been, at the very least, the multiplex equipment necessary to derive the EUL[66] from the transport link and delivered to the corresponding transport link. The segment from the PPC serving exchange to the end user was called the terminating segment and comprised junction and local access copper components in the case of low bandwidth circuits. The junction element provided the link between the main transmission node and the customer serving exchange. The respondent stated that Figure 8.1[67] was incorrect, as it omits the transport link, and suggested an alternative diagram – see appendix J.

8.21 The same respondent argued that PPCs were the only true wholesale service that corresponded to the *Relevant Market Recommendation'* trunk and terminating segments concepts. They stated that eircom did not offer a wholesale leased line product. It offered an end–to-end to end product called a 'leased line' to both retail and wholesale customers. However, the respondent submitted that the product was exactly the same for both, with the exception of a price discount for OAOs. OAOs had chosen to purchase this product and to act as a reseller. The respondent stated that there was no regulatory basis on which to mandate the provision of wholesale leased lines. The respondent stressed that PPCs and wholesale leased lines were not substitutes at either the technical or functional level and provided a diagram to support this view, see Appendix J.

[66] End User Links

[67] Figure 5.1 of the initial consultation ComReg Document 04/59.

8.22 One respondent noted that PPC elements could be defined as the underlying building blocks of leased line offerings. If an operator was capable of competitively providing a PPC then it would also be capable of competitively providing wholesale leased lines. However, the provision of competitive wholesale leased lines might have been dependent on the use of "bought in PPC" elements to achieve full geographic coverage. In this case, a lasting price increase by a monopolist PPC supplier could not be responded to by a competitor.

***ComReg's Position***

8.23 One respondent argued that PPCs were the only true wholesale service that corresponded to the *Relevant Market Recommendation's* concept of trunk and terminating segments, arguing that eircom also offered an end to end product called leased lines to both retail and wholesale customers. It took the view that leased lines sold to wholesale operators were a retail product.

8.24 *The Relevant Markets Recommendation* recognises that there are distinct leased line markets for wholesale and retail products, stating that '*dedicated capacity or leased lines may be required by end users to construct networks or link locations or be required by undertakings that in turn provide services to end users. Therefore it is possible to define retail and wholesale markets which are broadly similar*'.

8.25 Currently, in Ireland, terminating and trunk segments are typically sold as an end-to-end connection (*i.e.* a leased line). Thus, in order to understand the demand and supply-side characteristics of trunk and terminating segments, it is necessary to analyse the characteristics of leased lines. ComReg considers that trunk and terminating segments are in separate markets, as outlined below. ComReg deems that a wholesale leased line is differentiated from a retail product on the basis that it is sold to an authorised operator of an ECN/ECS. This is supported by *The SMP Guidelines* and the *Access Notice*, which state that there are two main types of relevant markets to consider, that entailing the provision of services or facilities to end users (retail markets) and that entailing the provision of access to facilities necessary to operators (wholesale markets)[68]. ComReg also notes that eircom itself refers to 'wholesale leased lines' on the eircom wholesale website[69]. The Carrier Services leased line documentation, includes the 'Carrier Services Operations and Maintenance Manual', the 'Carrier Services Service Level Agreement' (SLA) and appendices, and the wholesale leased line 'Terms and Conditions'.

8.26 One respondent does not consider that PPCs and wholesale leased lines are substitutes from either the demand or supply-side. From the demand-side, this reflects the lack of alternative infrastructure to facilitate the take up of PPCs. The respondent argued that, in areas outside Dublin, OAOs do not have the network capability to acquire PPCs. ComReg is of the view that this issue is more pertinent to the analysis of the relevant geographic market and dealt with in further detail below. As noted in *The SMP Guidelines* '*NRAs should commence the exercise of defining the relevant product or services market by grouping together products or services that are used by consumers for the same purpose*'[70]. In addition, ComReg must be cognisant of the functionality of the relevant products, ComReg notes that when combined with own infrastructure

[68] OJ C 265, 22.8.1998, p.2.
[69] http://www.eircomwholesale.ie/regulatory/reg_details.asp?id=48
[70] para 44

PPCs do provide equivalent functionality to a wholesale leased line. Additionally ComReg is strongly of the view that PPCs are used for the same end use by wholesale operators as wholesale leased lines.

8.27 The respondent also argued that PPCs and wholesale leased lines are not substitutes from the supply-side, because there is a single 'dominant supplier of both services'. ComReg agrees with this statement, as eircom is the predominant provider of wholesale leased lines and the sole provider of PPCs. However, it notes that the appropriate question to pose when applying the SSNIP test to define the boundary of a product market is whether, in the event that a *hypothetical* monopolist raised its price of wholesale leased lines, is it probable that a provider of PPCs (eircom) could enter the market to provide wholesale leased lines, thus constraining the hypothetical monopolist in pricing of wholesale leased lines. ComReg holds that an operator of leased line would technically be able to supply PPCs and *vice versa*. Essentially, the provision of both services relies on the same technology.

8.28 One respondent noted that PPC elements could be defined as the underlying building blocks of leased line offerings. It argued that wholesale leased lines and PPCs were in different markets, as the provision of competitive wholesale leased lines may be dependent on the use of a PPC. ComReg does not agree with this logic and notes that PPCs are used as building blocks for *retail* rather than wholesale leased lines. ComReg has defined a separate market for retail leased lines and notes that, from the demand-side, they are not substitutable. Wholesale leased lines and PPCs are used by authorised operators to provide point to point network capacity for the provision of retail services.

***Conclusion***

8.29 ComReg concludes that wholesale leased lines and PPCs are substitutes, from the demand and supply-side, and, thus, are included in the same relevant market.

## Are there separate trunk and terminating segment markets not differentiated by bandwidth?

***Summary of consultation issue***

8.30 Figure 8.2, above, shows the construction of a wholesale (and retail) leased line, given the ComReg proposed split of trunk and terminating segments at the customer's leased line serving exchange. It should be noted that it is assumed that the infrastructure is provided by eircom, in this example. However, it could be provided by any operator.

8.31 *The Relevant Markets Recommendation* defines two separate markets for trunk and terminating segments and leaves it to the NRA to determine where the boundary lies, in light of national circumstances and national network topologies. ComReg has considered whether this distinction is appropriate for Ireland or whether it would be better to define a single market encompassing both trunk and terminating segments.

8.32 Initial consideration of trunk and terminating segments might seem to indicate that there is a single leased lines market, reflecting the end-to-end products which are available in the Irish market (be they wholesale leased lines or PPCs).

8.33 However, from the demand-side trunk and terminating segments are complements rather than substitutes, given that they relate to the provision of capacity across different parts of the underlying network.

8.34 From the supply-side, a hypothetical existing supplier of wholesale trunk capacity (or terminating segments) would not be in a position to respond to an increase of 5 to 10% in the price for wholesale terminating segments (or wholesale trunk capacity) by a hypothetical monopolist supplier, given the significant investments required to construct the necessary infrastructure (many of them sunk costs for trenching and ducting) to provide such terminating or trunk segments

8.35 ComReg is of the view that terminating and trunk segments of leased lines fall within separate markets. A market for terminating segments, regardless of where one draws the precise boundary, would be dominated by local access infrastructure. There are well established barriers to entry associated with local access infrastructure, associated with large sunk costs and economies or scale, scope and density. As such, it is unlikely that material facilities-based competition will emerge in the market for terminating segments, in the foreseeable future.

8.36 The market for trunk segments, however, has potentially lower barriers to entry. Indeed, there is a certain level, albeit limited, of investment in infrastructure, between urban centres. However, this is far from sufficient to describe the trunk market as either competitive or prospectively competitive.

8.37 However, given the prospect of further infrastructure investment by competing operators over the longer term which may impact the market structure, the trunk market should be monitored and reassessed in light of market developments.

8.38 ComReg has considered whether it would be appropriate to identify narrower trunk markets on a geographic basis, for instance, by defining a trunk market as being between named cities. However, ComReg believes that the potential geographic differences are better considered when assessing the geographic scope of the market.

8.39 It has also considered whether it would be appropriate to identify a split based on operators' network hierarchies. In general, networks in larger countries are characterised by a hierarchical structure, where regional traffic is aggregated onto an inter-regional network. However, it is evident that the network topologies of major networks in Ireland are not characterised by structured hierarchical networks. As such, such a distinction does not provide a clear guide as to where any boundary between trunk and terminating markets should lie.

8.40 ComReg considers that the "boundary" between trunk capacity and terminating segments should be defined as occurring at the customer's leased line serving exchange. While that exchange in practice is likely to be operated by eircom, it need not be. ComReg considers that it is appropriate to use the serving exchange as the relevant boundary not because of its switching functionality (irrelevant for capacity based services), but because of the significance of switches in network architecture-based 'build' decisions of alternative operators. Given the relatively flat network hierarchies used in Ireland, and the high sunk costs entailed in network build below the serving switch, ComReg does not anticipate that this situation will change in the timeframe of this review.

8.41 In its retail analysis, ComReg has considered the impact of bandwidth on market definition. In examining the wholesale terminating market, it is important to note that, while demand for wholesale terminating segments is influenced by demand at the

retail level (for example, the use of retail leased lines as an input for the provision of managed products), it is also derived from OAOs' own use of wholesale leased lines. In fact the two largest wholesale purchasers are mobile operators, purchasing wholesale leased lines exclusively for own use. ComReg notes that purchasing patterns at the wholesale level are distinct from the retail level; generally operators have different requirements and have a greater capacity demand than retail end users.

8.42 Moreover, the *Relevant Markets Recommendation* defines a market for terminating segments which does not make a distinction between bandwidth. ComReg considers this to be appropriate to defining the market for terminating segments. ComReg does not see any evidence to suggest that the relevant product market should be differentiated by bandwidth. Therefore, ComReg concludes that there should be a single market for terminating segments of all bandwidths.

8.43 ComReg takes the view that trunk segments are part of an operator's core network, and are used to carry aggregated traffic. Aggregation both facilitates an operator in sharing the burden of sunk costs of construction, and provides incentives for the operator to install facilities to accommodate medium to long-term anticipated demand. In the context of these aggregation-driven incentives to install, ComReg has no evidence to suggest that there are either demand-side or supply-side factors that make it appropriate to break down the trunk segment market into smaller bandwidth defined markets (i.e., to disaggregate capacity).

8.44 The incentives are such that any existing supplier of trunk capacity would respond to a lasting price increase for a particular bandwidth by switching supply to that market.

***Consultation question 14-17***

**Q. 14. Do you agree that there should be separate markets for trunk segments and terminating segments? Please detail your response with supporting evidence.**

**Q. 15. Do you agree that given the prospective analysis, the boundary between trunk segments and terminating segments should be drawn at the customer's serving exchange? Please detail your views with supporting evidence.**

**Q. 16. Do you agree that there is a single relevant product and service market for trunk segments, not differentiated by bandwidth? If not please provide the reasoning for your views.**

**Q. 17. Do you agree that there is a single relevant product and service market for terminating segments, not differentiated by bandwidth? If not please provide rationale for your argument.**

***Responses to consultation question 14-17***

8.45 All four respondents agreed that it was appropriate to define separate markets for trunk and terminating segments.

8.46 Two respondents agreed that trunk and terminating segments were theoretically complementary products and are not substitutable, from either the demand or supply-side. It was their view that the separation was largely irrelevant for Ireland, since separate products did not exist and neither was likely to become effectively competitive in the timeframe of the review.

8.47 Another respondent noted that, in principle, it would agree with ComReg's view "that the terminating and trunk segments of leased lines are in separate markets". However, it noted that the trunk market was more correctly defined as that section of the trunk network (including competing network nodes) which in aggregate comprises the competitive trunk environment. They argued that this was made up by the aggregation of the main trunk routes within Ireland, and that the actual definition of these nodes and routes was dependent on two factors. The first factor was the presence of alternative infrastructure that was being sold to third parties, on either a wholesale or retail basis. The second factor was the presence of an eircom transmission node capable of providing connection between the trunk segment and the terminating segment.

8.48 On this basis, the respondent proposed that the trunk boundary would be urban centres, rather than specific locations. For example, the route between Dublin and Cork would be declared as "trunk segment" based on the fact that ESB, Esat BT and eircom had infrastructure between these locations and that eircom had significant

transmission nodes allowing connection to the terminating segment. They argued that an analysis of alternative networks would allow a definitive list of routes and urban areas to be classified as the trunk segment market and that 'it is almost certain that eircom can offer a suitable connection point in each urban area'. All infrastructure from these connection points to end users would make up terminating segments. The argument was supported by Figure C, contained in Appendix J. The respondent also pointed out that the terminating segment also contained a 'junction' element (junction describes the connectivity from the customer serving exchange to the transmission node).

8.49 The respondent noted that OAOs were purchasing products in the terminating segment market and were combining these with trunk segment components purchased from alternative suppliers to deliver end to end leased line services in the retail market. The respondent noted that ComReg's statement that '*trunk segments are part of an operator's core network, and are used to carry aggregated traffic',* would appear to lend weight to the respondent's proposed definition of trunk segments and terminating segments.

8.50 Additionally, the respondent remarked that the location of the boundary had a profound effect on the market analysis undertaken and the conclusions drawn from it. It took the view, based on its modified trunk definition, that this market was sufficiently competitive.

8.51 There was support from two respondents that the serving exchange was the appropriate split between trunk and terminating segment markets. One respondent agreed that the boundary network topology in Ireland was flat, and that current leased line pricing supported a break point at the local exchange. The segment from local serving exchange to termination point was priced in a different manner to that between the local exchanges on each end of the circuit. This was further supported by another respondent, who submitted that the serving exchange was significant in terms of the planning and build decisions of alternative operators.

8.52 Another respondent, in agreeing with the proposed boundary split, noted that this view was reinforced by eircom's own pricing models for leased lines and PPC EULs, which made a clear distinction between the "local access" and "main link" sections and delineated the boundary at the local serving exchange. Where the exchange was not the main switching core it was from the local RSU[71] which the copper access network was fed.

8.53 One respondent, who believed that the trunk market should be defined in terms of the presence of alternative infrastructure and an eircom transmission node, disagreed with the statement that the network topology of major networks was not characterised by a structural hierarchical network. The respondent argued that, in considering the appropriate boundary, it was imperative that: (1) alternative providers' networks and (2) the location and concentration of leased line end users were taken into account. The respondent stated that leased lines were essentially a product for the business community and many of the other OAOs' networks had been built to service clusters of business customers.

[71] Remote Subscriber Unit

8.54 In contrast to some others, this respondent argued that eircom's own network was hierarchical in nature: At the top level there were a number of national SDH rings which were provided primarily over fibre. These linked the major urban centres and to a significant degree mirrored the alternative national transmission networks. Within the major urban centres, there were metro rings which were similar to the OAO metro rings and the government funded MANs[72]. Below this level were point to point SDH connections which reached into lesser urban centres and below this again were the layer of leased line network nodes which equated to a significant degree with the local serving exchanges.

8.55 The same respondent disagreed with ComReg's argument that it was appropriate to use the serving exchange as the relevant boundary because of the significance of switches in the network architecture based build decisions. It argued that OAOs had built out their national networks to the same locations as the eircom network. The metro networks constructed by OAOs and MANs were serving the same business parks, government buildings and educational centres as the eircom metro rings. This allowed competing operators to deliver end to end high bandwidth leased lines completely independently of eircom.

8.56 The respondent suggested that, with the availability of PPCs, operators would combine the competitive trunk segment with Transport Links and End User Links purchased from eircom to deliver low bandwidth leased lines in competition with eircom retail. The PPC product had been developed in a sufficiently flexible manner to allow OAOs who had constructed own network further out to the end user to connect at every level of the eircom network, right down to the local serving exchange.

8.57 When asked whether it was appropriate to conclude that there was a single terminating segment market not differentiated by bandwidth, two respondents agreed with ComReg's conclusion. They stated that they did not see any demand-side or supply-side factors that would suggest a segmentation of the market by bandwidth.

8.58 However, another respondent disagreed with the proposed position because, while an STM-1 might substitute for 63x2Mbits, discretely presented 63x2Mbit/s would not substitute for an STM-1 because the SDH management capability would be lost. The respondent believed that the functional differences between PDH and SDH means that these did not operate in the same terminating segment market. This was also reflected in the eircom pricing structure for STM-1 leased lines (which differed to that for PDH services).

8.59 Another respondent did not agree that there was a single terminating segment market, not differentiated by bandwidth. The respondent argued that the dynamics differed for high and low bandwidth terminating segments. This respondent argued that there were different supply-side conditions for low and high bandwidth leased lines, which precluded their inclusion in the same market. The low bandwidth terminating market comprised the junction segment from the major transmission node to the leased line network node at the serving exchange plus the copper access loop connection to the end user. Where the end user was parented off the major transmission node, there was no requirement for a junction component in the low bandwidth terminating segment. Where the customer was connected to a local serving exchange other than the major

[72] See section 3 for an overview of government funded networks.

transmission node, the OAO could use its own infrastructure and connect using a 2Mb/s Transport Link to the local serving exchange. This allowed an OAO to maximise its own network use or purchase a regulated product for all elements of the Terminating Segment Market. An operator wishing to use its own facilities could eircom using the trunk segment network and PPCs at each end as the terminating segments. Where the competitor was experiencing rapid growth in its customer base at one serving exchange, it could extend its own network to interface directly with the copper loop at that serving exchange. Thus, the competitor could replace the regulated junction segment from the trunk node to that exchange with its extended network.

8.60 It argued that there were different competitive dynamics for high bandwidth terminating segments. The respondent claimed that this was highlighted by ComReg's finding that the retail market for high bandwidth leased lines (above 2 Mb/s) was sufficiently competitive and that the supply-side conditions were different (e.g. provided primarily over fibre, although radio networks may also be deployed). The respondent noted ComReg's illustration that both the high and low bandwidth retail markets were supplied through the use of wholesale leased lines and, thus, the bandwidth split at retail level would also be appropriate at wholesale level.

8.61 Of the three respondents who provided submissions in relation to whether there should be a single trunk market, all agreed with ComReg that this market would not be segmented by bandwidth.

***ComReg Position***

8.62 In respect of one respondent's comments that, in order to identify the appropriate boundary split, the trunk segment market should be defined by two criteria, namely the presence of: (a) alternative infrastructure; and (b) an eircom transmission node capable of providing connection between trunk and terminating segments, ComReg notes a number of inherent difficulties.

8.63 Firstly, ComReg is of the view that the respondent's methodology of market definition is inappropriate. The proposed boundary split lacks any economic justification or consideration of substitutability. Additionally the respondent was of the view that the market boundary should be defined in relation to the level of competition in the market. However ComReg takes the view that such considerations are more appropriately examined in the market analysis. ComReg must take the utmost account of *The SMP Guidelines,* which notes that, when defining the relevant product/service market, there are two main competitive constraints to be considered: demand and supply-side substitution. In the initial consultation, ComReg recognised that, from the demand-side, wholesale leased lines were provided end-to–end, making it difficult to differentiate between trunk and terminating segments. However, ComReg concluded that the products were complementary. Additionally, ComReg also noted that, from the supply-side, there were significantly different barriers to entry for trunk and terminating segments. The boundary split was identified at the customer's serving exchange, since it entailed significant sunk costs associated with the terminating segment. Thus, in keeping with the European Commission's recommendation, ComReg defined distinct markets.

8.64 Secondly, ComReg takes the view that to define a market on the basis of the proposed criteria (*e.g.* the presence of OAO network infrastructure and the presence of an eircom node) would reflect incorrect assumptions, in terms of the level of competition

in the market. It was the respondent's view that the presence of alternative infrastructure on certain routes provided sufficient evidence of differentiated competitive dynamics, justifying the definition of a separate market. ComReg however, does not equate the presence of alternative infrastructure *per se* with a lack of dominance. In order to address the respondent's comments fully, it is essential to examine the actual take up of services on those networks.

8.65 ComReg finds that there is an additional practical difficultly with the proposed boundary. Such a fluid boundary split would that mean that a circuit could shift from being a terminating to a competitive trunk segment irrespective of the level of take up of services on the infrastructure. ComReg is of the view that such a result is unsatisfactory as it would fail to address the realities of the market.

8.66 A further difficulty with the proposed boundary would be the significant difference in the structure of the terminating segment. According to the respondent's definition, the terminating segment is the element of the point to point capacity which is not a trunk segment. This would result in great differences in lengths of terminating segments (*e.g.* while a terminating segment in Dublin may be a couple of metres a terminating segment on routes where there an absence of alternative infrastructure could potentially be hundreds of kilometres). ComReg believes that this would result in difficulties in the regulation of terminating segments (*i.e.* pricing).

8.67 One respondent considered leased lines to be a metropolitan product used generally by business users and noted that, on certain routes and in certain locations there was a greater concentration of demand. However, ComReg does not agree, and notes that demand for wholesale leased line is not only derived from retail leased lines. They are used for the provision of multiple retail services, demand for which is far more widely dispersed.

8.68 Finally, ComReg notes that there is an additional problem with the proposed boundary. It presumes that the only purchasers of terminating segments are OAOs with own network infrastructure. This is incorrect. There are a large number of purchasers of trunk and terminating segments without infrastructure. Additionally, the proposal to define trunk segments on the basis of a presence of an eircom node would require all alternative infrastructure to interconnect with eircom's network. This would entrench reliance on eircom's network for terminating segments and the potential for eircom to leverage its market power into the trunk segment market. In conclusion, ComReg has considered the proposed boundary, but maintains that the serving exchange identifies the appropriate split between the trunk and terminating segments.

8.69 In light of one respondent's comment, ComReg has reconsidered whether there is a single market for terminating segments. ComReg recognises that demand for terminating segments is derived from retail demand and that it has identified a bandwidth split, at 2Mbps, for retail leased lines. However, ComReg notes that it is important to recall that wholesale capacity is demanded by authorised operators not only for the provision of retail leased lines, but also to provide underlying capacity which, in turn, is used for the provision of other retail services (e.g., fixed and mobile switched voice services).

8.70 ComReg has noted one respondent's comment that some mobile operators choose to build, rather than buy, capacity. However, it notes that demand for wholesale leased

lines by MNOs appears to be stable , at least in part sustained by the entry of new operators and the roll out of high capacity UMTS networks. ComReg is of the view that there is demand for wholesale leased lines from OAOs. Further, it has no reason to believe that OAOs will cease to acquire leased lines during the time-frame of this review. OAOs that build their own facilities will only do so on routes over which their traffic volumes are sufficient to justify the investment. As such, they are unlikely to ever rely exclusively on own built facilities. Further, they will continue to require leased facilities during their network construction works.

8.71 The data available to ComReg (as indicated by eircom's high market share for the minimum set of leased lines) indicates that a relatively small share of wholesale leased lines with capacities up to and including 2 Mbps are used for the provision of retail leased lines. Accordingly, it appears that they are used by operators to provide other retail services. As such, it is wholly inappropriate to assess demand for wholesale leased lines only by reference to retail leased lines.

8.72 ComReg understands that there are no functional differences (other than bandwidth itself) between different bandwidth wholesale leased lines. Further, OAOs can use multiple lower bandwidth lines on a route, in place of a single higher bandwidth circuit, and can use a higher bandwidth circuit in place of a lower bandwidth line.

8.73 At the wholesale level, the pricing dynamics differ from those at the retail level. Depending on the platform or protocol and compression technology used with the wholesale capacity to deliver retail services, the actual volume of retail services that the OAO can deliver over the capacity does not necessarily increase linearly with bandwidth. Such protocols/platforms and compression techniques have the effect (where used) of blurring the capacity distinctions between bandwidths. As a result, there is effectively a chain of substitution between wholesale circuits of differing bandwidths. In response to a price increase of up to 10% by a hypothetical monopolist supplier of wholesale leased lines of a particular bandwidth, OAOs would be in an position to switch to circuits of a different bandwidth.

8.74 ComReg recognises that high bandwidth leased lines are currently not discounted by eircom (setting pricing that tends to operate as a price ceiling for leased lines in the market). There is little incentive for OAOs to purchase wholesale leased lines at retail prices if they intend to simply resell the lines. However, there might be an acceptable margin if they are used to provide higher margin retail services or as multiple smaller bandwidth leased lines. ComReg recognises also that 'building' rather than 'buying' might be more attractive for OAOs seeking to supply higher margin retail services ComReg has not received any data that indicates that demand for wholesale terminating segments differs by reference to bandwidth. As discussed above, the chain of substitution created by the ability of OAOs to use protocols/platforms and compression technology to provide greater retail capacity over particular bandwidths erodes the capacity-driven functional distinctions between bandwidths. As such, OAOs are in a position to switch to circuits of different capacities in response to a SSNIP.

8.75 From the supply-side, ComReg is aware that eircom provides the terminating segments of wholesale leased lines over the same network infrastructure that it uses to provide retail leased lines. Further, it appears that it provides low bandwidth terminating segments over legacy copper infrastructure, SDH and fibre technology (to

a far lesser extent) while using only the latter two technologies for higher bandwidth terminating segments. However, other providers of low and high bandwidth terminating segments do not follow the same technological patterns. In the majority of cases, OAOs provide terminating segments primarily over fibre infrastructure (irrespective of their bandwidth). As such, it appears that no valid bandwidth-driven technological supply-side distinction can be drawn.

8.76 Further, if potential entrants were to respond to a price increase by a hypothetical monopolist supplier of either lower or higher bandwidth wholesale circuits by entering the market, they would do so across all bandwidths – to maximise the revenues generated through the use of the necessary network (such sunk costs are, of course, significant). In such circumstances, all revenues generate some return on the investment made.

8.77 One respondent disagreed with the proposal that there is a single market for terminating segments. It argued that 63 2Mb/s circuits would not be an effective substitute for an STM-1 line, because the SDH management capability will be lost. ComReg notes that this comment is aimed at the management capabilities provided by SDH, which would include things such as card resilience, route resilience and the ability to provide circuits from a management centre. These services would be priced above the standard leased line price and would be at the request of a customer. They are not relevant to this market analysis.

8.78 All respondents agreed that there is a single market for trunk segments, undifferentiated by bandwidth.

***Conclusion***

8.79 ComReg concludes, in keeping with the *Relevant Market Recommendation*, that there is no bandwidth split in the relevant markets for terminating and trunk segments.

## The Geographic Market

### Is there a national geographic market for terminating segments? Is there a national geographic market for trunk segments?

8.80 ComReg has considered the scope of the geographic market, within which the conditions of supply and demand for the relevant wholesale terminating and trunk segments are sufficiently homogeneous.

8.81 As a starting point, there is no substitutability between terminating segments in different geographic locations (i.e. a consumer is unlikely to respond to a lasting price increase by a hypothetical monopolist for terminating segments in Dublin and substitute for segments in Galway). Additionally, ComReg is of the view that there is no substitutability between trunk segments in different geographic locations (i.e. a consumer is unlikely to respond to a constant price increase by a hypothetical monopolist for trunk segments on a Dublin to Cork for substitutability route for trunk segments from Dublin to Galway).

8.82 ComReg also noted, in the initial consultation, that there are geographic regions and leased line routes on which it appears that demand is stronger and, thus, competition is more developed. In the terminating segment market, ComReg noted that, within Dublin, due to the concentration of economic activity, there is greater demand for leased line capacity. As a result, there is greater availability of competing network infrastructure. Additionally, alternative infrastructure exists on the busier intercity routes (to meet the greater demand).

8.83 Further, the analysis shows that there is no cost differential based on geographic location in the provision of terminating and trunk segments. Products are homogeneous and are not differentiated by marketing strategies in respect to the product, price or discount. On this basis, ComReg took the view that the products are homogeneous nationally.

8.84 ComReg recognizes that the competitive dynamics in Dublin and on intercity routes differ from elsewhere, due to a greater scale of density and a greater concentration of demand for high bandwidth circuits. Where such demand exists, there is a greater economic incentive to invest in infrastructure. However, ComReg also notes that a number of alternative operators with infrastructure in Dublin have expanded their networks into other regions. Additionally, despite the route-specific nature of wholesale trunk segments, ComReg is of the view that decisions to enter the market through the construction of new facilities are not made on a route-by-route basis. Alternative infrastructure is constructed as a 'network' in its own right (whether as fibre rings, connectivity between key centres or some other architecture), rather than a single link between two geographic points. Competing operators, for example, EsatBT and ESB Telecom, have constructed fixed networks around fibre rings.

8.85 ComReg took the preliminary view that it was inappropriate to define the relevant wholesale terminating and trunk segments geographic markets on a route-by-route or urban area basis in Ireland.

***Consultation question 18***

**Q. 18. Do you agree with ComReg's view that there are two distinct markets at the wholesale level for terminating and trunk segments, (not segmented by bandwidth) which are both national in scope? Please provide evidence to support your response.**

***Responses to question 18***

8.86 Three of the four respondents agreed that it was appropriate to define two distinct markets at the wholesale level for terminating and trunk segments (not segmented by bandwidth). One respondent, however, believed that the relevant geographic market for terminating segments differed for different bandwidths. It took the view that the relevant geographic market for low bandwidth terminating segments was national in scope, while the geographic scope of high capacity terminating segments and trunk segment was defined by demand and supply.

8.87 The respondent argued that it was inappropriate to review the geographic scope of terminating and trunk segments without differentiating by reference to bandwidth. It argued that the proposed geographic definition significantly reduced the scope for

effective competition going forward because high capacity leased line supply and demand were driven by business density, which defined the topology of competing networks. It was suggested that this was evidenced by the presence of alternative infrastructure in business dense areas. It was the respondent's view that the relevant geographic area for the high bandwidth relevant product market was should be defined by reference to the actual geographic area in which these competing undertakings were actively responding to market demands for both high bandwidth and low bandwidth products over the same infrastructure.

8.88 It argued that market conditions, therefore, determined the geographic area in which the conditions of competition were sufficiently homogeneous since, outside this area, the conditions of competition were sufficiently divergent (not homogenous) to deter investment. Therefore, it was contended, the geographic scope for broadband terminating and all trunk segments was not national in scope. Rather, it was confined to the geographic boundaries set by market dynamics.

8.89 The respondent noted that there was a distinct market for low bandwidth terminating segments which was national in scope.

8.90 Another respondent noted that there were no indications that the country was anything but a single geographic market. There was no region where pricing indicates a greater level or lesser degree of competition. It was the respondent's view that the MANs were not likely to have any significant impact on this analysis during the timeframe of review. The respondent agreed that there were two markets which were national in scope, not differentiated by bandwidth. It believed that the boundary between trunk and termination segment was not clear, but that this did not impact on the scope of the relevant geographic markets.

8.91 There was further support for a single national market from another respondent who agreed that the geographic markets for both wholesale trunk and wholesale terminating segments should be national. It noted that defining separate geographic markets would inherently require the definition of each route as a separate market. The respondent submitted that this would require overly complex and intrusive regulation and could further enable cross subsidization of wholesale geographic markets by eircom.

8.92 One respondent, in broadly commenting on the definition of the trunk and terminating segment markets noted that, in general terms, they agreed with the market definition outlined by ComReg – i.e. a single national market including all bandwidths and services.

***ComReg's position***

8.93 As noted above, the inherent nature of dedicated capacity will be tied to two fixed geographic points, therefore different point to point connections cannot be considered to be viable demand substitutes. While demand and supply-side factors will not constrain the pricing behaviour of a hypothetical monopolist of a trunk or terminating segment supplier on a regional or line by line or a regional basis, it would be inappropriate to define a number of markets on either a line by line basis. Potentially a large number of small markets could be identified with the same dominant operator and competition issues. However this would not render any significant benefit (over a single market) to the regulatory outcome.

8.94 It was contended by one respondent that the geographic scope of high capacity terminating and all trunk segments was not national in scope. Rather, it was confined to the geographic boundaries set by market dynamics. Thus, it was proposed that a number of narrower geographic markets should be defined, according to business density.

8.95 ComReg notes that, in *The SMP Guidelines*, the definition of the geographic market does not require the conditions of competition between traders or providers of services to be perfectly homogenous. It is sufficient that they are similar or sufficiently homogenous and accordingly only those areas in which the conditions of competition are 'heterogeneous' may not be considered to constitute a uniform a market[73]. *The SMP Guidelines* do not expand on this however Article 9(7) of the Council Regulation 139/2004[74] on the control of concentrations provides a number of criteria of assessment.

*'The geographical reference market shall consist [……] conditions of competition are appreciably different in those areas. This assessment should take account in particular of the nature and characteristics of the products or services concerned, of the existence of entry barriers or of consumer preferences, of appreciable differences of the undertakings' market shares between the area concerned and neighbouring areas or of substantial price differences'.*

8.96 When analyzing demand-side substitution, NRAs should assess mainly consumers' preferences as well as their geographic patterns of purchase. ComReg notes that the functional characteristics and pricing structure for trunk and terminating segments purchased throughout Ireland are homogenous. Uniform PPC and leased line products are available at a standard price on a national basis, with undifferentiated marketing strategies (rebates are applied nationally).

8.97 ComReg has considered whether there are significant differences in the barriers to entry as part of the supply-side analysis. As noted in *The SMP Guidelines* 'As far as supply-side substitution is concerned, where it can be established that operators which are not currently engaged or present on the relevant geographic market will however decide to enter that market in the short term in the event of a relative price increase, then the market should be expanded to incorporated those 'outside operators'[75]. ComReg considers that an operator not currently providing services in a theoretical market with low business population density could enter the market in the event of a constant price increase of trunk and terminating segments.

8.98 ComReg reiterates that the costs associated with network build are largely uniform across Ireland. However, it notes that, in areas of greater business density, demand is more concentrated, allowing greater economies of scale to be achieved. This is evidenced by the presence of more alternative infrastructure in urban areas and on intercity routes.

8.99 However, ComReg is also of the view that new entrants are likely to first target areas of high demand and extend network reach in time through reinvestment of revenue

[73] para 56
[74] COUNCIL REGULATION (EC) No 139/2004 of 20 January 2004 on the control of concentrations between undertakings (the EC Merger Regulation)
[75] para 58

generated from the initial phase. ComReg notes that most operators with network infrastructure in such centres (e.g. Dublin) also have further network in other locations in Ireland. Thus, taking the dynamics of the market into consideration, ComReg has seen that operators initially providing service in urban areas of high populations, such as Dublin; expand their networks into other regions. Taking a forward looking approach, it would be inappropriate to define a distinct geographic market where competition is currently more effective.

8.100 As noted above, Article 9(7) of the Council Regulation 139/2004 notes that appreciable differences of the undertakings' market shares between the area concerned and neighbouring areas may be indicative of separate geographic markets. Having identified that there are areas and routes of concentrated demand, which make up a large proportion of the total market, it was noted that the *de minimis* market shares of local operators indicated that the competitive conditions in these areas of high demand area are not sufficiently differentiated from areas of lower demand. The incumbent operator continues to retain high shares of the total market. Thus, it must be concluded that local operators' shares is limited. From the data available to ComReg, eircom currently has a market share of 90% for trunk and terminating segments with over 66% of its traffic carried over a number of key national routes[76], which would indicate that it has a market share well in excess of 40% even on these specific routes.

8.101 ComReg concludes that market dynamics within highly (or indeed very low) populated business markets are not sufficiently heterogeneous to justify the definition as a separate geographic market. These conclusions are supported by the finding of other Member States - in Germany it was held that it is a characteristic for conurbations that more undertakings are active than in rural areas, thus a separate market for Greater Berlin was inappropriate[77].

8.102 ComReg proposes to adopt national geographic definitions for the market for terminating and trunk segments. This will be kept under review and in the event that market dynamics change to have a sufficiently significant impact ComReg reserves the right to reassess the appropriateness of this definition.

8.103 ComReg's conclusion is that demand and supply-side factors support the definition of national relevant markets for wholesale terminating and trunk capacity. ComReg will monitor changes to the markets defined during the timeframe of the review.

***Conclusion***

8.104 ComReg concludes that there are two distinct markets at the wholesale level for terminating and trunk segments, which are not segmented by bandwidth and are national in scope.

[76] Dublin to Cork, Galway, Limerick and Waterford.
[77] RegTP, Order BK 2c 00/021 of 16 January 2002

# 9 Wholesale Market Analysis – Terminating and Trunk Segments

## Background

9.1 Having first identified relevant markets, relating to wholesale trunk and terminating segments in Ireland, ComReg is required to conduct an analysis of whether the market is effectively competitive by reference to whether any given undertaking or undertakings is/are deemed to hold SMP in that market. Recital 27 of the *Framework Directive* states that a relevant market will not be effectively competitive "*where there are one or more undertakings with significant market power*". Regulation 25(1) of the Framework Regulations states that:

"*A reference in these Regulations ... to an undertaking with significant market power is to an ... undertaking which (whether individually or jointly with others) enjoys a position which is equivalent to dominance of that market, that is to say a position of economic strength affording it the power to behave to an appreciable extent, independently of competitors, customers, and, ultimately, consumers*".

9.2 Accordingly, an undertaking may be deemed to have SMP either individually or jointly with other undertakings in a relevant market. In addition, where an undertaking has SMP on a relevant market, it may also be deemed to have SMP on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking[78].

9.3 ComReg is obliged under the *Framework Regulations* to assess SMP in accordance with European Community law and to take the utmost account of the *SMP Guidelines*[79]. Those criteria considered to be probative on the issue of SMP are discussed below.

## Market Analysis for terminating segments

***Summary of consultation issue***

**Market shares**

9.4 As noted previously, terminating and trunk segments are not purchased in isolation. Wholesale leased lines are predominantly sold and purchased end-to-end. Due to variance among operators in their interpretation of the terminating and trunk split, there are inherent difficulties in comparing data. ComReg will, therefore, review market share in terms of the number of end–to-end circuits and the relative revenue

[78] Framework Regulations, Regulation 25(3).

[79] Framework Regulation 25(2).

earned. The Figures below outline eircom's market share from Q2 2002 to the beginning of 2004[80].

9.5 As noted in Section 8, regardless of where ComReg identified the appropriate boundary split between terminating and trunk segments, eircom would still have SMP in the relevant markets, eircom's market share for end to end leased lines is well in excess of 50%. Given the fact that there are few competing operators, there appears to be no compelling reason why there should be a significant divergence in market share between trunk and terminating segments.

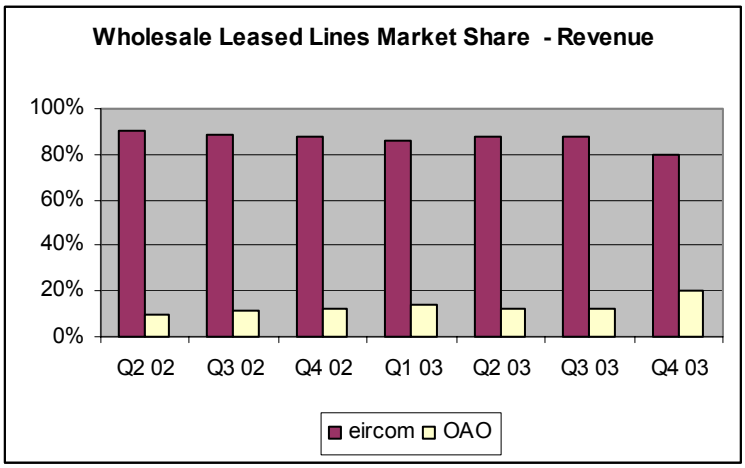


**Figure 9.1: Wholesale Leased Lines Market Share - Revenue**

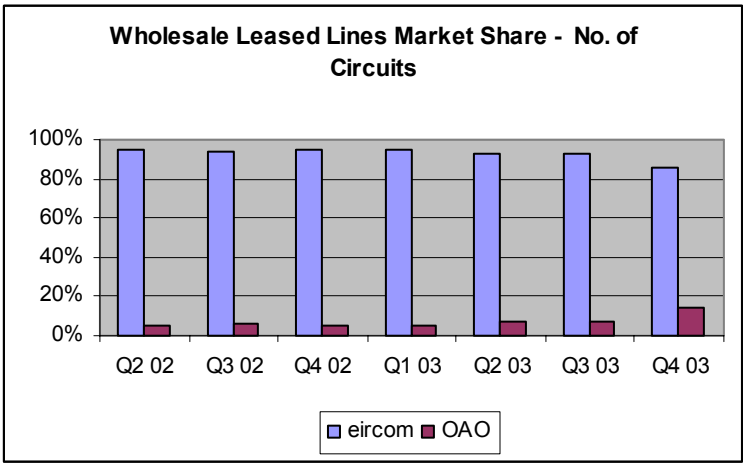


**Figure 9.2: Wholesale Leased Lines Market Share – Number of Circuits**

9.6 As can be seen in the figures above, eircom currently hold over 85% market share in terms of the number of circuits and approximately 80% in terms of revenue. The difference in market share measured by circuits as compared to revenue indicates that eircom has higher market share in the provision of lower capacity circuits, which earn lower revenue per circuit.

[80] ComReg's Irish Communications Market: Quarterly Key Data Reports

9.7 ComReg's consideration of the market share data (together with price data analysed below) suggests that competition in the market, while slowly increasing, has remained weak over the last three years.

9.8 The evidence indicates that eircom's market share has not only been well over 50% (whether calculated by revenue or volume) of the relevant market, but has also remained stable over time[81]. The market share data strongly suggests that eircom is dominant.

9.9 This is consistent with competition law principles and *The SMP Guidelines*, which states that market shares are often used as a proxy for market power. Although a high market share alone is not sufficient to establish dominance, very high market shares are taken to indicate a *prima facie* case.

9.10 It should also be noted that wholesale leased lines provided by OAOs are in the large part dependent on wholesale leased lines purchased from eircom rather than necessarily provided over own infrastructure.

**Pricing**

9.11 Wholesale terminating and trunk segments can be purchased at the wholesale level only as part of a wholesale leased line product (priced on a 'retail-minus' basis) or as a PPC (priced on a cost orientated basis).

9.12 As a result of existing regulatory obligation eircom publishes its wholesale tariffs. OAOs do not publish tariffs and prices are usually derived from competitive tendering, where eircom's published price effectively constitute a price ceiling.

9.13 ComReg has considered whether the price developments for wholesale leased lines since 1999 reflect trends that might indicate that competition in the market is effective. It notes that all such data should be considered in light of the impact of the existing regulatory pricing constraints.

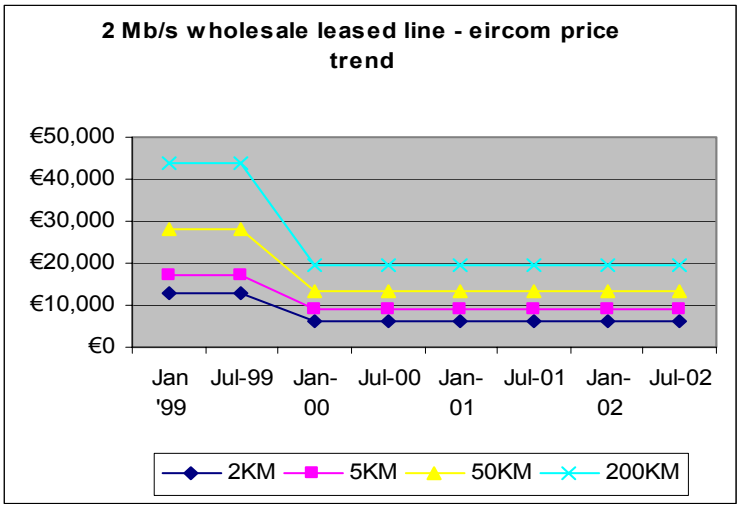


**Figure 9.3: Prices for a 2 Mb/s leased line circuit (Euros)**

[81] ComReg notes that some circuits may be sold more than once, for example a fixed line OAO may purchase wholesale capacity from eircom and then sell that capacity to a mobile operator. Therefore the importance of eircom's market share is understated.

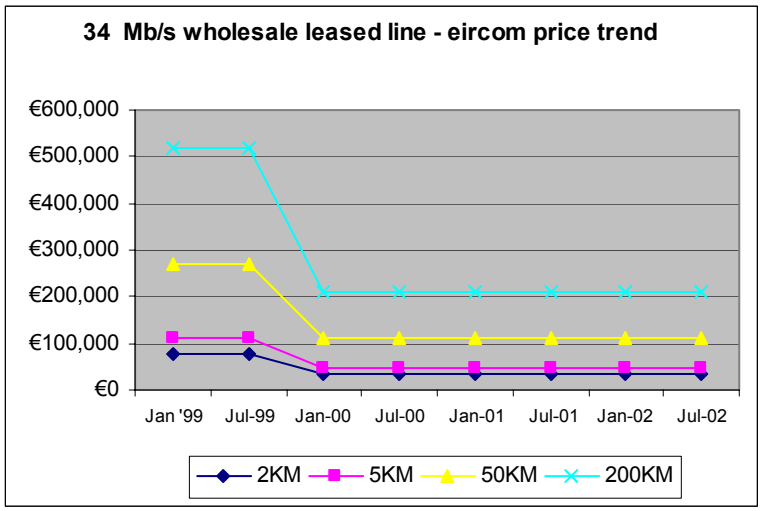


**Figure 9.4.: Prices for a 34 Mb/s leased line circuit (Euros)**

9.14 eircom's price development does not indicate that it is adjusting its prices to respond to competitors in the market. The data indicates that there have been no price adjustments by eircom in response to market entry. As such, it would appear that little pressure has been exerted on eircom's prices.

9.15 Given the pricing structure, ComReg's analysis of retail pricing development is also relevant at the wholesale level. As noted above, the static pricing does not appear to reflect responsiveness to competitors, consumers or end-users.

**Technological advantages**

9.16 ComReg does not believe that any operator enjoys advantages in this respect. The technology used to supply both wholesale terminating and trunk segments is mature and no operator enjoys an exclusive or preferred relationship with the entities supplying the necessary inputs (in terms of services, including trenching construction, and products, including cables).

**Infrastructure advantages**

9.17 ComReg has considered the extent to which it is economically feasible to replicate eircom's terminating network. The data provided to ComReg during this review indicates that only one entity other than eircom has invested in terminating facilities in Ireland. The geographic coverage of this network indicates that other operators are not in a position to provide terminating segments to replicate much of the coverage of eircom's network.

9.18 Network diagrams and coverage data ordinarily relate to trunk or core networks. As a result, they provide an incomplete picture of the relative ability of the network operator to provide terminating capacity. However, the fact that they tend to overstate the ability of other operators to provide end-to-end coverage (particularly the

termination component), further highlights the extent to which other operators have failed to replicate eircom's geographic coverage.

9.19 In addition, eircom's network is ubiquitous in its coverage. Moreover, a large portion of its relevant network costs are sunk, providing eircom with the access to infrastructure in most places in the country in a timely fashion and without any need to incur substantial costs. In essence, the ubiquity of eircom's network as a whole reduces the cost of marginal deployment of terminating segments, and facilitates the achievement of almost universal coverage.

9.20 ComReg takes the view that given the sunk costs of extending networks to redress this coverage imbalance, it is unlikely that greater competition will develop within the timeframe of this review. Not only are the networks of other operators not extensive (and not the subject of plans for significant expansion), but the addition of further terminating infrastructure would require the operators to incur significant sunk costs.

**Barriers to entry**

9.21 As noted above, the sunk costs associated with constructing terminating facilities are high. However, the significance of this barrier to entry is not uniform. In particular, it is most important for lower bandwidth facilities because, while the costs of trenching and ducting are not reduced for lower bandwidths, the potential returns for the use of such facilities are significantly lower (leading to higher costs as a proportion of anticipated retail revenues).

**Economies of scale and scope**

9.22 The provision of terminating segments is characterised by significant economies of scale, largely derived from the existence of the large fixed costs of ducting and cabling work. The marginal costs of supplying capacity or additional capacity over installed facilities is relatively small. Further economies of scale arise in relation to equipment at local exchanges and third party sites, given that equipment costs do not increase significantly with capacity. In essence, the more customers served by a particular exchange or at a particular site, the higher the capacity of the equipment that can be installed and the lower the costs (on a per customer basis).

9.23 Europe Economics produced a bottom up model for Oftel in 2000 that estimates the cost volume relationships for, inter alia, the access network.[82] The estimated increase in cost for the access network, in response to an increase in output can be broken down as follows:

- duct – 5%;
- copper – 35%;
- fibre – 22%; and
- operating costs – 48%.[83]

[82] The model explored cost-volume relationship (*i.e.,* the % increase in costs resulting from increase in output).

[83] Oftel's Leased Lines Consultation Document, April 2003, paragraph B.188.

9.24 These cost-volume relationships confirm the existence of economies of scale in the provision of terminating and trunk segments. ComReg has considered the extent to which it appears that eircom enjoys larger economies of scale than other operators.

9.25 The market share data available to ComReg indicates that, while eircom might not always be the only supplier of leased lines and specifically terminating segments in a particular area, it always has more capacity (carrying more traffic), which allows it to enjoy greater economies of scale. It is able to make greater use of equipment and facilities, or to use higher capacity equipment and facilities, thereby reducing its costs on a per connection basis in both cases.

9.26 In the majority of the territory in Ireland, only eircom provides terminating segments. In such areas, only eircom enjoys economies of scale. In contrast, other operators must buy their terminating segments from eircom, with eircom not facing competitive pressure to pass on the benefits from its economies of scale to its customers. Since eircom is the only supplier in a large number of areas, ComReg is of the view that, overall, eircom enjoys significantly greater economies of scale in the provision of terminating capacity when compared to other operators.

9.27 ComReg considers that the economies of scale that eircom is able to exploit are the source of a significant cost advantage and of market power for eircom in the provision of terminating segments.

9.28 Terminating capacity can be used to provide retail services other than leased lines. For example, such connections can be used to provide voice services over its ubiquitous copper network. ComReg believes that eircom enjoys larger economies of scope than other operators. It offers a wider range of products allowing it to spread the cost of common wholesale terminating inputs over a larger range of products, and it carries larger volumes of such products.

**Vertical integration**

9.29 eircom's market share at the retail level is significant (see section 6). eircom self-supplies all terminating and trunk capacity necessary to supply its retail services, effectively foreclosing a significant portion of the market for the provision of wholesale capacity to its competitors. The resultant high and predictable demand for capacity further facilitates eircom's exploitation of economies of scale.

**Potential competition**

9.30 ComReg is of the view that it is not economically feasible for any other operator to replicate the scope of eircom's terminating segment network within the timeframe of the review. There has been minimal network build in Ireland in the recent past.

9.31 As indicated by market developments in other Member States, ComReg is of the view that another source of potential competition will arise from the introduction Symmetric DSL (SDSL) technology. SDSL technology is currently being trialled in Ireland however it is not publicly available for the provision of symmetric capacity. SDSL is a technology which can be used to provide symmetric retail services which

can be either contended or uncontended. Any such contention is likely to be implemented in the DSLAM which is likely to be at the boundary or within the terminating segment. In this context ComReg considers that SDSL is a technology which can be used to provide elements of terminating segments and ComReg will monitor its development and impact.

9.32 In response to one respondent's comments, ComReg considered whether mobile network operators pose a competitive threat in the wholesale terminating market. As noted earlier the significant investment associated with network roll out, in addition to time and planning required to profitably offer terminating segments to itself or third parties minimizes any competitive threat pose by MNOs in the relevant markets. ComReg is unaware of any mobile operator's intentions to enter the market. Thus it is concluded that trunk and terminating segment providers act independently to mobile operators.

9.33 ComReg is of the view that the impact of the limited amount of potential competition outlined above will not have sufficiently material impact on the market within the timeframe of this review to reduce the advantages which eircom currently enjoys.

9.34 In its consultation, ComReg took the preliminary view that eircom had SMP in the wholesale markets for terminating segments.

## Market Analysis for trunk segments

**Market shares**

9.35 As noted previously, in the market analysis of terminating segments, trunk segments are not purchased in isolation. Wholesale leased lines are predominantly sold and purchased end-to-end. ComReg will, therefore, review market share in terms of the number of end–to-end circuits and the relative revenue earned.

9.36 As can be seen in the figures above, eircom currently hold over 85% market share in terms of the number of circuits and approximately 80% in terms of revenue. The difference in market share measured by circuits as compared to revenue indicates that eircom has higher market share in the provision of lower capacity circuits, which earn lower revenue per circuit.

9.37 The evidence indicates that eircom's market share has not only been well over 50% (whether calculated by revenue or volume) of the relevant market, but has also remained stable over time[84]. The market share data strongly suggests that eircom is dominant.

**Pricing**

9.38 Wholesale terminating and trunk segments can be purchased at the wholesale level only as part of a wholesale leased line product (priced on a 'retail-minus' basis) or as a PPC (priced on a cost orientated basis) ComReg has considered (in the market analysis of terminating segments) whether the price developments for wholesale leased lines since 1999 reflect trends that might indicate that competition in the market is effective. The data indicates that there have been no price adjustments by eircom in response to

[84] ComReg notes that some circuits may be sold more than once, for example a fixed line OAO may purchase wholesale capacity from eircom and then sell that capacity to a mobile operator. Therefore the importance of eircom's market share is understated.

market entry. As such, it would appear that little pressure has been exerted on eircom's prices.

**Technological advantages**

9.39 ComReg does not believe that any operator enjoys advantages in this respect. The technology used to supply both wholesale trunk segments is mature and no operator enjoys an exclusive or preferred relationship with the entities supplying the necessary inputs (in terms of services, including trenching construction, and products, including cables).

**Infrastructure advantages**

9.40 Additionally, ComReg has considered the extent to which it is economically feasible and rational to replicate eircom's underlying trunk network. The data provided to ComReg during this review indicates that only two entities other than eircom have invested in trunk facilities in Ireland. The most extensive network is operated by EsatBT and is built around fibre rings. The coverage of these networks indicates that other operators are not in a position to provide trunk segments to replicate much of the coverage of eircom's network.

9.41 In addition, the ubiquity of eircom's network means that there are a large number of areas in which little or no infrastructure competition to eircom currently exists. ComReg takes the view that, given the sunk costs of extending networks to redress this coverage imbalance, it is unlikely that greater competition will develop in the timeframe of this review. This is looked at in further detail in the review of potential competition.

**Barriers to entry**

9.42 As discussed, ComReg does not believe that the own use of trunk capacity by other operators is likely to be viable in many cases, given the small absolute demand on many routes and the small scale of demand relative to existing capacity on those routes with higher levels of absolute demand. When combined with the significant sunk costs of, and time necessary for, additional network build, ComReg believes that market entry is unlikely to occur on a large scale. OAOs which have built out networks have done so with in conjunction with a national utility operator and have thus avoided barriers such as wayleave problems.

**Economies of scale and scope**

9.43 In relation to trunk segments, ComReg believes that the provision of trunk capacity is characterised by large economies of scale. There are large fixed (and sunk) costs associated with the provision of such capacity. Once these large sunk costs have been incurred, the cost to operators of supplying additional circuits or greater bandwidth over the infrastructure is marginal.

9.44 Europe Economics produced a bottom up model for Oftel in 2000 (see above) that estimates the cost volume relationships for, inter alia, the access network.[85] These cost-volume relationships confirm the existence of economies of scale in the provision of terminating and trunk segments. ComReg has considered the extent to which it appears that eircom enjoys larger economies of scale than other operators.

9.45 Given the relative number of trunk segments that eircom provides (when compared to the number provided by other operators), ComReg takes the view that eircom is in a position to exploit these scale economies to a significantly greater extent than any other operators active in the market. As such, ComReg takes the view that it is likely that eircom's position in the wholesale trunk capacity market is substantially strengthened by its ability to exploit economies of scale.

9.46 Economies of scope arise when some of the costs of supply can be shared with other products, reflecting the range of products and services with which some common costs are shared, and the volume of these various products and services.

9.47 Operators use their trunk networks to carry a range of products including wholesale leased lines, retail leased lines and voice core network services. ComReg has no reason to believe that eircom's use of trunk segments to provide wholesale segments accounts for a greater proportion of total trunk capacity than the proportion of trunk segments used by the other network operators for the same purpose. However, it might be that eircom's significantly greater overall volume of traffic makes it more able to exploit the available economies of scope than the other operator.

**Vertical integration**

9.48 eircom's market share at the retail level is significant (see section 6). eircom self-supplies all trunk capacity necessary to supply its retail services, effectively foreclosing a significant portion of the market for the provision of wholesale capacity to its competitors. The resultant high and predictable demand for capacity further facilitates eircom's exploitation of economies of scale.

**Potential competition**

9.49 ComReg considered the potential for new operators to enter the market for wholesale trunk segments in the timeframe of this current review. ComReg is of the view that it is not economically feasible for any other operator to replicate the scale of the incumbent's trunk capacity network. There has been minimal backbone network build in Ireland in the recent past; as evidenced by the comparison of the telecommunications network infrastructure in 2000 and that in 2003 – as can be seen by Figures 6.6a and 6.6b above in the market analysis of the minimum set of leased lines, which compares backbone build in 2000 to backbone build in 2003.

9.50 However, there has been a large number of small government funded projects which aim to increase the availability of alternative telecommunications network

[85] The model explored cost-volume relationship (*i.e.,* the % increase in costs resulting from % increase in output).

infrastructure (both terminating and trunk segments). Details of these projects are outlined in the Market Structure in section 3 above.

9.51 ComReg also notes that PPC incentivise operators to build out their own networks, however the effect of this infrastructure competition is unlikely to be sufficiently significant to impact of eircom's market power within the timeframe of the review.

9.52 ComReg considers that the availability of alternative infrastructure, from Government Funded projects will have a positive impact on the competitive dynamics of the wholesale terminating and trunk segments markets. However, this is unlikely to be significant in the timeframe of this review. If the competitive dynamics change within the immediate future, ComReg will review the market to analyse any developments.

9.53 In relation to one respondent's comments on the appropriateness the boundary split between terminating and trunk segments ComReg examines the potential impact of new infrastructure development. However, ComReg also recognises that, despite the fact that for a number of years there has been no shortage of capacity on alternative infrastructure, its impact on market power has been negligible. It was the respondent's view that the trunk segment is sufficiently competitive. However, from the data available to ComReg, eircom currently has a share of 90% for trunk and terminating segments market (measured by revenue). Over 66% of eircom's traffic derived from number of key national routes[86], which would indicate that it has a market share (measured by revenue) well in excess of 40% on these specific routes. ComReg acknowledges that this may change beyond the period of this review.

9.54 ComReg is unaware of any mobile operator's intentions to enter the market. Thus it is concluded that trunk and terminating segment providers act independently to mobile operators.

9.55 Aurora provides dark fibre to suppliers of trunk and terminating segments. ComReg does not consider that the provision of unlit fibre is a substitute for trunk segments.

9.56 ComReg notes that there is some potential competition in the wholesale trunk segment markets. However, ComReg is of the view that the impact of the limited amount of potential competition outlined above will not have sufficiently material impact on the market within the timeframe of this review to reduce the advantages which eircom currently enjoys.

9.57 In its consultation, ComReg took the preliminary view that eircom had SMP in the wholesale markets for terminating segments.

***Consultation questions 19 & 20***

**Q. 19. Do you agree with ComReg's preliminary market analysis of the wholesale trunk segments? Please support your response with evidence**

**Q. 20. Do you agree with the above preliminary conclusions regarding market analysis? Please provide evidence to support your response.**

[86] Dublin to Cork, Galway, Limerick and Waterford.

***Responses to consultation questions 19 & 20***

9.58 Three of four respondents agreed that the conclusions reached by ComReg were correct and that eircom held a dominant position in the markets for terminating and trunk segments in Ireland.

9.59 However, one respondent did not agree with ComReg's market analysis of the wholesale trunk segment market. It noted that ComReg's analysis of *The SMP Guidelines* on market analysis was correct. However, it submitted that the quality and depth of ComReg's analysis of the market structure was incomplete, as it took no account of the mobile operators, and was superficial. Additionally, it noted that the market analysis was deficient, because it was based primarily on historic data and did appropriately reflect the impact of changes which have taken place over the past twelve months (*i.e.* implementation of the MANs and eircom's launch of PPCs).

9.60 **Market Shares.** The respondent was concerned by the approach adopted by ComReg in its assessment of market shares. It took the view that the calculation was based on a subset of providers, excluding eircom's competitors. It argued that, over the past two years, the mobile operators had moved significantly from being a purchaser of leased lines to an almost exclusive use of own network build. Additionally, the impact of the MANs was not dealt with in any comprehensive manner and the likelihood that they would compete vigorously in the high bandwidth leased line market was ignored. It, therefore, concluded that it was inappropriate for ComReg to rely on the current Quarterly Leased Line Market Analysis to draw conclusions about the trunk segment market.

9.61 Furthermore, it submitted that the quality of data actually received was poor; noting the dramatic variations in the volumes of OAO leased lines. Additionally, it noted that the market shares clearly indicated that the number of wholesale circuits sold in the overall market did not flow through into OAO retail leased lines. It is clear that most wholesale leased lines are purchased in lieu of own network build or to provide customer access for alternative services.

9.62 **Pricing**. One respondent claimed that ComReg was incorrect to conclude that stable product pricing indicated that little pressure had been exerted on eircom to reduce its prices, which would indicate that the operator had market power. The respondent argued that eircom suffered a significant decline in market share as a result of this pricing stability. Further, it stated that the introduction of and significant movement to channelised circuits at both the retail and wholesale level which had resulted in significant price reductions in real terms had also been ignored.

9.63 All respondents agreed with ComReg's conclusion that no operator enjoyed advantages in respect of technology.

9.64 **Infrastructure advantages** - One respondent questioned ComReg's analysis of trunk infrastructure advantages and its conclusion that only two entities other than eircom had invested in trunk facilities in Ireland. The respondent pointed to Esat, ESB, Aurora and the three mobile network operators. It suggested that, had ComReg undertaken a more robust analysis, it would have concluded that the trunk market was competitive. In the respondent's view, it was clear both that there was competition in the trunk segment market and that this was likely to both continue and develop further over the timeframe of the review. The respondent submitted that MNOs should be

taken into account, as they continued to migrate from leased lines supplied by eircom to "own build". The respondent, therefore, suggested that the high bandwidth market is competitive and did not require regulatory intervention.

9.65 **Barriers to Entry** - One respondent disagreed that self-provision of trunk capacity by other operators was not likely to be viable in many cases, arguing that self-provision by MNOs has caused a major transfer from low bandwidth circuits to "own build" in the segment over an 18 month period.

9.66 **Economies of Scale and Scope** – One respondent queried the significance of the economic model built for Oftel for the Irish market, and questioned why eircom's economies of scale on major routes should differ from those of other operators.

9.67 **Vertical integration** – one respondent noted that ComReg had omitted major self providers of services, namely the MNOs, rendering the analysis of vertical integration in relation to trunk segments incomplete.

9.68 The respondent believed that ComReg's proposal to combine the markets for low and high bandwidth products distracted from the clear evidence that eircom did not have a market share anywhere close to 50% in the high bandwidth market.

9.69 This respondent concluded by stating that it did not agree with ComReg's findings, because the use of historical data and the acknowledged lack of clarity on the market interpretation of the terminating and trunk split, clearly demonstrated that ComReg's analysis was fundamentally flawed. It argued that using data for the number of end-to-end circuits to determine market share for trunk segments was unsustainable, not least because not all leased lines had a trunk segment.

9.70 However, another operator believed that eircom was dominant in both the markets for terminating and trunk segments of wholesale national leased lines. It stated that eircom had held stable market share in excess of 80% for several years. Pricing had shown no evidence of any competitive threat to eircom for almost four years. OAOs were largely dependent on eircom infrastructure for the provision of leased lines.

9.71 It submitted that entry barriers for terminating segments were higher than for trunk segments, as a lower return was available. eircom's network was ubiquitous and eircom enjoyed extensive sunk-cost advantages. Additionally, LLU take-up was still in its infancy. As a consequence, SDSL would not present an opportunity for OAOs to challenge eircom's local network ubiquity within the timeframe of the review.

9.72 The respondent argued that, despite many years of infrastructure competition, there were barriers to entry and OAOs had not been able to develop networks that would compete with eircom in an appreciable way. The respondent stated that that the Government has recognised this in attempting to facilitate the development of such competing infrastructure through the various initiatives like the MANs. They were only at the initial stages, however, and would not have had any significant impact on competition within the review timeframe. eircom would continue to enjoy the advantages of large sunk cost and economies of scope and scale.

9.73 Another respondent believed that, on the evidence, it was obvious that eircom is dominant in the trunk segments market. Limited current and expected roll out by

alternative operators meant that dependence on eircom's wholesale leased lines services would continue over the next few years.

9.74 The respondent stated that it agreed with ComReg that eircom was dominant in the markets for the provision of wholesale terminating lines and wholesale trunk segments. It had significant market share in wholesale leased lines and its prices have not shifted significantly over time. Further, eircom had massive infrastructure and economies of scale and scope advantages (which were significant barriers to entry). The respondent agreed with ComReg that there would be significant sunk costs for any operator wishing to roll out network to compete in the trunk or terminating segments markets and that this would be highly capital intensive and risky. Further, they also agree that alternative infrastructure (government funded projects) was unlikely to have an impact on eircom's dominance over the time period of the review.

9.75 The respondent noted that it, therefore, agreed that eircom should be designated as having SMP in the wholesale trunk and terminating segment markets.

***ComReg's Position***

9.76 In relation to market share calculations, one respondent was concerned that ComReg had not included all the relevant players, and questioned ComReg's source data. As noted above, ComReg has subsequently collected further data, confirming eircom holds approximately 90% of the markets for terminating and trunk segments (measured by the number of circuits). The same respondent pointed out the large number of wholesale circuits (as compared to the number of retail circuits), indicating the use of wholesale leased lines *in lieu* of own infrastructure build or the provision of alternative retail services. ComReg supports the view that terminating and trunk segments are used for own network build and that wholesale demand is not solely derived from the retail leased line markets.

9.77 The same respondent also claimed that ComReg's market share data was inaccurate, as it was based on end–to-end services, rather than the individual relevant product markets. As noted above, wholesale leased lines are purchased on an end-to-end basis in Ireland. Currently, trunk and terminating segments are not supplied separately. Industry interviews with leased line providers made it clear that data could not be collected with accuracy for trunk and terminating segments. Accordingly, ComReg has based market shares on end-to-end circuits sold, as data was not available in isolation on the number of trunk or terminating segments sold or associated revenue.

9.78 ComReg noted in Section 8 that it was more appropriate to define separate markets for terminating and trunk segment rather than a single market for leased lines in line with *the Relevant Markets Recommendation* and national circumstances. A market for terminating segments, regardless of where one draws the precise boundary, would be dominated by local access infrastructure, this was outlined in detail above. There are well established barriers to entry associated with local access infrastructure, associated with large sunk costs and economies of scale, scope and density. As such, it is unlikely that material facilities-based competition will emerge in the market for terminating segments, in the foreseeable future.

9.79 The market for trunk segments, however, has potentially lower barriers to entry. Indeed, there is a certain level, albeit limited, of investment in infrastructure, between urban centres. However, this is far from sufficient to describe the trunk market as either competitive or prospectively competitive within the timeframe of the review. It is important to recognise the need for a prospective analysis and to identify the potential impact of the Government funded networks. ComReg also recognises that, despite the fact that for a number of years there has been no shortage of capacity on alternative infrastructure, its impact on market power has been negligible. eircom currently has a market share of 90% for trunk and terminating segments with over 66% of its traffic carried over a number of key national routes (where there is also the presence of OAO network infrastructure)[87], which would indicate that it has a market share well in excess of 50% on these specific routes. ComReg acknowledges that this may change beyond the period of this review and thus the trunk market should be monitored and reassessed in light of market developments.

9.80 ComReg notes that presently trunk segments are not sold in isolation and therefore that the market shares are correct. Furthermore ComReg notes that it is appropriate to maintain current obligations in the trunk segment market, as eircom may be in a position to leverage its dominance from the terminating segment market, where it is in a more dominant position.

9.81 As discussed in the analysis of the scope of the review (section 3), ComReg takes the view that self-supplying MNOs are not considered to be providers of the relevant product. Accordingly, they are not included in the market share calculation.

9.82 ComReg notes that, since the initial consultation, dark fibre has been purchased and used for the provision of retail leased lines over the MANs. ComReg has taken these circuits into consideration in the market definition and its calculation of market share. It is important to note that, reflecting a technology neutral approach, the provision of leased line circuits is considered independently of the infrastructure over which they are provided. The future impact of the MANs is considered further, below.

9.83 As noted in *The SMP Guidelines,* an undertaking shall be deemed to have SMP if it enjoys a position of economic strength allowing it to behave to an appreciable extent independently of competition, customers and ultimately consumers. ComReg notes that eircom's wholesale leased line prices have remained constant and market share has remained stable, providing a strong indication of eircom's ability to operate independently. ComReg recognises that the introduction of channelised circuits enabled the aggregation of capacity and resulted in a lower average cost for capacity. However, ComReg notes that only a certain group of consumers are in a position to avail of such channelised products. Additionally, ComReg highlights that the channelised product was mandated and not introduced in response to competition.

9.84 One respondent claimed that ComReg failed to consider the three mobile network operators in addition to Aurora's network when analysing infrastructure advantages. Currently, mobile networks do not provide services to third parties. As such, these networks have been considered in terms of potential competition. As outlined above, circuits self-provided by MNOs are not included in the relevant market. Additionally, in response to the respondent's submission that, had ComReg considered self

[87] Dublin to Cork, Galway, Limerick and Waterford.

provision by MNOs, eircom would have a market share of 25%, ComReg holds that this would not be the case if self-provision by *all* operators is considered since this would require that all of eircom's point to point capacity (including its conveyance network) be included.

9.85 The same respondent was of the view that ComReg's omission of MNOs as vertically integrated operators rendered its analysis incomplete. ComReg strongly disagrees with this view. Firstly, ComReg notes that MNOs are not within in the relevant product market. Further, MNOs do not offer a wholesale product to third parties and, thus, are not a vertically integrated company in the market for leased lines and do not operate in the leased line market. Additionally, this would not undermine the market power eircom itself enjoys as a result of being vertically integrated. ComReg notes eircom's dominant position in the low bandwidth retail market, effectively foreclosing a significant portion of the equivalent wholesale market.

9.86 Additionally, ComReg notes that Aurora's network is limited to the provision of dark fibre. Dark fibre provides an infrastructure with which the relevant downstream products can be delivered. However, ComReg is of the view that the provision of dark fibre does not fall within the scope of the relevant markets. With respect to one respondent's comments, ComReg considers Aurora's infrastructure relevant in that it can facilitate the provision of leased lines in the event that an operator lights fibre. ComReg recognises that the availability of dark fibre affects eircom's infrastructure advantage, by lowering barriers to entry into the market for trunk and terminating segments.

9.87 In conclusion, ComReg holds that, despite the existence of some infrastructure competition on trunk routes, the ubiquity of eircom's network is unmatched, even taking into consideration the combined network infrastructure of all OAOs. Given the sunk costs required to extend existing networks to replicate eircom's network reach, it is unlikely that any infrastructure advantage currently enjoyed by eircom will be undermined significantly within the timeframe of this review. eircom's network advantage is even starker in the market for terminating segments where costs of extending the network are even greater.

9.88 One respondent highlighted that ComReg had not considered the extent to which network build by MNOs indicated low barriers to entry to the trunk segment market (particularity for low bandwidth segments). As noted earlier, ComReg does not consider that circuits which are self-provided by MNOs are equivalent to terminating and trunk segments. ComReg is of the strong view that there are significant barriers to entry which preclude supply-side substitution from the mobile operators.

9.89 Barriers to entry are more significant on many routes where there is small absolute and relative demand. ComReg reiterates that this, in combination with the significant sunk costs and time necessary for additional network build, minimises the likelihood that there will be sufficient entry into the market for trunk segments to undermine eircom's dominant position.

9.90 It terms of ComReg's analysis of economies of scale and scope, one respondent questioned the use of the economic model developed for Oftel by Europe Economics (see above for details) and its relevance to the Irish market. ComReg believes that the cost-volume relationship is similar in many Member States and, thus, is relevant to the

Irish market. The model provides a good indication of the significant economies of scale associated with the provision of trunk segments (*e.g.* the model shows that there where output increases; ducting represents only 5% of the total incremental cost). As eircom currently has a ubiquitous trunk network, it is in a strong position to exploit these economies of scale to reinforce its dominant position. Further economies are enjoyed by eircom in relation to the number of trunk segments provided. Additionally, economies of scope also benefit eircom, as a major provider of a range of services, which are all carried over the same infrastructure. Due to eircom's significantly greater overall volume of traffic (from retail leased lines in addition to other services), it is better able to exploit the available economies of scope than OAOs.

9.91 Finally, one respondent noted that as the retail high bandwidth market is sufficiently competitive, the corresponding wholesale market should also be declared to be competitive. ComReg does not agree with this view as the wholesale and retail markets, even though linked, are discrete markets. From its analysis of the relevant wholesale product markets, ComReg has identified that eircom is in a position to be able to act independently of its competitors, customers and ultimately consumers.

***Conclusion***

9.92 ComReg has reached the conclusion that eircom is dominant in the national markets for the provision of wholesale terminating and trunk segments. These conclusions are particularly based on:

- eircom's market shares are significantly in excess of 50%
- infrastructure advantage and network ubiquity;
- the barriers to entry;
- eircom's ability to exploit economies of scale and scope that cannot be replicated by others;
- eircom's vertical integration and
- limited impact of potential competition

9.93 ComReg concludes that the structure of the markets for trunk and terminating segments is conducive to eircom charging rates above the competitive level, if unregulated. As noted above, there is no means by which customers (who are also competitors in the related downstream market) can respond to a constant price increase, given the lack of a significant alternative provider. Thus, ComReg deems that eircom is in a position of economic strength affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately consumers.

# 10 Designation Of Undertakings With Significant Market Power in the Wholesale Market

10.1 Having regard to the sections above, particularly Sections 8 and 9, ComReg is of the view that, in accordance with the *Framework Regulations*:

*eircom Ltd should be designated as having SMP in the market for wholesale terminating segments of leased lines.*

*eircom Ltd should be designated as having SMP in the market for wholesale trunk segments of leased lines.*

10.2 A reference in this section to any given undertaking shall be taken to include any and all undertakings which are affiliated with, or controlled by, the undertaking in question.

# 11 Proposed Wholesale and Retail Market Remedies

## SMP Markets

11.1 As noted above in Sections 7 and 10, ComReg proposes to designate eircom as having SMP in the following relevant markets:

- Retail leased lines in the minimum set;
- Wholesale terminating segments
- Wholesale trunk segments

## Competition problems

11.2 As a result of the preliminary finding that eircom has a dominant position in the above markets; ComReg is obliged to apply remedies necessary to address the competition problems arising from that dominance, and in the sections below ComReg investigates the competition problems that arise. The competition problems fall into two broad categories:

- Leverage
- Single market dominance

## Leverage: Vertical

11.3 Vertical leverage "may arise when a firm controls an input that is essential for a potentially competitive downstream industry. The upstream bottleneck owner can then alter downstream competition by denying access or limiting access to its input."[88] As vertical leverage can distort market power in potentially competitive markets, it is usually detrimental for overall welfare. In the Irish context, eircom is a vertically integrated operator providing services in both wholesale and retail markets. Given ComReg's preliminary finding of eircom's dominance in the wholesale markets, ComReg needs to address any competition problems such as the transfer of market power to adjacent downstream retail markets, potentially competitive, retail markets. Because eircom is dominant in both the wholesale terminating and wholesale trunk markets, it is in a position to control the use of inputs (e.g. Partial Private Circuits) that are essential for a potentially competitive downstream industry.

11.4 With regard to designing remedies, it is helpful to look at three types of vertical leveraging strategies and the competition problems arising from each:

- Denial of access
- Leveraging by non-price means
- Leveraging by means of pricing

[88] Patrick Rey and Jean Tirole (2003, p.8) "A Primer on Foreclosure", forthcoming Handbook of Industrial Organization, volume III, editors Mark Armstrong and Bob Porter. Available on http://www.univtsel.fr/idei/Commun/Article/Tirole/primer20030716.pdf (last visited)

### ***Denial of access***

11.5 eircom has SMP on the wholesale markets and may attempt to leverage its market power by **denying access to or refusing to deal** with undertakings operating downstream and competing with eircom's retail arm or affiliates.

11.6 eircom may also attempt to leverage its market power by being prepared to supply a good or a service only on unreasonable terms, which could be construed as refusal to deal.

11.7 Evidence available to ComReg indicates that problems of refusal to deal leading to constructive denial of access have occurred in the markets under review in the past. OAOs have not been able to gain access to wholesale inputs by means of commercial negotiation. ComReg points to its many interventions during 2002, 2003 and 2004 mandating and shaping the Partial Private Circuit product, terms and conditions, and processes. ComReg has also had to intervene with regard to the wholesale leased lines product set by introducing the Carrier Services Service Level Agreement (SLA) and, in 2003, the 'in situ' transfer process for leased lines.

11.8 In cases where denial of access gives rise to competition concerns in downstream retail markets, Regulation 13 (Access) of the *Access Regulations* enables ComReg to impose an obligation of access to, and use of, specific network facilities on an undertaking designated with SMP in the relevant markets. Regulation 11 (non discrimination) can also be used to mandate access in certain circumstances.

### ***Leveraging by non-price means***

11.9 Where mandated access is required, there are increased incentives for SMP operators to engage in non price leveraging strategies. An SMP operator could engage in one or more of the following non-price leveraging strategies:

11.10 **Discriminatory use or withholding of information** – where the SMP operator provides its retail arm with information it does not provide to other downstream undertakings, or where it refuses to supply information which is necessary to take up the wholesale product and/or to sell the retail service. As an example, this would occur if eircom refused to provide its retail competitors information about changes in its network topology. Indeed during the PPC Forum ComReg had to intervene on occasions to ensure that OAOs were given clear sight of handover points and other crucial network information. In the case of Wholesale Leased Lines, the development of a SLA regime partially stemmed from the fact that OAOs were not in a position to manage customer expectations regarding delivery in the same way as eircom retail could through its dealings with eircom operations. Regulations 13 (Access), 10 (Transparency) and 11 (Non-Discrimination) of the Access Regulations enable ComReg to impose obligations that deal with this problem of non-price leveraging.

11.11 **Delaying tactics**[89] - where an SMP undertaking supplies or provides information about an upstream input to downstream competitors at a later date compared to the retail affiliate of the SMP undertaking. Such behaviour could give an SMP undertaking a first-mover advantage in the potentially competitive downstream retail market and can amount to constructive refusal to deal. In the case of Wholesale

[89] Also known as a 'provisioning squeeze'.

Leased Lines, the SLA regime was introduced specifically to give delivery times for OAO orders in response to delays experienced by them. At the time such delays did not appear to be as significant for eircom's retail arm. ComReg was also forced to intervene to mandate the provision of SLA penalty statements within specific timeframes as delays were impacting OAOs' ability to manage their back to back retail SLAs. Regulations 10 (Transparency) and 11 (Non-Discrimination) of the Access Regulations enable ComReg to impose obligations that deal with this problem of non-price leveraging.

11.12 **Bundling/Tying** – this is where the sale of one product is conditioned on the sale of another product. An SMP operator may require an OAO to buy extra elements that are not necessary for the provision of the service and may not be required to be purchased by downstream arms. During the PPC forum, ComReg had to ensure that the product was designed in such a manner that OAOs could use as much of their own infrastructure as possible and purchase only access to required elements from eircom in as efficient a manner as possible. Regulations 13 (Access), 11 (Non Discrimination) and 10 (Transparency) of the Access Regulations enable ComReg to impose obligations that deal with this problem of non-price leveraging.

11.13 **Undue requirements** – these typically occur as contract terms which require a particular behaviour of a downstream competitor but are unnecessary and have the effect of raising rivals' costs or restricting rivals' sales. Examples may include security payments, bank guarantees, or information about the competitors' customers beyond the extent which might be economically or technically justified. In respect of both PPCs and Wholesale Leased Lines, ComReg has been required to chair or make decisions in industry fora to agree terms and conditions so as to ensure they are not overly onerous. OAOs have asked ComReg to intervene on specific terms and conditions and have rejected eircom's proposals. Regulations 13 (Access), 10 (Transparency) and 11 (Non-Discrimination) of the Access Regulations enable ComReg to impose obligations that deal with this problem of non-price leveraging.

11.14 **Quality discrimination** – the effect is to raise rivals' costs and/or restrict its rivals' sales. This may arise where an SMP undertaking gives priority to its own traffic at network bottlenecks or process decision points. ComReg has been forced to intervene to require eircom to deliver a resilient PPC product to give OAOs the service assurance available to eircom's downstream arms. In the case of wholesale leased lines, the requirement for the SLA regime came from issues raised by OAOs in respect of the provision, speed of fault management and resolution provided by eircom to OAOs and eircom's retail arm. Regulations 13 (Access) 11 (Non-Discrimination) and 10 (Transparency) of the Access Regulations enable ComReg to impose obligations that deal with this problem of non-price leveraging.

11.15 **Strategic design of product characteristics** – where an SMP undertaking may, for example, apply standards that are easier for its own retail affiliate to meet than for its downstream competitors. This may also occur where the SMP operator does not allow the OAO to specify the requirements most suitable for them and instead confines the product to that offered to a retail arm or designed by the SMP operator. ComReg has had to intervene on numerous occasions to ensure OAO requirements are taken into account when designing products and processes and in the case of PPCs, as an example, intervened to mandate the product description following OAOs refusal to accept eircom's proposals. Another example is provided by the delay in

developing the PPC resilience product, which means that eircom clearly have an advantage over OAOs in the target retail market. Regulations 13 (Access) and 11 (Non-Discrimination) of the Access Regulations enable ComReg to impose obligations that deal with this problem of non-price leveraging.

11.16 **Undue use of information about competitors** – may occur where an SMP undertaking on the wholesale market uses information about rivals' wholesale demands to influence its marketing strategies in its own retail affiliate. This could have the effect of raising rivals' costs and/or restricting competitors' sales. In the case of wholesale products, eircom's wholesale arm has information about customers of OAOs and this should not be shared with eircom's retail arm as to do so would provide eircom's downstream arm with an advantage in the retail market. ComReg, when mandating the 'in situ' transfer process for leased lines, was forced to intervene to prevent such a situation arising. Regulations 11 (Non-Discrimination) and 10 (Transparency) of the *Access Regulations* enable ComReg to impose obligations that deal with this problem of non-price leveraging.

***Leveraging by pricing means***

11.17 Currently the charges which eircom can apply are regulated both at a wholesale and a retail level and ComReg believes that this regulation has to date ensured that the competition problems set out above are not evident in the Irish market. However the withdrawal of such obligations would likely heighten incentives for eircom to engage in the behaviour described above. Even with the regulation of prices, ComReg has been forced on several occasions to intervene and direct prices for PPCs and their processes.

11.18 **Margin squeeze** - a vertically integrated operator dominant in an upstream wholesale market may engage in pricing that gives rise to a 'margin squeeze'[90]. A margin squeeze may harm competition in the downstream market in several ways. First, the integrated operator might choose a combination of input and downstream prices that meant that an efficient downstream competitor could not earn a normal profit and so exited the market. Second, a margin squeeze could undermine a downstream competitor's ability to compete even without forcing exit. This might occur, for example, where the downstream arm of the integrated operator and the downstream competitor produce differentiated products. In this case the integrated operator might profit from setting an input price high enough to weaken downstream competition (thereby raising profits) but not high enough to force exit, as that might entail fewer sales of the inputs (and thereby damage profits upstream).

11.19 In the case where the vertically integrated operator is able to access economies of scale and scope that are not so readily available to operators competing at the downstream level, then the availability of those economies to the integrated operator may bring extra pressure to bear on the margins available for competing downstream

[90] A margin squeeze is sometimes referred to as a price squeeze. It occurs when a dominant provider supplies an upstream (e.g. wholesale) product A which is used in combination with a downstream (e.g. retail) component B to produce a final service or product A+B; where undertakings competing against A+B would provide their own alternative to B; and the implicit charge by the dominant provider to itself for B (i.e. the difference between the prices at which it supplies A+B and A only) is so low that an efficient competitor cannot profitably compete against A+B.

operators. Similarly, if the vertically integrated operator is a multi-product firm operating in several markets, it may have incentives to set prices in such a way as to ensure that the product in question is making little or no contribution to common costs. Downstream competitors with smaller product ranges may have to recover a much large proportion of common costs from this product and so be unable to compete on price.

11.20 The prevention of margin squeeze, with the aim of promoting competition, may require the application of remedies from the *Access Regulations* and in particular Regulation 14 (price control and cost accounting) and may also require Regulation 10 (Transparency) and Regulation 12 (accounting separation) as ancillary remedies.

11.21 **Price discrimination** - margin squeeze can sometimes considered as a form of price discrimination, where the vertically integrated operator is charging a higher price to downstream competitors than implicitly charged to its own retail affiliate, i.e. discrimination between internal and external provision. In this context Regulation 11 (non-Discrimination) of the Access Regulations is an additional Regulation relevant for vertical leveraging that enables ComReg to impose obligations that deal with the problem of price discrimination.

11.22 **Predatory pricing** – In the extreme, the integrated operator might set downstream prices below the cost of end-to-end production, in which case a margin squeeze might also amount to predation. Predation "occurs, inter alia, where a dominant firm sells a good or service below costs of production for a sustained period of time, with the intention of deterring entry, or putting a rival out of business, enabling the dominant firm to further increase its market power and later its accumulated profits."[91] Three conditions are required to be satisfied to demonstrate predatory pricing:

- Price is below costs
- Competitors driven out of market or excluded
- Undertaking able to recoup its losses

11.23 In practice it is difficult to prove predation, especially in markets where there is considerable change, high fixed costs, multi-product firms and long-run business cases. Regulation 11 (non-Discrimination) of the *Access Regulations* enables ComReg to impose obligations that deal in part with the problem of predation. However, to be effective it would likely require as an ancillary remedy, Regulation 10 (Transparency) and furthermore, to assess whether prices may lie below cost it is likely that Regulation 14 (price control and cost accounting) as well as Regulation 12 (accounting separation) would be required.

11.24 **Unfair Cross-subsidisation** – an operator that is pricing below cost is also engaging in cross-subsidisation by charging higher prices in another market, or by anticipating higher prices in the same market. Regulation 11 (non-Discrimination) of the *Access Regulations* enables ComReg to impose obligations that deal with cross-subsidisation where it may harm competition through enabling a margin squeeze or predatory pricing. However, to be effective it may require as an ancillary remedy, Regulation 10 (Transparency). Furthermore, the need to assess whether prices may

[91] See Notice on the application of the competition rules to access agreements in the telecommunications sector (98/C 265/02) p.16.

lie below cost is likely to require the application of Regulation 14 (price control and cost accounting) as well as Regulation 12 (accounting separation).

## Leverage: Horizontal

11.25 The main case of interest here involves cross-subsidisation. An SMP undertaking may attempt to drive its competitors out of the market by setting a price below costs on the potentially competitive market, while losses are covered by profits from the SMP market. For example, eircom could set prices below costs for retail leased lines above the minimum set, and correspondingly set prices for leased lines in the minimum set above cost. It is likely that Regulation 14 (Price Control and Cost Accounting) as well as Regulation 12 (Accounting Separation) of the Access Regulations would be required to establish and correct such behaviour.

## Single market dominance

11.26 Where an SMP undertaking has single market dominance, this may lead to practices aimed at suppressing competition or exploitation. Single market dominance issues fall into three broad areas:

- Entry deterrence
- Exploitative behaviour
- Productive inefficiencies

11.27 An SMP undertaking might engage in **entry deterrence** practices to erect, or reinforce, barriers to entry to protect its SMP position against potential, or actual, entrants. For example, eircom might seek to raise customers' switching costs[92] in retail markets in the minimum set. This could take the form of contract terms that seek to raise costs. ComReg's intervention mandating 'in situ' transfer for leased lines addressed this issue as eircom had refused to provide such a feature. Regulations set out in Regulation 15 and Schedule 3 of the *Universal Service Regulations* and Regulations 13 (Access), 11 (Non Discrimination) and 10 (Transparency) of the *Access Regulations* allow ComReg to intervene on these issues.

11.28 An example **of exploitative behaviour** is excessive prices which enable a SMP undertaking to sustain profits higher than it could expect to obtain in a competitive market. ComReg has intervened on several occasions to direct the prices applicable to PPCs, and the pricing methodologies to be used for products in the market and without its intervention ComReg believes that eircom would have introduced excessive prices. The application of Regulation 14 (Price Control and Cost Accounting) of the *Access Regulations* may be required as a remedy in such circumstances.

11.29 Exploitation in the form of **excessive pricing** may also take place in retail markets. SMP operators may seek to earn higher profits and harm consumer welfare by charging excessive prices. Regulation 15 and Schedule 3 of the *Universal Service Regulations* set out obligations to be imposed once a finding of SMP has been made.

11.30 A consequence of dominance may be **productive inefficiencies** which arise when there is a lack of investment, and/or costs are excessive, or where quality is

[92] To avoid ambiguity, switching costs here refer to the cost associated with a change in supplier.

compromised relative to that which would be provided on a competitive market. Regulations set out in Regulation 15 and Schedule 3 of the *Universal Service Regulations* and Regulations 13 (Access), 11 (Non Discrimination), 10 (Transparency), 12 (Accounting Separation) and 14 (Price Control and Cost Accounting) of the *Access Regulations* allow ComReg to intervene on these issues.

## Available remedies and principles to be applied when selecting remedies

***Summary of consultation issue***

### Wholesale remedies

11.31 In its consultation document ComReg noted the available remedies that it can apply given designation of SMP in the relevant markets under review. The obligations set out in the *Access Regulations* relate to products and services offered at the wholesale level and are set out at Regulations 10 -14 of these Regulations. These include the obligations for:

- Transparency (Regulation 10);
- Non-discrimination (Regulation 11);
- Accounting separation (Regulation 12)
- Access to and use of specific network facilities (Regulation 13);
- Price control and cost accounting systems (Regulation 14).

11.32 ComReg also noted that it may be justified in imposing remedies other than those set out in the *Access Regulations* or in exceptional cases remedies that go beyond what is prescribed in the *Access Regulations*, provided that the approval of the European Commission is first obtained.

11.33 ComReg discussed the scenarios in which the available remedies could be applied. ComReg noted that when selecting appropriate remedies from the Access Regulations to address competition problems identified in the wholesale markets, ComReg has an obligation to consider the objectives of Section 12 of the Communications Regulation Act 2002 (to promote competition, to contribute to the development of the internal market, and to promote the interests of users) and of Regulation 6 of the Access Regulations (to promote efficiency, promote sustainable competition, and give maximum benefit to end users) and only imposed following consultation in accordance with Regulations 19 and 20 of the Framework Regulations. Furthermore, Regulation 9 of the Access Regulations requires that any obligations imposed by ComReg must be based on the nature of the problem identified, and be proportionate and justified in the light of the objectives laid down in Article 8 of the Framework Directive.

***Principles to be used when selecting wholesale remedies***

11.34 ComReg noted that having come to the preliminary conclusion that eircom had significant market power and having identified competition problems in the wholesale markets under review, it was obliged to implement remedies. Although it is unlikely that within the period of the review effective competition will develop in these markets, ComReg will choose appropriate remedies that will encourage efficient investment and innovation and further promote competition.

11.35 ComReg also noted that it selects remedies based on the nature of the problem identified. Where possible, consideration will be given to a range of remedies so that the least burdensome effective remedy can be selected, thus conforming to the principle of proportionality. ComReg highlighted its intention to carry out a Regulatory Impact Analysis (RIA).

11.36 Where ComReg is of the view that infrastructure competition is not likely to be feasible within the period under review, remedies will be chosen to ensure that there is sufficient access to wholesale inputs. Where ComReg's market analysis suggests that replication of eircom's infrastructure is feasible, the available remedies will be selected to assist in the transition process to a sustainable competitive market by promoting and encouraging efficient investment. This includes maintaining a consistent price structure over a range of regulated access products.

11.37 Finally, the remedies chosen will be incentive-compatible.

## Retail obligations

11.38 Regulation 15 of the *Universal Service Regulations* states that "Where the Regulator determines, as a result of a market analysis…that a relevant market consisting of the provision of part or all of the minimum set of leased lines…is not effectively competitive, it shall impose obligations regarding such provision which are set out in Schedule 3" on undertakings "having significant market power in such relevant market". Schedule 3 sets out the specific provisions which ComReg is required to impose on the SMP operator with regard to the minimum set of leased lines.

11.39 These obligations mean SMP undertakings must provide leased lines in the minimum set in a non-discriminatory manner, at cost oriented prices (with associated cost accounting), with a transparency requirement and according to certain quality parameters.

***Consultation question 21***

**Q. 21. Do you agree with the principles which ComReg believes should be used when selecting remedies? Do you think there are other principles that ComReg should consider when selecting appropriate remedies?**

***Responses to consultation question 21***

11.40 All respondents agreed with the principles set out. One respondent also noted that: ComReg must also take account of the Minister's Policy Direction 2004[93].

11.41 Another respondent added that it was essential that these principles be applied practically and pragmatically rather than adopting an academic approach for markets for products and services which are by their nature dynamic and evolving This respondent also stated that it questioned some of the examples quoted by ComReg relating to competition problems as it considered it had worked with ComReg and OAOs to introduce new, complex products to the benefit of end-users. The response also stated that the respondent had the commercial right to protect terms and conditions, which could not be construed as constructive denial of service. It also objected to ComReg's inference that excessive pricing for PPCs would have been proposed without ComReg intervention. Finally this respondent rejected the implication that difficulties with the implementation of PPCs were an example of eircom leveraging by non-price means.

***ComReg's Position***

11.42 ComReg notes that the respondents agreed with the principles it follows when selecting remedies.

11.43 In response to the views that the competition problems set out in the consultation document are incorrect, ComReg wishes to point out to this respondent the specific examples given in Document 04/59. In particular ComReg has set out its many interventions in respect of Partial Private Circuits – ComReg directed the product description, terms and conditions and prices. In fact since the publication of the consultation document, ComReg has been required to intervene on many other issues in respect of leased lines and PPCs, such as the provision at particular exchanges, and pricing. This is further evidence that competition problems continue to exist and regulatory intervention is required.

## Remedies proposed

## Wholesale Obligations

11.44 ComReg then set out the remedies it proposed to apply in the relevant wholesale markets and noted that it was proposing remedies that span both wholesale markets (i.e. wholesale trunk and wholesale terminating segments) given the nature of the Irish market at this time and in particular the fact that access products comprise elements of trunk segments and terminating segments.

### Access to and use of specific network facilities

[93] Policy Directions made by Dermot Ahern T.D. Minister for Communications, Marine and Natural Resources on 21 February 2003 and 26 March 2004.The goal is to ensure that pricing structure for interconnection and leased lines advances competition in the telecommunications sector".

***Summary of Consultation Issue***

11.45 ComReg noted that it could be clearly seen that eircom's dominance in the wholesale trunk and the wholesale terminating segments market has led to demonstrated competition problems of refusal to deal and denial of access, together with examples of non price leveraging. These stemmed from the considerable barriers to entry arising from sunk costs (particularly in the market for terminating segments) which has led ComReg to conclude that replication does not appear to be feasible. Even though replication is more feasible in the trunk market, ComReg did not believe that the competitive situation would alter to a significant extent during the period of this review. ComReg therefore concluded that remedies should be designed to provide OAOs with sufficient access to wholesale inputs.

11.46 Given the interventions that ComReg has had to make in respect of wholesale access products to ensure fit for purpose offerings are available for OAOs, ComReg does not believe that eircom would offer sufficient wholesale products through commercial negotiations with OAOs.

11.47 ComReg then set out its understanding of the two main ways that OAOs provide retail leased lines to their customers. The vast majority of retail leased lines are provided by operators taking up eircom's wholesale leased line offer. In this case eircom provides an end to end leased line (at a discount to its listed retail price) for the requesting operator to provide as its retail product. eircom has recently launched a Partial Private Circuit product which allows OAOs to combine, where possible and efficient, their infrastructure with that of eircom's. Each PPC consists of an End User Link interconnected over a Transport Link. ComReg noted that OAOs have traditionally entered the market through the first option, but expects during the lifetime of this review that migration to PPCs will accelerate. ComReg thus saw a continuing - if perhaps reduced - role for service-based competition using the wholesale leased lines product.

11.48 At the present time eircom offers access to both wholesale leased lines and PPCs. In reviewing these obligations, ComReg took account of their interaction and the effects on sustainable competition. While an access obligation for both products could be imposed, ComReg proposed that a less burdensome remedy would be the application of an access obligation with regard only to PPCs, as these products require significant input by OAOs in their design and cannot be introduced using any other remedy. In mandating wholesale leased lines, ComReg proposed that this product could be mandated using a non discrimination obligation and this would be more appropriate as the product supplied to OAOs is the same as that supplied to eircom retail and both are used to compete in the same retail markets. Therefore most of the competition problems relate to issues of potential or actual discrimination. An obligation of non-discrimination, it was suggested, targeted these in a more appropriate manner than an obligation of access.

11.49 ComReg therefore proposed pursuant to Regulation 13 (2) (a) to require eircom to provide a Partial Private Circuit offering as set out in its current Reference Interconnection Offer.

11.50 ComReg also noted that access seekers may need to avail of other products and in particular 'non traditional' interface wholesale products which are included within the

definition of the relevant wholesale market that will allow them to develop retail offerings to compete in the retail market. An access remedy is the only remedy which allows OAOs to make reasonable requests for products according to their specifications. Rather than mandating such products, ComReg proposed to impose an obligation on eircom to meet reasonable requests from OAOs, pursuant to Regulation 13 (1) for such products. Any such request will be reviewed in the context of Regulation 13 (4). ComReg noted that requests should only be granted when that remedy represents the only way to compete effectively.

11.51 Even with mandated access products, ComReg has still been required to intervene regarding the form of that provision. For example it is obviously necessary for OAOs to have open access to technical interfaces, protocols, and OSS such as is necessary for them to take up the mandated product and allow them to compete with eircom at the retail level in winning customers. Therefore, pursuant to Regulation 13 (2) (e) ComReg also considered it appropriate that, insofar as it is required to avail of access, eircom should also grant open access to technical interfaces, protocols, or other key technologies and similarly, pursuant to Regulation 13 (2) (h) eircom is required to provide such Operational Support Systems (OSS) or similar software necessary to ensure fair competition in the provision of services.

11.52 Additionally, pursuant to Regulation 13 (2) (b) ComReg also believed that eircom should have the obligation to negotiate in good faith with undertakings requesting access. This is necessary to ensure that OAOs can approach eircom and ensure that their requests for new or amended products are treated promptly and appropriately rather than resort to ComReg intervention.

11.53 To ensure that OAOs have certainty to provide retail services to the marketplace and hence compete with eircom, ComReg also proposed, pursuant to Regulation 13 (2) (c), to impose the obligation on eircom not to withdraw access to facilities already granted. ComReg notes that there are circumstances where it may be desirable to withdraw access to facilities, for example when a facility is no longer needed and it is an undue burden on eircom to maintain it. ComReg therefore proposed to qualify the obligation on eircom not to withdraw access to facilities already granted, save without prior ComReg approval which would only be granted following public consultation.

11.54 Pursuant to Regulation 13 (3) ComReg may also attach conditions covering fairness, reasonableness and timeliness to access obligations. In this context, ComReg proposed that Service Level Agreements (SLAs) are required in respect of those products mandated following an access obligation, and at all process points to provide OAOs with the ability to compete in the retail market by giving them appropriate certainty as to supply and repair of the wholesale input. Where SLAs apply[94], ComReg is of the view that penalties should apply where appropriate to provide for incentive compatibility and additionally a remedy of transparency may be appropriate as a supporting remedy.

11.55 Furthermore, ComReg noted that in order to take up PPCs (and other products) OAOs need to acquire capacity based interconnection products such as In Span Handover (ISH) and Customer Sited Interconnection (CSI). These are set out in Service Schedules 002 (Interconnect Paths) and 005 (In Span Interconnection) in

[94] In the context of PPCs, ComReg considers the current SLAs published by eircom to comply with such an obligation.

eircom's current Reference Interconnect Offer (Version 3.10) and eircom RIO Network Price List (Version 2.0). ComReg considers these to be products that facilitate interoperability and proposes to use 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 to require such capacity-based interconnection products, outside the SMP designation process. ComReg considers its approach in mandating capacity based interconnection products to be consistent with the approach set out in the *Access Regulations* and *the Relevant Market Recommendation.*

11.56 ComReg interprets this to mean that the products described in Service Schedules 002 (Interconnect Paths) and 005 (In Span Interconnection) in eircom's current Reference Interconnect Offer (Version 3.10) and eircom RIO Network Price List (Version 2.0) will continue to be supplied under the current terms and conditions. This means the current obligation to provide such products on a reasonable request basis continues. Obligations in respect of transparency and non discrimination also continue. These products will remain subject to price control as in the current regime. Such charges are based on LRIC.

***Consultation questions 22-28***

**Q. 22. Do you agree that an access obligation should be imposed on eircom pursuant to Regulation 13? Do you agree that this access obligation should mandate Partial Private Circuits and also impose on eircom the obligation to meet reasonable requests for access? Please detail your response.**

**Q. 23. If you believe that eircom should be required to answer reasonable requests for access, do you require any further wholesale products or features or additional associated facilities to be provided by eircom? Please provide details of such products.**

**Q. 24. Do you agree that an access obligation is not the most appropriate remedy to mandate Wholesale Leased Lines and that a remedy of non discrimination is more appropriate?**

**Q. 25. Do you agree that eircom should be required to grant open access to technical interfaces, protocols, or other key technologies and should also be required to provide such OSS or similar software necessary to ensure fair competition in the provision of services? Please detail your response.**

**Q. 26. Do you agree that eircom should be required to negotiate in good faith? Please detail your response.**

**Q. 27. Do you agree that eircom should be required not to withdraw access to facilities already granted, save without prior ComReg approval which would only be granted following public consultation? Please detail your response.**

**Q. 28. Do you agree with the approach to Service Level Agreements for access obligations set out above? Are there any other conditions which should be attached to the proposed obligations? Please detail any your response.**

***Responses to consultation question 22-28***

11.57 One respondent noted that the requirement to answer reasonable requests for access and use of specific network and associated facilities was generally an obligation that could be imposed if an NRA deemed that an operator had SMP in a relevant market. The respondent rejected ComReg's statement that eircom attempted to leverage its market power by supplying a good or service only on unreasonable terms which was construed as an example of eircom's refusal to deal. The respondent also disagreed that ComReg had had to intervene in mandating of wholesale access products and in particular PPCs terms and conditions and processes. It was held that this intervention

was unnecessary and that eircom wholesale was in constant dialogue with its customers to develop and bring new products to the market. The respondent continued to note that it was eircom's commercial practice to assess the market demand of service providers and to develop commercial wholesale products that allow for product differentiation and innovation while offering these products on a non-discriminatory basis to all market participants.

11.58 The respondent argued that the trunk market was competitive and therefore an access obligation should not apply to eircom in that market. To do so would be disproportionate and unjustified. It was suggested that access obligations should only be considered for low bandwidth (minimum set) terminating segments. Therefore obligations should only apply to low capacity PPCs. The respondent stated that as part of the Reference Interconnect Offer, eircom continued to publish Service Schedules for the Partial Private Circuit Product and that any further detail was not required. The obligation to meet reasonable requests for access was currently met by the Statement of Requirements (SOR) process contained within the Reference Interconnect Offer.

11.59 However three respondents agreed with the proposal to impose an access obligation for Partial Private Circuits (PPC). It was added that PPCs were still in the early stages of deployment in Ireland, and were unlikely to present significant competitive pressure on wholesale leased lines in short to medium term. Therefore wholesale leased lines were also required.

11.60 In respect of wholesale leased lines, most respondents suggested that these should be required through an access obligation rather than through a non discrimination requirement. There was concern that the non-discrimination condition was too weak a requirement given that in many areas wholesale leased lines would remain the only source of competition to eircom. It was their view that an access obligation should be put in place until PPCs have become more established and a greater number of operators have rolled out their networks – at this stage regulation could be relaxed to the 'non-discrimination' rule. It was suggested that there was ample evidence to indicate that eircom would not provide wholesale leased line products to OAOs in the absence of adequate remedies. For example a high degree of intervention had been required to make the in-situ transfer of leased lines take place and many difficulties remain in that process. In addition, the non discrimination remedy on its own was not adequate for wholesale leased lines, particularly for bandwidths above 2Mb/s where it was proposed that eircom's retail obligations would be lifted. It was suggested that this would make it difficult for OAOs to identify and substantiate breaches of the non-discrimination obligation.

11.61 However another respondent considered that there was no basis for imposing an obligation under the access regulations in respect of end to end leased lines, therefore any discussion of whether regulation 11 or 13 is more appropriate was accordingly moot.

11.62 For PPCs, one respondent submitted that a procedure needed to be developed to provide for additional OAO exchanges to be enabled as PPC exchanges as OAO networks would expand as they invested in and develop their infrastructure. It was suggested that the procedure developed should take into consideration OAO installed circuits. It was noted that the existing "in-situ" transfer process permitted the transfer of leased lines between different retail providers where eircom was the wholesale provider. This obligation on eircom Wholesale to provide a transfer process must be

continued. The obligation on eircom as a wholesale supplier should be broad enough to facilitate the transfer of leased lines wholesale-to-wholesale in addition to retail-to-wholesale where the parties so require.

11.63 When asked whether any further wholesale products or features should be required to be provided, it was one respondent's view that eircom should be required to offer leased lines on an X.21 interface below 2Mb/s. The respondent noted that eircom's contract terms were rigid, and did not cater for requests that were outside of the norm, it was held that this was particularly the case with regard to minimum term commitments. The respondent wished to see some variants or a broader range of standard terms developed. Additionally, 24x7 fault reporting and repair for 2Mb/s Wholesale circuits was requested. It was noted that this was an important deficiency in the current offering which causes a significant restriction on what OAOs can offer to their customers. However another respondent noted that they did not envisage any requirements for further additions to the wholesale portfolio at this time other than minor enhancements to the PPC product.

11.64 When asked whether it was appropriate that eircom should be required to grant open access to technical interfaces and to provide OSS to ensure fair competition, one respondent noted that eircom had made all necessary information and technical interfaces available to OAOs to support the wholesale products in this market. Access to information was provided through "gateway" and "broker" systems where necessary. It was their view that this approach was proven and has been accepted by the OAO community. However this was not supported by another respondent who stated that eircom should be required to grant access to all technical interfaces, protocols and other technologies and systems including Operational Support Systems for all wholesale leased lines. This respondent pointed out detailed issues in relation to fault testing that it had encountered.

11.65 One respondent rejected the implication that eircom would have to be required to negotiate in good faith. It was held that in all its dealings with customers, eircom Retail and Wholesale acted in a professional and commercial manner. However another respondent agreed that such an obligation was essential in order to prevent eircom from delaying and frustrating OAO's attempts get access.

11.66 One respondent disagreed that eircom should be required not to withdraw access to facilities already granted without national consultation and prior ComReg approval. The respondent believed that it was unnecessary, onerous and not in the interest of industry or consumers. It was regarded as unnecessary because it was held that eircom had never unilaterally withdrawn access to facilities for third parties once granted; and eircom needed to be able to develop the access and core network to maintain the network integrity. It was the respondent's view that it was onerous because eircom also needed to retain the flexibility to discuss access with third parties when it was re-designing its network architecture and re-deploying network infrastructure. It was held that without this flexibility eircom might be forced to maintain facilities which could be withdrawn and replaced elsewhere more efficiently. Some access facilities if not withdrawn could impede development completely. Any decision to continue could undermine the support systems and potentially delay or cancel development of services particularly on the edge of the network i.e. new housing and business development parks.

11.67 Another respondent however, was of the view that this general obligation should apply as part of an access obligation. They stated that it was acknowledged that in certain cases products might become obsolete and become burdensome and that in this case their withdrawal might be warranted. Some consideration needed to be given to the impact on users of the withdrawal of such products. It was also recommended by the same respondent that the obligation should include a requirement to give reasonable notice to the user, as appropriate to the circumstances.

It was submitted by one respondent that eircom had a set of SLAs already in place and which met the market demand from the OAO community; therefore an SLA obligation was unnecessary. However another respondent stated that SLAs were essential in the provision of Wholesale leased lines by eircom. It was submitted that they must include sufficient penalties to provide an incentive for eircom to meet the target contained therein. They must also contain sufficient detail to allow OAOs to "back-off" the commitments that they gave to their customers in retail contracts. In order to be non-discriminatory, SLAs for both PPCs and Wholesale Leased Lines should at least contain the minimum required by OAOs to offer a retail SLA equivalent to eircom Retail. Until such time as that was regime robustly put in place it was difficult to see how further competitive development would take place in this market. The respondent continued to note that it had and continued to express grave concerns regarding SLAs for PPCs and Wholesale Leased Lines.

***ComReg's position***

11.68 In response to one respondent who held the view that obligations should only be applied to low capacity terminating segments, ComReg has found in Section 9 that eircom had SMP in the markets for wholesale trunk and wholesale terminating segments. Therefore ComReg is obliged to apply remedies in respect of both of these markets. Evidence has been provided to show that wholesale leased lines and Partial Private Circuits are both required given the extent of competition in the markets at present. This therefore refutes one respondent's arguments that.

11.69 As set out in the consultation, PPCs may, in the long term, supply sufficient access for OAOs to provide for competition at the retail level. However given that the majority of leased lines currently provided in Ireland are provided as end to end circuits, either directly by eircom's retail arm, or by OAOs by taking up the eircom wholesale leased line offering, options for replicability are limited, ComReg considered that OAOs require access to wholesale inputs to provide their retail services. This view was supported in their responses by the OAOs, who see the continued provision of wholesale leased lines as vital to their businesses.

11.70 ComReg continues to believe that an access obligation in respect of Partial Private Circuits is appropriate. Given the competition problems identified in the development of Partial Private Circuits and ComReg's many interventions (even at the time of writing) in respect of this product, it believes that such an access obligation remains the only way to ensure fit for purpose product implementation and delivery. Therefore ComReg is imposing an access obligation pursuant to regulation 13 (2) (a).

11.71 Given the strength of OAO requests to mandate wholesale leased lines through an access obligation and in particular the argument that at this stage of development PPCs

are not a sufficient alternative, ComReg is minded to extend Regulation 13 (1 (a) to require eircom to provide wholesale leased lines through an access obligation. ComReg had previously suggested that a non discrimination obligation could be sufficient but has been persuaded that this is not the most appropriate obligation. For example, it does not provide an opportunity for OAOs to request (even small) service variants to the service offered to eircom retail. ComReg also notes that an access obligation is the only obligation allowing OAOs to specify services, service level agreements, terms and conditions which are different to those offered to eircom retail. ComReg therefore proposes to mandate wholesale leased lines through an access obligation. This will be reviewed in the light of PPC take-up.

11.72 Additionally and to allow innovation, ComReg considers that an obligation to meet reasonable requests should be attached to the access obligation. This is necessary to allow OAOs to request variants of products (for example the provision of wholesale leased lines above 2 Mb/s or non traditional interface products such as Ethernet backhaul) 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).

11.73 Furthermore as noted in the consultation, ComReg noted that in order to take up PPCs (and other products) OAOs need to acquire capacity based interconnection products such as In Span Handover (ISH) and Customer Sited Interconnection (CSI) as set out in Schedules (002) and (005) of eircom's Reference Interconnection Offer. ComReg considers these to be products that facilitate interoperability and proposes to use 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 to require such capacity-based interconnection products, outside the SMP designation process. Alternatively these products could also be required as technical services[95]. Without these services, take up of PPCs and wholesale leased lines cannot be effected and so ComReg intends to mandate the provision of capacity based interconnection products outside the market review process; that is without a designation of SMP or without definition of a relevant market.

11.74 ComReg interprets this to mean that the products described in Service Schedules 002 (Interconnect Paths) and 005 (In Span Interconnection) in eircom's current Reference Interconnect Offer (Version 3.10) and eircom RIO Network Price List (Version 2.0) will continue to be supplied under the current terms and conditions. This means the current obligation to provide such products on a reasonable request basis continues.

[95] Furthermore, in its *Explanatory Memorandum to the Recommendation on Relevant Markets*, the European Commission dealt with the question of imposing remedies in an area outside a defined market. The Commission recognised that in dealing with lack of effective competition in an identified market, it may be necessary to impose several obligations to achieve an overall solution. *The Relevant Market Recommendation* states:

*"For instance, it may often be the case that adjacent or related remedies are applied to technical areas as part of the over all obligation that addresses SMP on the analysed market. If specific remedies are thought to be necessary in a specific narrow technical area, it is not necessary or appropriate to identify each technical area as a relevant market in order to place obligations in that area."*

Obligations in respect of transparency and non discrimination also continue. These products will remain subject to price control as in the current regime. Such charges should be based on LRIC.

11.75 ComReg notes respondents' views in respect of the obligation to negotiate in good faith with undertakings requesting access. One respondent states that it always negotiates in a professional manner, whereas other respondents state that they have been subjected to attempts to delay and frustrate. At this time, ComReg intends to maintain this obligation pursuant to Regulation 13 (2) (b) to negotiate in good faith. This gives the certainty to OAOs that they require but is also not a burdensome obligation on eircom if this is seen to be standard practice.

11.76 ComReg also intends to maintain the obligation on eircom not to withdraw facilities already granted pursuant to Regulation 13 (2) c. The intention of this obligation is to provide OAOs with the certainty to provide services to their end customers and hence compete in the retail market. However ComReg does recognise that in some cases it may be inefficient to maintain access. ComReg's proposal to modify the obligation to mean that eircom must maintain access to facilities already granted, save without prior approval from ComReg, should alleviate these concerns. ComReg also agrees that sufficient notice is necessary to affected parties and expects eircom to provide such notice to ComReg and affected OAOs.

11.77 Provision of information has been a key competition concern between eircom and OAOs. Many of ComReg's interventions have been in respect of such issues. For example it is obviously necessary for OAOs to have open access to technical interfaces, protocols, and OSS such as is necessary for them to take up the mandated product and allow them to compete with eircom at the retail level in winning customers. Therefore, pursuant to Regulation 13 (2) (e) ComReg also considers it appropriate that, insofar as it is required to avail of access, eircom should also grant open access to technical interfaces, protocols, or other key technologies and similarly, pursuant to Regulation 13 (2) (h) eircom is required to provide such Operational Support Systems (OSS) or similar software necessary to ensure fair competition in the provision of services.

11.78 Pursuant to Regulation 13 (3) ComReg may also attach conditions covering fairness, reasonableness and timeliness to access obligations. OAOs have identified the importance of SLAs in allowing them to deliver service with certainty to end users. SLAs are even more important in the early stages of product introduction and with the rapid ramp up of PPC implementation; ComReg sees PPCs as vital and hence intends to maintain this condition. For wholesale leased lines, SLAs provide certainty to wholesale customers that they can compete with eircom's downstream arm in the retail markets. For new products, Service Level Agreements (SLAs) are required in respect of those products introduced following an access obligation, and at all appropriate process points to provide OAOs with the ability to compete in the retail market by giving them appropriate certainty as to supply and repair of the wholesale input. In any event, penalties should apply where appropriate to provide for incentive compatibility and additionally a remedy of transparency may be appropriate as a supporting remedy.

## Non- discrimination

### *Summary of Consultation Issue*

11.79 As the majority of leased lines currently provided in Ireland are provided as end to end circuits, either directly by eircom's retail arm, or by OAOs by taking up the eircom wholesale leased line offering, options for replication are limited, ComReg therefore considered that OAOs require access to wholesale inputs to provide their retail services. PPCs will in the longer term allow OAOs to use elements of their own infrastructure to provide retail leased lines. However within the timeframe of this review, given their recent introduction and the requirement for an OAO to have their own infrastructure, it is unlikely that PPCs will provide sufficient wholesale access to OAOs so as to provide for competition at the retail level.

11.80 Given that wholesale leased lines are used by OAOs and eircom's downstream arms to provide leased lines in the retail market, most competition problems relate to discriminatory provision or use of information. Evidence of this is the weight attached to the development of SLAs by OAOs. ComReg proposed that an obligation of non-discrimination provided the same ability to OAOs to purchase wholesale end to end circuits and was a more appropriate regulatory instrument than mandated access pursuant to Regulation 13 as it directly targeted the nature of the problem.

11.81 Although ComReg has found that the market outside the minimum set of retail leased lines is effectively competitive, ComReg notes that this results from a mix of own build and service-based competition and at least in part relies on the existence of the wholesale leased line product at higher bandwidths. If these products were to be removed the market would revert to a position where the market would be less competitive. ComReg therefore considers it necessary to continue the provision of wholesale leased lines at all bandwidths provided in the retail markets. For the reasons set out above, ComReg proposed that eircom should continue to offer the wholesale leased line product set[96] pursuant to an obligation of non discrimination.

11.82 In addition to the provision of access through a non-discrimination obligation resulting in a wholesale leased line offer, ComReg stated that it believed it important to provide for Service Level Agreements and consistent and timely reporting on these service levels to demonstrate that eircom is providing equivalent conditions in respect of its downstream retail affiliate and OAOs. The current SLA regime has been developed by OAOs over time and is understood by ComReg to alleviate the concerns of OAOs about competition problems. Penalties should also apply to these SLAs to ensure that they are achieved and that the non-discrimination obligation is incentive-compatible. To ensure compliance with a non-discrimination obligation it is necessary to apply, as an ancillary obligation, transparency.

11.83 Non-discrimination can also be used as an important supporting obligation where an access obligation is proposed. Earlier in this paper ComReg proposed to mandate PPCs through an access obligation and also to impose a requirement on eircom to

[96] Given that eircom currently does not publish any Offer for wholesale leased lines it is difficult for ComReg to reference explicit documentation available on, for example, eircom's website. However for the avoidance of doubt ComReg notes that the products available in the Wholesale offer are those available in the retail offer (including any new products introduced by eircom's downstream arm), with the addition of the 'in situ' transfer process.

meet reasonable requests in respect of future access products and associated facilities. With mandated access to wholesale inputs, either through an access remedy or a non-discrimination obligation, ComReg believes that eircom has increased incentives to discriminate on non-price parameters. Non-discrimination is the only remedy which can directly target these competition problems.

11.84 Therefore ComReg proposed to impose obligations to ensure non-discrimination both in respect of the wholesale leased line offer and any access obligations proposed. This means that eircom must apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and must provide services and information to others under the same conditions and of the same quality as eircom provides for its own services or those of its subsidiaries or partners. Information and services must be provided 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.

11.85 In particular, it is important that information gained by eircom as a result of its provision of services to another operator is not used by eircom's downstream arms in any manner. For example in the specific case where an OAO approaches eircom seeking to develop a new product, it is important that this OAO is afforded equivalent access to eircom Wholesale as eircom Retail. In other words eircom's downstream arms should not have privileged access to eircom Wholesale.

11.86 ComReg also considers that it will also be necessary to impose obligations of transparency and accounting separation to monitor non-discrimination and address the competition problems described earlier.

***Consultation question 29-30***

**Q. 29. Do you agree that an obligation of non discrimination is appropriate to mandate the provision of a wholesale leased line offer by eircom? Do you believe that SLAs and reports on SLAs are necessary to monitor non discrimination? Please detail your response.**

**Q. 30. Do you agree that obligations of non discrimination should be imposed on eircom? Please detail your response, making references to ComReg's interpretation of such an obligation set out above.**

***Responses to consultation questions 29 & 30***

11.87 One respondent disagreed with the obligation of non discrimination as it stated that it considered the markets to which ComReg proposed application of same to be competitive.

11.88 This respondent stated that OAOs purchased leased lines to connect end customers to their network nodes in order to offer a wide range of services. It was argued that this type of connection was specifically what the PPC product was designed to achieve and therefore the respondent did not support the requirement for a wholesale leased line. It was held that eircom wholesale did not supply wholesale leased lines as an input component to eircom retail but rather supplied terminating segments and trunk

segments which were bundled and sold as retail leased lines. This respondent did not agree that a wholesale leased line product should be mandated at all. It also stated that ComReg did not understand the product set as leased lines were not offered on a wholesale basis above 2 M/bs

11.89 Three respondents did not agree that non discrimination should be used to mandate wholesale leased lines, preferring an access obligation.

11.90 However these three respondents agreed that for wholesale access products in this market, irrespective of the obligation used to require them, a non discrimination obligation should apply. In order to monitor conformance with this obligation, it was held that eircom should be required to provide regular reporting of its performance against SLA targets. One added that recent experience with the LLU product had shown that in the absence of this type of reporting, eircom's retail division would enjoy access to information that allowed it to gain an advantage over OAOs in the market, e.g. being able to provide retail service guarantees over and above those offered to OAOs. This would allow eircom to leverage its market power in the Wholesale market to gain an advantage in the Retail market. Any non-discrimination obligation on eircom should cover all advantages that eircom could gain over OAOs through being vertically integrated, including but not limited to: access to information, quality of service provided, pricing, access to technology, and confidentiality between eircom Wholesale and the OAO.

***ComReg's position***

11.91 As stated previously, ComReg has found eircom to have SMP in the market for both wholesale trunk and wholesale terminating segments and is empowered to impose appropriate obligations including non discrimination. ComReg therefore refutes one respondent's suggestions that such obligations cannot be imposed.

11.92 Earlier in this review, ComReg set out its views that both PPCs and wholesale leased lines should be mandated through imposition of an access obligation. Furthermore, ComReg believes that a non discrimination obligation should apply to all products mandated by an access obligation.

11.93 Where mandated access to wholesale inputs is required, there is often an increased incentive for the access provider to discriminate on non-price grounds. Earlier in this paper, ComReg noted the competition problems that have been identified previously where non-price competition problems have arisen. For example, there have been problems around the important metrics of delivery and repair etc. Evidence of this is the weight attached to the development of SLAs by OAOs.

11.94 Where non discrimination obligations have been imposed resulting in a wholesale leased line offer, ComReg also believes it important to provide for Service Level Agreements (which would be mandated through an obligation to provide access to and use of specific network facilities) and consistent and timely reporting on these service levels to demonstrate that eircom is providing equivalent conditions in respect of its downstream retail affiliate and OAOs. Only through this obligation can industry have confidence that this obligation is alleviating the competition problems. The current SLA regime has been developed by OAOs over time and is understood by ComReg to address the concerns of OAOs about competition problems. Penalties should also apply to these SLAs to ensure that service levels are achieved and that the non-

discrimination obligation is incentive-compatible. To ensure compliance with a non-discrimination obligation it is necessary to apply transparency as an ancillary obligation.

11.95 Non-discrimination can also be used as an important supporting obligation where an access obligation is proposed. Earlier in this paper ComReg proposed to mandate both wholesale leased lines and PPCs through an access obligation and also to impose a requirement on eircom to meet reasonable requests in respect of future access products and associated facilities. With such mandated access, ComReg believes that eircom has increased incentives to discriminate on non-price parameters. Non-discrimination is the only remedy which can directly target these competition problems.

11.96 The non discrimination proposals mean that eircom must apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and must provide services and information to others under the same conditions and of the same quality as eircom provides for its own services or those of its subsidiaries or partners. Information and services must be provided 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.

11.97 In particular, it is important that information gained by eircom as a result of its provision of services to another operator is not used by eircom's downstream arms in any manner. For example in the specific case where an OAO approaches eircom seeking to develop a new product, it is important that this OAO is afforded equivalent access to eircom Wholesale as eircom Retail. In other words eircom's downstream arms should not have privileged access to eircom Wholesale.

11.98 ComReg also considers that it will also be necessary to impose obligations of transparency and accounting separation to monitor non-discrimination and address the competition problems described earlier.

## Transparency

### *Summary of Consultation Issue*

11.99 To ensure that OAOs have access to sufficient information and clear processes to take up mandated products, ComReg proposed that an obligation of transparency should be imposed. This would also ensure visibility of compliance with non-discrimination obligations.

11.100 The 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 noted that eircom currently publishes as part of its RIO, service schedules for the PPC products and proposed that this be maintained. ComReg also asked that respondents identify if any further detail is required to be added to the reference offer for PPCs.

11.101 In respect of the Wholesale Leased Line product set ComReg stated that a full reference offer was not published for these products but rather documentation was published on a piecemeal basis: for example, the eircom Wholesale website provides a link to 'wholesale leased line terms and conditions', and some detail of the SLA is

also provided in the O&M manual published on eircom's website. Where obligations have been imposed in relation to non discrimination, a reference offer is required and ComReg proposed that eircom should comply with this. This should take the form of 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 also asked for views as to whether extra information should be included in the proposed reference offer.

11.102 ComReg expects that any new offerings developed pursuant to Regulations 11 and 13 should also be detailed in a reference offer as and when they are developed

11.103 ComReg also considered that an obligation of transparency is necessary in order to ensure that eircom complies with an obligation of non-discrimination and in fact this was the genesis for the current SLA. ComReg considered that the current level of transparency attached to this had proved its effectiveness and its withdrawal would adversely affect all market players. Therefore ComReg proposed to maintain this obligation to publish on a monthly basis:

- percentage due date delivery performance for OAO leased lines;
- 95th percentile and 100th percentile average delivery figures for the provision of
- leased lines in the Total (Retail and OAO) Market and OAO market ;
- leased line process point breakdown ;
- age analysis for pending orders (Total and OAO markets).

11.104 In respect of fault repair, ComReg understood that eircom does not currently publish statistics in relation to fault management such as service availability or maximum response time but has provided them to Forum meetings from time to time. ComReg believed it more efficient to regularise all reporting on the SLA and sought responses from industry as to the method and frequency of this reporting.

11.105 ComReg also noted it will be necessary to impose obligations of transparency as an accompanying obligation with and to other obligations, in order to make the overall remedy more effective. Transparency supports both non discrimination, (as parties can observe and compare easily the factors over which discrimination could take place) and accounting separation (for which transparency is a natural complement in pricing and costing matters). ComReg therefore concludes that it an obligation of transparency is appropriate.

**Q. 31. Do you agree that an obligation of transparency should be imposed on eircom? Please detail your response.**

**Q. 32. Do you believe that reference offers should be maintained for the PPC product set and introduced for the wholesale leased line product set and any new offerings developed in accordance with Regulations 11 or 13? Please state in your answer any precise information that you believe should be made available, the level of detail required and the manner of publication.**

**Q. 33. Do you believe that ComReg should require eircom to make public any further information? Do you agree with ComReg that an obligation of transparency is required to monitor non discrimination? What type of information should be published? Please specify how you believe this should be made available. Please provide support for your response.**

***Views of Respondents***

11.106 All but one respondent agreed that an obligation of transparency should be applied to eircom where the markets have been found not to be effectively competitive. However one respondent suggested that transparency should be limited to low bandwidth terminating segments and should not include wholesale leased lines as such products should not be mandated. Three other respondents suggested that the transparency requirement should apply to wholesale leased lines and partial private circuits and indeed any new access products.

11.107 One respondent noted that such an obligation was necessary for OAOs to verify compliance by eircom with its other obligations. It was their view that this transparency obligation should include a requirement to publish SLA performance statistics, and a full reference offer including pricing, terms and conditions, operational procedures, and technical specifications. The respondent continued to note that it was their view that it is also necessary for eircom to publish appropriate separated accounts in order to verify compliance with non-discrimination obligations. They noted that eircom was vertically integrated and any discriminatory access to information enjoyed by eircom's retail unit would allow leverage of eircom's wholesale SMP. eircom should be required to publish advance notice of price changes to allow OAOs adequate time to prepare revised retail products.

11.108 When asked whether respondents believed that reference offers should be maintained for the PPC product set and introduced for the wholesale leased line product set, three respondents noted that reference offers should be published for all wholesale leased lines, including PPCs. One continued that these should be fully detailed and complete, covering pricing, terms and conditions operational procedures, technical specifications etc. As a minimum, the information should be available on eircom's wholesale web-site, with tracking and notification of amendments. Another respondent added that all documentation relevant to wholesale leased lines should be assembled in a single

reference offer document. Easy access to this kind of information was essential for OAOs to be able to provide services on a comparable basis to eircom.

11.109 However another respondent noted that in respect of PPCs, eircom currently published, as part of the Reference Interconnect Offer, Service Schedules, for the Partial Private Circuit Product and concurred with ComReg's view that no further detail was currently required. Interconnect links were already published as part of the current Reference Interconnect Offer. This respondent did not agree that any documentation should be published for wholesale leased lines as they did not accept the obligation.

11.110 In relation to consultation question whether ComReg should require eircom to make public any further information one respondent noted that eircom should be required to publish SLA performance statistics, and a full reference offer including pricing, terms and conditions, operational procedures, and technical specifications. They noted that eircom must be explicitly barred from offering "private and confidential" SLA improvements to any wholesale customer. It was their suggestion that the SLA should cover each stage of order handling by eircom for both installation and repair. Publication should be monthly. Not only should availability be published but also other key performance metrics including but not limited to; response times, repair times, numbers of repeat faults. Another two respondents suggested that a set of Key Performance Indicators be established for frequent reporting. However another respondent noted that eircom currently provided sufficient information and did not see any reason to provide any further information at this point in time.

***ComReg's position***

11.111 As stated previously, ComReg has found eircom to have SMP in both the terminating and trunk segments markets and hence obligations apply across these markets. ComReg therefore does not accept that any obligation should be limited to a particular segment of a market.

11.112 Transparency has two key roles. It is obvious that OAOs need access to the wholesale products available including full details as to, for example, terms and conditions, so as to physically use the products. Without access to this information, OAOs cannot offer such products in the retail market and compete with certainty. In general this requires the publication of a reference offer. ComReg and respondents agree that the current PPC reference offer is fit for purpose and should be maintained. However there is no reference offer published for wholesale leased lines although some industry documentation is published. This has led to some confusion – for example the lack of availability of wholesale leased lines above 2 Mb/s was not visible to ComReg as no reference offer was available. In order to avoid such confusion and to allow for competition by OAOs, a full reference offer needs to be published by eircom[97].

11.113 Transparency is also a key enabler to demonstrate non discrimination. In order to establish compliance with a non discrimination obligation the information must be made transparent to OAOs and to ComReg. This is also of value for eircom in demonstrating their compliance. At the current time ComReg considers that the

[97] This does not mean there no leased lines above 2 Mb/s are available to OAOs, rather there is no wholesale discount on these lines.

information provided by eircom provides (as listed in paragraph 11.103) sufficient data to satisfy industry and so intends to maintain this level of reporting.

## Price control and Cost Accounting

### *Consultation Issues*

11.114 A price control may be necessary when dealing with competition problems that stem from the potential to leverage market power in vertical settings. A price control could be required particularly if there is expected to be insufficient competition in upstream markets, especially where there are high entry barriers into the upstream segments.

11.115 Where a price control is deemed necessary as part of an overall remedy, ComReg will commence its analysis of the appropriateness of the price control by examining whether a wholesale price control alone would be sufficient to promote effective competition and be in the best interests of end-users.

11.116 In assessing the suitability of a wholesale price control, ComReg will also take account of the time dimension and interactions with other proposed remedies. If a wholesale price control were deemed insufficient for dealing with an identified competition problem, ComReg would assess whether the application of a retail price control – over and above that set out in the Universal Service Regulations – is necessary.

11.117 A price control may range from requiring prices to be reasonable (in that they afford an operator a reasonable return), to requiring prices to be cost orientated. ComReg will assess which form of price control is required in light of its market analysis.

### Market power and the application of price control obligations

11.118 ComReg arrived at the preliminary finding that eircom has SMP in the markets for: wholesale terminating segments; wholesale trunk segments of leased lines; and in the retail market for leased lines in the minimum set.

11.119 As eircom is a vertically integrated operator with market power in the wholesale markets, absent regulation of wholesale products it would be able to exert its market power by charging an excessive price for wholesale inputs and would be able to foreclose the retail market by means of a margin squeeze.

11.120 ComReg believes that eircom's market power is unlikely to disappear over the time frame of this review. The expected continuation of eircom's market power arises because of the considerable entry barriers associated with high sunk costs in wholesale markets.

### Products subject to price control

11.121 eircom currently offers two sets of wholesale products in the markets for terminating and trunk segments, the mandated Partial Private Circuits products and wholesale leased lines and is required to meet reasonable requests for these products. ComReg is proposing to continue with the mandatory access to PPCs and wholesale leased lines. With regard to the latter, this requires that the regulatory requirements are formalised (in line with current practice) by applying access, non-discrimination, transparency, price control, and accounting separation obligations under the Access Regulations.

11.122 The market definition analysis has concluded that PPCs and wholesale leased lines are in the same wholesale markets. Although PPCs act as a constraint on the pricing of wholesale leased lines and vice versa, the two wholesale products differ in character.

11.123 PPCs are only available at a wholesale level to OAOs, and are used as inputs to provide a range of retail services, some of which lie outside the scope of the retail markets covered in this review (e.g. mobile and fixed voice products), and have no direct equivalent retail service. Wholesale leased lines, by contrast, have equivalent retail offerings. For example, a 2Mb/s wholesale leased line is functionally equivalent to 2 Mb/s retail leased line.

11.124 Historically OAOs in Ireland have purchased eircom's wholesale leased line services to enable the offering of retail services to end users in areas where their own networks had not been built. Because of the problems of vertical foreclosure, access to eircom's wholesale leased lines was introduced using price terms governed by a retail-minus formula. The availability of wholesale leased lines 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 the core networks by the OAOs. Such investments over the course of time will reach further to the customer locations.

11.125 More recently OAOs have had the opportunity to migrate from using eircom's wholesale leased lines products to using eircom's PPC products. The attractiveness of using eircom's PPCs by OAOs in part reflects the growth in their customer bases and core networks. PPCs cannot be used in isolation to provide retail leased lines. To be able to offer a retail leased line, a PPC requires some additional elements of core network infrastructure.

11.126 .ComReg has approached the design of the proposed remedies to the competition problems in the wholesale leased lines markets 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[98].

11.127 ComReg therefore seeks to encourage, where efficient, infrastructure based competition in leased lines markets, as this will facilitate effective and sustainable competition. Infrastructure based competition is also more likely to lead to the eventual withdrawal of many of the current and proposed regulatory obligations in the leased lines markets.

11.128 PPCs give access to eircom network infrastructure that it would not be possible to economically replicate. In the absence of effective competition it is necessary to consider the application of a price control to prevent excessive pricing. It is also necessary to consider the application of a price control on wholesale leased lines in order to prevent a margin squeeze.

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

**PPC Price control**

11.129 As stated above, a price control can be used to remedy the leverage of upstream market power into potentially competitive downstream retail markets. To prevent such behaviour, ComReg proposes to continue the obligation that PPCs are offered at prices based on forward looking long run incremental costs (FL-LRIC). The application of the FL-LRIC method is preferred to other cost methods, such as fully distributed historical costs, as it leads to a set of prices that reflect the real resource costs taken into consideration when investment decisions are made by operators.

11.130 Alternative price controls, such as retail-minus, are not feasible with regard to PPCs, as there is an absence of a retail PPC offering. Other obligations, such as non-discrimination, are insufficient on their own to remedy the problem of exploitative behaviour.

**Q. 34. ComReg proposes to continue with the application of a FL-LRIC price control for PPCs. Do you agree with this position? Do you believe there are alternative price control methods that have not been considered by ComReg which are less onerous but equally effective as FL-LRIC? Please support your response with economic analysis.**

***Summary of Responses***

11.131 One Respondent stated that if ComReg continues with the application of FL-LRIC then this should only be applied to the area where there is a market problem. Accordingly the existing PPC FL-LRIC model should be changed to reflect this. They argued that the market for trunk segments was effectively competitive. The "bottleneck" for OAOs was for terminating segments for the minimum set of leased lines. The FL-LRIC model should cover just those terminating segments. This would reduce an unnecessary regulatory burden on dominant operators, would focus attention on the problem area, and would ensure that regulatory remedies were only applied to the areas where they are needed.

11.132 In addition they highlighted the following text of ComReg's Consultation Paper where they believed that the text was unclear and confusing:

- In paragraph 12.109 (of the initial consultation) the implication could be drawn that ComReg were of the view that a cost-orientation obligation should not afford an operator a reasonable return. ComReg was asked to clarify its position n this regard.

- In paragraphs 12.113 to 12.116 (of the initial consultation) ComReg once again presumed the existence of a mandated "wholesale leased line". The respondent referred to its stated position and submits that it had never been directed to provide "wholesale leased lines" but rather provided retail leased lines to OAOs at a discount. ComReg's own conclusion in paragraph 12.115 (of the initial consultation) appears to support this:

*"For example a 2Mb/s wholesale leased line is functionally equivalent to 2 Mb/s retail leased line."*

11.133 In addition the respondent referred ComReg to a report by Case Associates for ETNO[99] which lists the problems associated with LRIC-based prices whereby it was demanded it:

- could lead to excessive entry by transferring profits and rents to new entrants;
- underestimates the recoverable costs and reduces the returns to network investment;
- could significantly mis-estimate costs;
- might be based on inappropriate timing of network investment and upgrading leading to inadequate returns and lost options value;
- substituted regulation for profits as the key driver for competition, efficiency and pricing of access and networks;
- created strong incentives for SMP operators to (inefficiently) focus business on unregulated areas;
- substituted the regulator's judgements for business judgements on the nature and timing of network investments.

11.134 They claimed that if ComReg proposed to continue with the usage of FL-LRIC for determining costs of PPCs, then it should set out a clear statement of what it perceived to be the drawbacks with such an approach and it should put forward proposals for dealing with the potential drawbacks.

11.135 One respondent agreed that FL-LRIC was the most appropriate form of price control for PPCs. There was no retail equivalent so a retail-minus regulation would not work. The respondent proposed that ComReg should also introduce a price-cap or similar price control mechanism as the means to implement this price control. The price cap should be implemented in a way that gave maximum visibility to industry; i.e. full publication of calculation methodology, term, review procedures, etc.

11.136 One respondent welcomed ComReg's proposal to require a price control on PPCs and continued retail minus regulation of wholesale leased lines. They did not see a specific requirement for cost orientation within the wholesale remedies but considered that ComReg's proposal for a price control for PPCs, based on forward looking long run incremental costs (FL-LRIC) would fulfil this requirement. They agreed that it should lead to a set of prices which reflected real resource costs of PPCs and as such should send the correct price signals to alternative operators.

11.137 One respondent strongly believed that the same costing mechanism must be used for PPC's and wholesale leased lines. As the PPC infrastructure elements were underlying building blocks of eircom's wholesale leased lines it was contradictory to use different models and would distort the market as the ability for OAOs to construct competitive offerings to eircom would be inhibited if anomalies arose. It was their view that rather

[99] REMEDIES UNDER EU REGULATION OF THE COMMUNICATIONS SECTOR *prepared for the* European Telecommunications Network Operators' Association (ETNO) June 20, 2003

than a detailed LRIC costing mechanism much of the same benefit could be achieved by benchmarking and an agreed price glide-path. This would more efficient from a resource and effort point view and it was not clear that the full LRIC costing approach proposed by ComReg would yield sufficient benefit to justify it. The other advantage to this approach was that it would give the market certainty on PPC pricing. Given the planning lead times associated with this product this certainty was critical to its successful adoption by the market.

11.138 One respondent supported ComReg's proposal to continue with the application of LRIC price control for PPC's. They believed that ComReg should, as part of a wider consideration of wholesale pricing, consider the application of wholesale price caps for these services.

***ComReg's Position.***

11.139 ComReg is still of the view that eircom's dominance in the wholesale trunk and termination segment markets would enable it to exploit its market position which would be detrimental for OAOs and their end users. For the reasons set out in the section on wholesale market analysis, ComReg disagrees with the views of one respondent, that the trunk segment is effectively competitive and that this remedy should only be applied to the area where there is a market problem –i.e. the terminating segment and that the existing PPC FL-LRIC model should be changed to reflect this. ComReg would like to clarify that it was not its intention in paragraph 12.109 (of the initial consultation), to imply that a cost orientation obligation should not afford an operator a reasonable rate of return, indeed when computing the appropriate LRIC cost a reasonable return on efficiently incurred costs must always be built in.

11.140 Regarding the clarification sought on paragraphs 12.113 to 12.116 (of the initial consultation), ComReg has already set out its position in section 6 and notes that eircom already sells on these 'retail leased lines' at an 8% discount to wholesale customers who in turn sell them on the their own customers. This is discussed further in the section below on the price control for wholesale leased lines.

11.141 One respondent identified a number of (what they considered to be) concerns associated with LRIC based prices. With regard to these concerns, ComReg wishes to make the following responses.

11.142 A properly estimated LRIC cost is designed to promote productive and allocative efficiency and send the appropriate build/lease signals to the market. The first four issues raised by the Case Associates paper are concerned with inaccurate cost estimates underpinning prices, rather than a problem with LRIC based pricing per se. ComReg agrees that significantly mis-estimating the appropriate efficiently incurred costs, whether over estimating or under estimating them, will lead to economic inefficiencies

11.143 ComReg notes one respondents criticism that LRIC substitutes regulation for profits as the key driver for competition, however considers it ill founded. The European Union regulatory framework is about identifying markets where competition is not effective, and where a dominant position is held (singly or jointly) and applying ex-ante regulation to constrain the exercise of that dominant position to the detriment of competition and end users. While ComReg agrees that presence of excess profits in a

market would potentially attract entry into that market, the analysis of these markets indicates that there are significant barriers to entry and therefore price regulation will be required over the period of the review to give competing operators access to these key wholesale inputs at economically efficient prices.

11.144 FL-LRIC calculates the cost of providing a defined increment of output on the basis of forward looking costs incurred by an efficient operator where in the long run all cost are variable. It makes no reference to the timing of investment decision. An appropriately computed LRIC will provide sufficient incentive to invest and maintain and develop the network on an efficient basis.

11.145 ComReg disagrees that LRIC pricing creates perverse incentives for SMP operators to focus on unregulated businesses. LRIC is imposed on regulated markets (which by definition are uncompetitive) in order to constrain the pricing power of the SMP operator which would not otherwise be constrained. There are no regulatory obligations imposed on unregulated businesses because competition is effective. If the SMP operator wishes to invest inefficiently in these areas, the resulting destruction in the company's value is the concern of any company and its shareholders.

11.146 In response to one respondent who believed that the same costing mechanism must be used for PPC's and Wholesale leased lines, ComReg has set out clearly in the consultation, why it considered using different approaches in these markets so as to send the appropriate signals to the market place. ComReg also disagrees with the view that some form of benchmarking or glide path approach would be more appropriate as it is difficult to obtain comparable benchmarking information.

11.147 ComReg notes that a number of respondents favour the introduction of a wholesale price cap. While ComReg in general favours such an approach, it considers that this issue warrants further discussion and may consult on the issue in the future.

11.148 Having considered the above responses, ComReg is still of the view that PPCs should continue to be offered at prices based on forward looking long run incremental costs (FL-LRIC). The application of the FL-LRIC method is preferred to other cost methods, such as fully distributed historical costs, as it leads to a set of prices that reflect the real resource costs taken into consideration when investment decisions are made by operators.

## Wholesale Leased Lines Price control

### Consultation Issues

11.149 ComReg takes a forward looking perspective in this review. With the above proposed price control remedy for PPCs, ComReg anticipates a migration away from wholesale leased lines to PPCs by OAOs. Over the time frame of this review ComReg expects most wholesale leased lines will be supplied by eircom to service providers (resellers) offering leased lines in the retail market.

11.150 ComReg's finding is that eircom is dominant in the wholesale terminating segments market and the wholesale trunk market. ComReg has made the finding that eircom is dominant in the retail 'minimum set' market for leased lines.

11.151 With the expected migration by OAOs to PPCs, ComReg expects there to be increasing competition in retail leased line markets. ComReg believes that the main competition concern regarding eircom's wholesale leased lines is the potential for foreclosure through the application of a margin squeeze by eircom.

11.152 As stated above, a price control can be used to remedy the leverage of upstream market power into potentially competitive downstream retail markets. To prevent a margin squeeze, ComReg proposes to continue the obligation that wholesale leased lines are offered at prices based on a "retail-minus" current formula, where the minus is 8%.

11.153 The application of the retail-minus formula is preferred to other price control methods, such as LRIC, for the following reasons.

- Retail prices of leased lines in the minimum set are obliged to be offered at cost including a reasonable return, and so retail minus formula leads to prices that are equivalent to a cost based method. Therefore the application of the LRIC method would not be proportionate.
- Applying a retail-minus price control obligation together with other obligations, such as transparency, ensures that the application of a margin squeeze is avoided.
- A retail-minus formula, for an appropriate 'minus', will ensure that resale competition is efficient. An appropriate minus is usually calculated as the forgone retail costs of an efficient operator and may be applied both across the portfolio of leased lines provided and product by product. The latter approach could be necessary in circumstances where eircom might be distorting competition in the retail market
- The application of retail-minus to wholesale leased lines and FL-LRIC to PPCs will result in relative prices that incentivise the right investment in core network infrastructure, as OAOs will migrate to PPCs.

**Q. 35. ComReg proposes to continue with the application of the retail-minus formula price control for wholesale leased lines so as to prevent the application of a margin squeeze. Do you agree with this position and the approach described above? Do you believe there are alternative price control methods that have not been considered by ComReg which are less onerous but equally effective as the retail-minus formula currently applied?**

***Summary of Responses***

11.154 One Respondent favoured in principal the continuation of the retail-minus price control approach for wholesale leased lines. However they state that ComReg did not analyse how or why this particular level of discount (8%) would ensure that a margin squeeze did not arise. They urged ComReg to initiate a separate consultation on the issue of margin squeeze to establish a set of reasonable and transparent principles.

11.155 One respondent suggested that any discussion on price control was irrelevant given that eircom did not have an obligation to provide "wholesale leased lines". Nevertheless they re-stated their position that they did not agree with the continued application of the retail-minus formula price control for wholesale variants of retail products so as to prevent the application of a margin squeeze. With the availability of PPCs, the respondent considers that the requirement for a retail-minus discount was irrelevant.

11.156 One respondent claimed that ComReg proposed that eircom would have obligations removed for bandwidths above 2Mb/s. They were confused by ComReg's impression that eircom was currently required to offer wholesale discounts for leased lines above 2Mb. To date eircom had flatly refused such discounts. They had received no support from ComReg on this matter. If eircom should have been offering such discounts then as part of any determination ComReg should require eircom to make immediate and appropriate back-dated credits to OAOs for such services.

11.157 The use of retail–minus was an appropriate method of control of wholesale leased line prices. However, the respondent stated that it did not agree that 8% was an appropriate level as it did not take into account the level of economic efficiency. They believed that eircom made super-normal profits on such wholesale services. Detailed investigation was required to be undertaken by ComReg in this regard.

11.158 It would be necessary for eircom to continue to publish retail pricing for all bandwidths in order to determine the wholesale price using this method. Changes to retail price must be synchronised with changes to wholesale price and advance notice of change must be given for this control method to work properly.

11.159 One respondent welcomes ComReg's proposal to continue the use of retail minus regulation of wholesale leased lines. They agree with other respondents that ComReg did not analyse how or why the level of discount (8%) would ensure that a margin squeeze will not arise. They would appreciate further clarity about ComReg's assumptions as regards the issue of margin squeeze in the wholesale leased lines market.

***ComReg's Position***

11.160 ComReg notes the support for this obligation and reiterates that with the expected migration by OAOs to PPCs, it expects there to be increasing competition in retail leased line markets. ComReg believes that the main competition concern regarding eircom's wholesale leased lines is the potential for foreclosure through the application of a margin squeeze by eircom.

11.161 A price control can be used to remedy the leverage of upstream market power into potentially competitive downstream retail markets. To prevent a margin squeeze, ComReg is of the view that the continuation of the obligation that wholesale leased lines, up and including 2Mb/s, are offered at prices based on a "retail-minus" is the best means of addressing the competition problems in this market. In the recent consultation, ComReg has set out its reasoning for the application of the retail-minus formula in that it ensures that a margin squeeze is avoided and that resale competition is efficient. An appropriate minus is usually calculated as the forgone retail costs of an efficient operator and may be applied both across the portfolio of leased lines provided and product by product. This approach could be necessary in circumstances where

eircom might be distorting competition in the retail market and the application of retail-minus to wholesale leased lines and FL-LRIC to PPCs will result in relative prices that incentivise the right investment in core network infrastructure, as OAOs will migrate to PPCs.

11.162 Regarding the clarification sought on paragraphs 12.113 to 12.116 (of the initial consultation), as set out earlier ComReg has already set out its position in section 6 and notes that eircom sell on these 'retail leased lines' at a 8% discount to wholesale customers who in turn sell them on the their own customers. Historically the retail minus has been set at 8% and ComReg intends to review this in due course through a subsequent consultation.

11.163 Regarding the comment by one respondent on bandwidths above 2Mb/s, ComReg is proposing to remove the cost orientation obligation for these services and rely on the non discrimination obligation as set out earlier in this paper. As historically leased lines above 2Mb/s have not been offered on a discounted wholesale basis, and as the requirement to publish retail prices for leased lines of capacities above 2Mb/s will be withdrawn, ComReg does not believe it would be appropriate to extend the retail minus obligation to high capacity leased lines. ComReg notes that high capacity end user links for PPCs will still be available at a cost oriented price and eircom will continue to be obliged to offer high capacity leased lines to OLOs on equivalent terms, including price, as they are offered to eircom's retail arm.

## Cost Accounting Systems

### *Consultation Issues*

11.164 A cost accounting system will be necessary where an obligation has been imposed on a dominant operator in relation to cost oriented pricing, price controls, recovery of costs and/or retail tariff controls. With regard to this particular market, the obligation of cost orientation has been proposed as an appropriate obligation to be imposed on eircom for PPCs and therefore ComReg proposes to impose a further obligation with regard to cost accounting systems on eircom.

11.165 In this regard, the obligation of cost accounting systems supports the obligations of cost-orientation and accounting separation and can assist ComReg in monitoring the obligation of non discrimination. It can also address the competition problems identified earlier and is appropriate for the purposes of promoting efficiency, promoting sustainable competition, and conferring the greatest possible benefits on the end users of public electronic communications services.

11.166 In order to demonstrate 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 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 that should be cost-oriented. The

service/product costing methodology applies the utilisation of these components to the appropriate service product.

11.167 ComReg is of the view that in the absence of regulation, eircom could maintain some or all of its prices at an excessively high level, or impose a margin squeeze so as to have adverse consequences for end users. If ComReg were to relax this obligation, it would not have any means of ensuring the cost orientation of prices in the market and prevent such potential market failure.

11.168 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. Therefore an obligation of Cost Accounting Systems can provide greater assurances in monitoring non discrimination and addressing the competition problems identified.

11.169 ComReg does not consider that this obligation will be time consuming and impose a heavy burden on eircom, as given the size of such organisations; they must already have management accounting systems in place to support internal business decision making.

11.170 ComReg proposes to consult further on cost accounting systems and accounting separation methodologies supporting cost accounting. In the interim ComReg is proposing that it maintains the existing level of cost accounting system obligation on eircom until such time as any further consultations are completed.

**Q. 36. Do you agree that obligations in respect of cost accounting systems should be imposed on eircom? Please detail your response.**

**Summary of Responses**

11.171 One respondent agreed that eircom should have obligations in respect of cost accounting and accounting separation. They considered the full implementation of these obligations would be vital, particularly if ComReg proceeded to relax controls in the retail market. The regulatory accounts would be the only method of seeing what eircom retail was 'implicitly' paying eircom wholesale for leased lines.

11.172 One respondent stated that if the eircom-proposed boundary for a wholesale terminating segment was accepted as being equivalent to PPCs, then eircom already had in place a cost accounting system for PPCs. They argued that the market for wholesale trunks was competitive, in which case there would be no obligation for a cost accounting system.

11.173 One respondent claimed that a cost accounting system was an essential tool to verify that eircom was applying cost oriented pricing. There was a real probability that eircom would attempt to margin squeeze its competitors in the absence of verifiable cost based pricing. The cost accounting system must be sufficiently detailed to

identify all cost components used in the service provision. They agree that the current cost accounting system should be maintained, pending a review and revision by ComReg.

11.174 One respondent believed accounting separation and cost accounting were essential in order to police eircom, given its vertically integrated nature as supplier and downstream competitor to alternative network operators. They welcomed ComReg's work on this issue and would stress the need for clear cost allocation methodologies, clear transfer prices and extensive lists of all the activities which make up PPCs, wholesale leased lines and retail leased lines. An internal and external reference offer enabling visibility of eircom's transfer pricing and comparison of internal and external products was also important. Some form of 'chinese walls' would also be appropriate – it believed that, where possible, the retail arm of eircom should go through exactly the same processes and face exactly the same costs as its competitors (something referred to in the UK as transactional equivalence and transactional transparency). ComReg should also consider the nature of its relationship with eircom's auditors i.e. whether it could ensure that the auditor owed some form of duty of care to ComReg as well as to eircom.

11.175 The respondent urged ComReg to investigate the nature of Ethernet in the context of wholesale terminating segments and wholesale leased lines and to require provision of such services by eircom at the wholesale level. The respondent believed that this would require an access obligation on eircom, a price control (so that this wholesale service was not priced excessively) and other regulations to ensure non-discrimination (in prices and in quality of service), transparency etc.

11.176 The respondent raised a final comment in relation to the provision of interconnection circuits such as ISIs, CSIs, ISHs and CSHs. Paragraph 12.76 (of the initial consultation) stated '*that ComReg considers ISIs, ISHs, CSIs and CSHs 'to be products which facilitate interoperability and proposes to use Regulations 5 (..) and 6 (..) of the Access Regulations to require such capacity based interconnection products, outside the SMP designation process'*. They questioned whether ComReg had any intention of investigating and price controlling these products as they were very concerned that current prices were excessive and were limiting their ability to roll out network into the regions.

***ComReg's Position***

## Cost Accounting Systems

11.177 ComReg is still of the view that the obligation of Cost Accounting Systems is based on the nature of the problem identified, justifiable and proportionate. The obligation of cost accounting systems supports the obligations of cost-orientation and accounting separation. 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, visibility as to the basis of and amount of allocation across all services will be needed. Therefore the obligation of Cost

Accounting Systems can provide greater assurances in monitoring non-discrimination and address the competition problems identified.

11.178 ComReg notes that most of the respondents supported this remedy and will further consider the comments raised by one respondent as to how this remedy should be applied and on the auditor's duty of care, in a further consultation on the detailed implementation of Cost Accounting Systems and Accounting Separation. Also regarding their comments on the provision of interconnection circuits such as ISIs, CSIs, ISHs and CSHs, these issues will be dealt with in the Interconnection market analysis consultation paper.

11.179 ComReg does not accept the views of one respondent on the boundary split between wholesale terminating and trunk segments for the reasons set out earlier in this paper, nor does it accept that the market for wholesale trunks is competitive.

11.180 ComReg proposes to consult further on cost accounting systems and accounting separation methodologies supporting cost accounting. In the interim ComReg is proposing that it maintains the existing level of cost accounting system obligation on eircom until such time as any further consultations are completed.

## Accounting Separation

### *Consultation issues*

11.181 ComReg has in the past required eircom to supply financial information on-demand to support investigations and pricing reviews and/or on an annual basis in order to support regular monitoring of its decisions since deregulation of the market. Such data provides an essential part of regulation by allowing ComReg to ensure prices are not set at an excessive level, to monitor margin squeezes and to provide greater certainty about the cost base.

11.182 Separated accounts will help disclose possible market failures and provide evidence in relevant markets of the presence or absence of discrimination and margin squeeze. It will make visible the wholesale prices and internal transfer prices of a dominant operator's products and services.

11.183 An obligation of non-discrimination can require, inter alia, the imposition of financial reporting regimes in order to monitor eircom's compliance with such an obligation. With regard to eircom's designation as SMP in the wholesale leased lines markets and the identification of the obligation of non-discrimination as a means to remedy the competition problems discussed earlier, ComReg believes it appropriate to impose an obligation of accounting separation upon eircom in this market.

11.184 ComReg is proposing that eircom should have an obligation not to unduly discriminate because where eircom is a vertically integrated undertaking it has an incentive to provide wholesale services on terms and conditions that discriminate in favour of its own retail activities in a way that may have a material effect on competition. The obligation of accounting separation will support ComReg in its monitoring of eircom's behaviour with regard to non-discrimination by clearly reporting its wholesale prices and internal transfer prices for its services.

11.185 ComReg intends to implement accounting separation on a by 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 at a service level. Operators dominant in relevant markets may provide services in a number of markets and may divide the activities required to supply these services among a number of business units. The division of activities relevant to ComReg for regulatory purposes is the division of services, and the activities which underlie them, between relevant markets. These relevant markets may be regulated markets with an operator having SMP or a non SMP designated market. Therefore ComReg needs to be able to ascertain to what extent services in non SMP markets may impact on services supplied in SMP markets. In order to determine the information required for regulatory purposes, it is necessary to explore the nature of the costs incurred by activities undertaken in the course of supplying a service (or combination of services). If ComReg were to impose accounting separation at the market level, it would not be able to identify whether products and services are being provided on a non discriminatory basis.

11.186 As discussed earlier, in deciding upon the imposition of obligations to support the remedy of competition problems, ComReg must ensure that the obligation is based on the nature of the problem identified, justifiable and proportionate. The obligation of access to the network should ensure efficient and sustainable competition and must contribute towards maximising consumer benefits. The accounting separation obligation is designed to help provide evidence from eircom which may demonstrate the presence or absence of discrimination. ComReg believes the imposition of accounting separation upon eircom to be justifiable and based upon the nature of the problem identified.

11.187 If ComReg were to withdraw this obligation, it would not have any means of monitoring non discrimination or of having any information on margins in the retail business.

11.188 ComReg proposes to consult further on accounting separation but in the interim, ComReg is still proposing that it maintains the existing level of accounting separation on eircom until such time as any further consultations are completed.

**Q. 37. Do you believe eircom should have an obligation of accounting separation?**

**Please detail your response.**

***Summary of consultation issue***

11.189 One Respondent accepted that this should be the case only for market where eircom had SMP and then only if this remedy was proportionate, justified and likely to positively impact on the problem identified. In this case PPCs were the only product in the scope of market review. They believed that the current level of accounting separation imposed an undue burden and should be relaxed in the new regulatory environment.

11.190 They claimed that eircom were currently obliged to produce separate costing information for services which, to date, had little or no uptake. Such an obligation was

only justified when it could be demonstrated that the information published had sufficient benefits in terms of supporting competition and increasing consumer welfare to out-weigh the cost of producing and reviewing it. They claimed that the current obligation already imposed a heavy burden upon eircom in respect of data collection; cost modelling etc. The respondent also contends that separate disclosure should only be required where a product or service incurs a material level of cost.

11.191 They were concerned at the suggested extension of accounting separation obligation to product/service level. Any new accounting separation obligations imposed on eircom could take a significant time to implement and publish. The steps involved in implementing such changes included the following:

- assess new Accounting Separation obligations and clarify requirement with ComReg;
- if required, set up new products on revenue accounting systems, management
- accounting and regulatory accounting models;
- design and agree new or amended cost models with the relevant business areas;
- design and agree data collection tools that support the attribution of costs to comply with new directions. Agree methodology to be used to collect data;
- agree models and data collect tools, methodologies etc. with Regulatory Accounting auditors;
- collect sufficient data within financial year to achieve required audit opinion.

11.192 One respondent claimed that Separated Accounts were an essential tool for ComReg and OAOs to verify eircom's compliance with cost orientation, and to prevent over or under recovery of costs. They should be published regularly, and in a timely manner. ComReg proposed that eircom has SMP in both the wholesale market for all bandwidths and in the retail markets for 2Mb/s and below. The accounting separation should apply to all leased line products and should be sufficiently detailed to allow verification that all products have cost oriented pricing. Without prejudice to their belief that eircom held SMP at all bandwidths, to adequately provide for this, it would be necessary at a minimum to separate products for which eircom held SMP from those where it does not. This would allow verification that eircom did not leverage its wholesale market power into the retail market where it was not subject to regulation.

11.193 One respondent believed accounting separation and cost accounting were essential in order to police eircom, given its vertically integrated nature as supplier and downstream competitor to alternative network operators. They welcomed ComReg's work on this issue and stressed the need for clear cost allocation methodologies, clear transfer prices and extensive lists of all the activities which make up PPCs, wholesale leased lines and retail leased lines. An internal and external reference offer enabling visibility of eircom's transfer pricing and comparison of internal and external products was also important. Some form of 'chinese walls' would also be appropriate – in fact the respondent would urge that where possible the retail arm of eircom should go through exactly the same processes and face exactly the same costs as its competitors (something referred to in the UK as transactional equivalence and transactional transparency). ComReg should also consider the nature of its relationship with eircom's auditors i.e. whether it could ensure that the auditor owes some form of duty of care to ComReg as well as to eircom.

***ComReg's Position***

11.194 ComReg is still of the view that the obligation of accounting separation is based on the nature of the problem identified, justifiable and proportionate. In this regard, the accounting separation obligation is designed to help disclose possible market abuses and provide evidence in relevant markets of the presence or absence of discrimination. Telecommunications companies are characterised by being vertically integrated organisations with large service/products portfolios with significant joint and common cost who may operate in markets where they are subject to SMP obligations as well as non SMP i.e. competitive markets. ComReg need to be able to ascertain to what extent services in non SMP markets may impact on services supplied in SMP markets and the obligation of accounting separation can ensure that costs are allocated appropriately between SMP and non SMP markets.

11.195 ComReg disagrees with the views of the respondent which considers the extension of the accounting separation obligation to the product/service level to be time consuming and inappropriate. ComReg is of the view that operators dominant in relevant markets may provide services in a number of markets and may divide the activities required to supply these services among a number of business units. The division of activities relevant to NRA's for regulatory purposes is the division of services, and the activities which underlie them, between relevant markets. These markets may be a regulated or unregulated. Therefore NRAs need to be able to ascertain to what extent services in non SMP markets may impact on services supplied in SMP markets. In order to determine the information required for regulatory purposes, it is necessary to explore the nature of the costs incurred by activities undertaken in the course of supplying a service (or combination of services).

11.196 One Respondent asserts that the current level of accounting separation imposes an undue burden and is time consuming; ComReg contends that such an operator must already have management accounting systems in place to support internal business decision-making. The absence of such a system would hinder their decision making. In any event, they are currently obliged to prepare separated accounts and any extra improvements/amendments would not add a significant extra burden on them. If ComReg were to relax this obligation, it would not have any means of monitoring non discrimination or of having any information on margins in the retail business.

11.197 ComReg proposes to consult further on accounting separation but in the interim, ComReg is still proposing that it maintains the existing level of accounting separation on eircom until such time as any further consultations are completed.

## Retail Obligations

### Minimum Set of Retail Leased Lines (below and including 2Mb/s)

***Summary of consultation issue***

11.198 The *Universal Service Regulations* state that where ComReg determines as a result of a market analysis that a relevant retail market consisting of part or all of the minimum set of leased lines is not effectively competitive, obligations regarding such

provision and conditions of provision set out in Schedule 3 (of the Regulations) shall be imposed on undertakings designated as having SMP.

11.199 eircom has been designated with a finding of SMP in the relevant market of Minimum Set of Retail Leased Lines Therefore ComReg is required, and believes it to be appropriate, to impose the following obligations on eircom governing the conditions for provision of the minimum set of leased lines.

## Non Discrimination

11.200 The *Universal Service Regulations* state that the SMP operator must apply similar conditions in similar circumstances to organisations providing similar services, and are to provide leased lines to others under the same conditions and of the same quality as they provide for their own services or those of their subsidiaries or partners where applicable[100]. ComReg interprets this to mean that eircom shall adhere to the principle of non-discrimination when providing leased lines in this market. At the retail level this means that eircom shall apply similar conditions in similar circumstances to end users.

11.201 ComReg notes that eircom publishes in its Telecommunications Scheme a list of tariffs, terms and conditions which apply to all retail customers. ComReg considers that this is a necessary requirement in relation to retail leased lines in the minimum set to ensure that eircom adhere to any obligation of non discrimination. ComReg's view on notification and publication of terms and conditions is detailed in the section on transparency below.

11.202 ComReg also notes that an obligation of non discrimination does not mean that eircom cannot offer varying terms and conditions to different customers, but rather that any differences must be justified in an objective way. ComReg considers that the prohibition on discrimination will apply to any differences that may have the effect of harming competition. These may include the targeting of discount schemes or other terms and conditions at parts of the market that are, or are more likely to become, more competitive.

## Cost Orientation

11.203 The Regulations state that ComReg must ensure that tariffs for leased lines in the minimum set follow the basic principles of cost orientation.

11.204 Because of the absence of effective competition in the minimum set, cost orientated tariffs should ensure that end users do not face excessive prices for leased line services in the minimum set. Absent cost orientation, eircom could face insufficient competitive constraints in the retail markets and as a consequence end users would suffer from excessive prices. ComReg proposes to continue the obligation of cost oriented retail tariffs for leased lines in the minimum set.

11.205 ComReg believes that eircom will not face sufficient competition in retail leased lines below and up to 2mb/s during the period of this review and hence intervention in

the form of a retail minus wholesale regulation is required. This obligation is primarily directed towards preventing a margin squeeze and is not able to deal with excessive retail prices. Remedies that address excessive prices may include obligations that change the structure of a market to enable competition to take place. ComReg does not believe such remedies are available in this market, therefore regulation of retail tariffs in the minimum set is necessary to protect end-users from excessive prices

11.206 eircom has an obligation under the current regulations to have cost orientated prices. ComReg has interpreted this obligation to mean that prices should be orientated to Fully Distributed Historic Costs. As eircom are currently in compliance with this obligation the least burdensome approach would be to maintain this obligation. However using FDHC has the potential to 'lock in' inefficiencies in the provision of services which would not be in the best interests of the consumer.

11.207 Any future price changes need to be objectively justified. ComReg sets out transparency requirements to monitor this obligation later in the text.

## Cost Accounting Systems

11.208 The Universal Service Regulations also require that ComReg ensures that eircom formulate and put in place a suitable cost accounting system. ComReg must also keep available, with an adequate level of detail, information on the cost accounting systems applied by eircom. ComReg is required to submit this information on request to the European Commission

11.209 ComReg considers that a cost accounting system obligation will be necessary where an obligation has been imposed on an operator in relation to cost oriented pricing, price controls, recovery of costs and/or retail tariff controls. In order to demonstrate cost orientation of a service or product, it is necessary for the dominant provider 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.

11.210 Accounting Separation is necessary to fulfil any obligations of cost orientation and cost accounting. ComReg has required eircom to supply financial information on an annual basis in order to support regular monitoring of its decisions since deregulation of the market. Such data allows ComReg to perform its duties to ensure prices are not set at an excessive level, provides evidence of the presence or absence of discrimination and margin squeeze, and provides greater certainty about the cost base. This is obviously vital to support the obligations in relation to cost orientation and cost accounting systems.

11.211 In deciding upon the imposition of obligations to support the remedy of competition problems, ComReg must ensure that the obligation is based on the nature of the problem identified, justifiable and proportionate, in order to ensure efficient and sustainable competition and must contribute towards maximising consumer benefits. The accounting separation obligation is designed to help provide evidence from eircom which may demonstrate the presence or absence of margin squeeze and ComReg believes the imposition of accounting separation upon eircom to be justifiable and based upon the nature of the problem identified

11.212 If ComReg were to withdraw this obligation, it would not adequately be able to monitor such margin squeeze problems or determine if costs are set at an excessive level or obtain information on margins in the retail business.

11.213 ComReg proposes to consult further on cost accounting systems and accounting separation methodologies supporting cost accounting. In the interim ComReg is proposing that it maintains the existing level of cost accounting systems and accounting separation obligations on eircom until such time as any further consultations are completed.

## Transparency

11.214 The Regulations state that ComReg must ensure that the following information (in italics) in respect of the minimum set is published in an easily accessible form:

*Technical characteristics, including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point*

11.215 Part 14 of the eircom Telecommunications Scheme currently references the technical standards of the leased lines provided by eircom and also provides links to the ITU standards. ComReg considers this to meet the requirements of the transparency obligation and proposes to maintain the current publication requirements. *Tariffs, including the initial connection charges, the periodic rental charges and other charges. Where tariffs are differentiated, this must be indicated.*

11.216 These are currently set out in the eircom Telecommunications Scheme and include tariffs for leased lines including connection, rental and any other charges. Any discount schemes applying to leased lines – such as the term and volume discount scheme – are also set out.

11.217 ComReg believes that advance notification and publication can expose areas where dominant operators may have anti-competitive pricing practices and where prices are higher than they might be if there was sufficient competition. Advance publication gives consumers time to react to changes quickly and to make informed decisions. This may increase the competitive pressure on eircom. It also allows ComReg, operators and consumers to raise concerns relating to principles such as transparency, cost-orientation, non-discrimination and the availability of a wholesale offering before any changes become effective. As the prices for wholesale leased lines are linked to retail prices, it also gives other operators advanced warning of changes to wholesale prices and gives them time to make any consequent changes to their retail prices that they wish to make.

11.218 There may also be negative consequences from imposing an obligation to publish retail prices in advance. Advance notification and publication could make it easier for eircom's prices to be effectively used as a price 'ceiling' with all other operators gravitating towards these charges. If this were the case, the publication requirement could be constraining price competition and lead to higher retail prices than there would be in the absence of the obligation. ComReg's view is that the benefits of advance notification in supporting cost orientation and non discrimination obligations is likely to outweigh any potential disadvantages, but is particularly interested in respondents' views on this point.

11.219 The current obligation is that any changes to prices or other terms and conditions for retail leased lines in the minimum set should be published two months in advance. The regulations require ComReg to continue to ensure that tariffs are published. If an advance notification and publication obligation is to be maintained, ComReg would propose to amend the form of the obligation, and in particular to reduce the advance notification and publication period.

11.220 The revised obligation would be as follows:

- eircom shall implement changes in the terms and conditions of any product in this market (including tariff changes) at least 15 working days after public notice has been given and at least 20 working days after ComReg has been notified of the changes.
- eircom shall introduce any new product or service into the market at least 15 working days after public notice of the introduction has been given and at least 20 working days after ComReg has been notified of the introduction and the full terms and conditions (including tariffs) of the new product or service.
- eircom shall cease to offer any product or service at least 15 working days after public notice of the cessation has been given and at least 20 working days after ComReg has been notified of the cessation.
- eircom shall, in respect of each service or product sold in this market, supply such services or products only at the prices and in accordance with all other terms and conditions for those services or products as published in line with the requirements set out above.

11.221 These timeframes are shorter than the current obligation relating to the minimum set of leased lines (namely a two month advance public requirement) and are similar to existing obligations and practice for retail voice products. As discussed elsewhere, these obligations would only apply to the minimum set of leased lines and not any higher capacity or international leased lines which ComReg proposes to exempt from operator specific regulation.

11.222 ComReg believes that these obligations should allow eircom to undertake advertising and marketing activities and to take customer orders in relation to any revised terms and conditions or new products immediately following publication of any changes. eircom will not, however, be able to complete any orders that have the revised terms and conditions applied or apply any changes to existing services until the notice period is completed.

11.223 ComReg proposes to continue in its current practice of not formally approving changes to terms and conditions offered by eircom, but will intervene where ComReg believes that eircom may be in breach of its obligations. This intervention may take place before or after any changes have been applied

11.224 ComReg also proposes that this obligation applies to any product that includes any element of retail leased lines at 2Mb/s or less in whole or in part, i.e. where the leased line forms part of a wider bundle.

11.225 ComReg would expect eircom to ensure that planned changes to terms and conditions are fully compliant with all regulatory obligations prior to notification to ComReg and may require an immediate explanation from the operator of how the changes are compliant at any time following notification.

11.226 Public notice would be taken as given when all of the following have occurred:

- eircom publishes a notice in one or more newspapers circulating in the State stating that there has been a change and indicating how copies of the new or amended terms and conditions may be obtained;
- eircom publishes a notice in *Iris Oifigiul* stating that there has been a change and indicating how copies of the new or amended terms and conditions may be obtained
- eircom displays in a clearly accessible part of its website the new or amended terms and conditions.

11.227 Supply conditions must be published, including at least the following elements:

- information concerning the ordering procedure:
- The typical delivery period, which is the period, counted from the date where the user has made a firm request for a leased line, in which 95% of all leased lines of the same type have been put through to the customers. This period will be established on the basis of the actual delivery periods of leased lines during a recent time interval of reasonable duration. The calculation must not include cases where late delivery periods were requested by users
- The contractual period, which includes the period which is in general laid down in the contract and the minimum contractual period which the user is obliged to accept
- The typical repair time, which is the period, counted from the time when a failure message has been given to the responsible unit within eircom up to the moment in which 80% of all leased lines of the same type have been re-established and in appropriate cases notified back in operation to the users. Where different classes of quality of repair are offered for the same type of leased lines, the typical repair times shall be published- any refund procedure.

11.228 In addition, the Universal Service Regulations state that where a Member State considers that the achieved performance for the provision of the minimum set does not meet users needs it may define appropriate targets for the supply conditions listed above

11.229 In general ComReg believes that most of this information is currently provided by eircom but it is not published in any coherent manner at the current time. For example, some information regarding the ordering procedure is provided on eircom's website; the contractual period is set out in the general retail terms and conditions on the eircom website; and the refund procedure does not appear to be explicitly referenced.

11.230 The information required in respect of delivery and repair times for retail leased lines is not published by eircom at present, but is provided by eircom (in conjunction with ComReg) to the European Commission for their annual 'Report on Performance in the Supply of Leased Lines' and is then published by the European Commission[101].

11.231 The Regulations require that information published is made available in an easily accessible manner. ComReg considers that all this information should be available on the eircom website at a timely frequency. Information relating to ordering, contract length and refund procedure should also be made available in the Telecommunications Scheme and the rules regarding public notice should apply to this.

[101] Please note that eircom do publish some statistics – but in respect of the OAO and retail markets – on http://www.eircomwholesale.ie/pdfs/llstatsissue26.pdf

*Consultation questions 38- 43*

**Q. 38. The legislation obliges ComReg to place a non discrimination obligation on any SMP operator in this market. Do you support ComReg's proposed approach to defining this obligation? Please detail your response.**

**Q. 39. The legislation requires ComReg to impose an obligation of cost orientation on any SMP operator in this market. Do you agree that cost orientation should be interpreted as Fully Distributed Historic Costs, or do you believe other costing methodologies would be more appropriate? Please detail your response on ComReg's proposed implementation method.**

**Q. 40. The legislation requires for ComReg to impose an obligation of cost accounting systems on eircom. Do you agree with the approach set out? Please detail your response.**

**Q. 41. Do you agree that Part 14 of the eircom Telecommunications Scheme provides sufficient detail on the technical characteristics of leased lines in this market? Do you believe more detail should be given? If so, please provide details of any further information you believe should be made accessible, and how you believe it should be made accessible.**

**Q. 42. Do you agree with the proposed approach to transparency of retail prices and other terms and conditions for leased lines in the retail minimum set (up to and including 2 Mb/s)? In particular, what are your views on the advantages and disadvantages of imposing an obligation of advanced notification and publication? Please set out reasons for your answer.**

**Q. 43. Do you agree with that eircom should be required to publish the information in respect of supply conditions as set out above? How do you consider information should be made easily accessible? Please provide details as to format, frequency of publication and other parameters you consider relevant.**

*Responses to consultation questions 38-43*

11.232 One respondent agreed with ComReg's general approach to defining the **non-discrimination** requirement. In addition, there was a risk that eircom could use bespoke retail discounts that would be discriminatory and not based on objective reasoning. To verify compliance with this non-discrimination obligation it was suggested that an obligation of transparency was also required.

11.233 One respondent agreed with ComReg's view that publication of all tariffs and terms and conditions was necessary in eircom's Telecommunications Scheme list of tariffs, to help identify when non-discrimination might be occurring. The respondent also agreed with ComReg that eircom should be allowed offer varying terms and conditions to different customers; however these differences must be justified in an objective way. They accepted that the prohibition of discrimination should only apply to any differences that might have the effect of harming competition and that differences in treatment between customers were only justifiable if they were based on some objective factor.

11.234 The same respondent was concerned about the ability of eircom to develop bespoke retail products which would enable them to offer discounted deals to retail customers but fail to provide an equivalent wholesale service to enable a competitor to also compete for this business. The respondent requested an explanation of how ComReg would deal with this potential situation and whether eircom should be automatically mandated to provide an equivalent wholesale leased line for all retail scenarios. The respondent also questioned whether the current retail minus pricing regime for wholesale leased lines would protect against margin squeeze in such scenarios.

11.235 One respondent raised concern in relation to targeted discount schemes or other terms and conditions. It was their view that parts of the market were likely to become more competitive, and thus circumstances would vary in the supply of the minimum set of leased lines i.e. where economies of scale would be achieved, the cost of supply would be lower than for the provision of circuits to more remote locations. The respondent believed that conditions of supply should reflect the underlying economics. Competition should be on an equal footing and the principle of non-discrimination should not be used to distort competition. This meant that tariffs set for the minimum set of leased lines should reflect the costs involved in supply and should not be artificially distorted.

11.236 One respondent claimed that ComReg was required to impose obligations regarding the provision of the minimum set of leased lines and the conditions for such provision, one of which was to ensure that the provision followed the basic principle of cost orientation, on undertakings which had significant market power in the provision of those specific elements of the minimum set of leased line services.

11.237 They claimed that Fully Distributed Costs using a historic cost basis (FDC-HCA) had been used as the basis of cost orientation for leased line services. They did not see any benefit in moving from this basis. Considering the provision obligation on eircom, using FDC-HCA helped ensure that investments were recovered.

11.238 One respondent considered that the fully distributed costs were appropriate and recommended that ComReg should consider the use of Current Cost accounting rather than Historic.

11.239 One respondent agreed that a cost orientation condition should be imposed on eircom - without such a condition it was possible that eircom would be able to price excessively in the retail leased line market for up to 2Mbits. However, ComReg had suggested that prices should be orientated to 'Fully Distributed Historic Costs'. They did not agree that this was the correct approach. The best method of ensuring cost orientation was to use forward looking long run incremental costs (as proposed by ComReg for the price control of PPCs at wholesale level) as FL-LRIC should lead to a

set of prices which reflected real resource costs of PPCs and as such should send the correct price signals to alternative operators. Historic costs by definition reflected out payments made in the past which might bear no relation to future costs, were sunk and as ComReg itself noted 'has the potential to lock in inefficiencies in the provision of services which would not be in the best interest of consumers'. The respondent thus advised against the FDHC approach and was in favour of FL-LRIC.

11.240 One respondent agreed with this proposed remedy.

11.241 One respondent agreed that eircom should have obligations in respect of cost accounting and accounting separation. They considered the full implementation of these obligations would be vital, particularly if ComReg proceeded to relax controls in the retail market. The regulatory accounts would be the only method of seeing what eircom retail was 'implicitly' paying eircom wholesale for leased lines.

11.242 One respondent claimed that eircom had already in place a suitable cost accounting system. In relation to the minimum set of leased lines, eircom believes that costs associated with the minimum set of leased lines should be separately identified. In general, the ComReg approach to cost accounting systems seemed reasonable.

11.243 One respondent considered that a cost accounting system was an essential tool to verify that eircom was applying cost oriented pricing. There was a real probability that eircom would attempt to margin squeeze its competitors in the absence of verifiable cost based pricing. The cost accounting system must be sufficiently detailed to identify all cost components used in the service provision. They agreed that the current cost accounting system should be maintained, pending a review and revision by ComReg. ECTA was currently investigating cost accounting systems, and they believed this would be a useful input to ComReg's review.

11.244 One respondent believed accounting separation and cost accounting were essential in order to police eircom, given its vertically integrated nature as supplier and downstream competitor to alternative network operators.

11.245 One respondent agreed with this proposed remedy.

11.246 In relation to whether the level of detail contained in Part 14 of the Telecommunications Scheme was sufficient, one respondent agreed that part 14 of the Telecommunications Scheme provided sufficient information on the technical characteristics of eircom's leased lines. However another respondent was of the view that the current ITU standards references should be replaced by references to ETSI EN standards so as to match the designations given in Commission Decision 2003/548/EC on the minimum set of leased lines with harmonised characteristics and associated standards. The respondent believed that this provide sufficient detail for interested parties. In relation to the proposed approach to transparency and more specifically advance notification and publication, one respondent disagreed that an advance publication requirement would reduce price competition. The respondent held that there would be no advantage to permitting eircom to change a price at short notice which would allow it to hide its price from OAOs. The respondent noted that this would undermine the non-discrimination and transparency remedies. It was held that the only effect of a short notice price change would be to allow eircom to adjust its pricing for particular circumstances or bids and that this would also leave consumers with no notice to change supplier in advance of a price increase. The respondent noted

that OAOs would become aware of the eircom retail price when they became effective in any event.

11.247 The respondent noted that the wholesale price would track the retail price using the retail-minus price control and that many changes to the retail price would be as a consequence of changes to the underlying wholesale price. These changes must occur simultaneously in order to avoid discrimination between OAOs and eircom Retail. The respondent believed that a minimum notice period of 28 days should apply to retail (and as a consequence wholesale) price changes. This would allow OAOs sufficient notice to amend their retail offering in advance of the wholesale price change becoming effective.

11.248 The respondent believed that 28 days was also the minimum period after publication that should apply to other amendments to the terms and conditions for the service. It was their view, that fifteen working days was not adequate notice for withdrawal of a product as it did not afford consumers adequate time to change to alternative products. It was suggested that a minimum period of three months should apply. In addition to the notification methods proposed, the respondent suggested that eircom should be required to establish an e-mail notifications list, which would automatically inform subscribers to the list of changes to the tariffs.

11.249 The same respondent believed that changes to tariffs should require positive approval by ComReg in advance of implementation, rather than the practice of intervening in the case where ComReg suspected a breach of an obligation. eircom had in the past short-circuited this regulatory step by publicly announcing price changes before ComReg had a chance to review them. The respondent believed that this should be prohibited.

11.250 Another respondent believed that it was essential that eircom should outline all these tariffs, including (crucially) details of discount packages. It was their view that transparency should also be applied to any bespoke deals offered by eircom with regard to retail leased lines. The respondent did not agree with ComReg's suggestion that the current notification period (which requires pricing and other changes to terms and conditions to be notified two months in advance) should be shortened to 'at least 15 working days after public notice has been given and at least 20 working days after ComReg has been notified of the changes'. This would apply to price changes, changes to terms and conditions, introduction of new services and removal of any services. The respondent did not believe that 15 working days would be sufficient for competitors who might wish to bring a complaint to ComReg or adjust their prices or terms and conditions in response to eircom's changes. The respondent urged ComReg not to loosen regulation in this manner until PPCs in particular had become more established at a retail level.

11.251 A third respondent also did not support ComReg's proposal to relax the transparency obligations on eircom. The current obligations should be maintained. eircom's dominant position, as outlined in the consultation paper, did not point to any need for relaxation of regulatory controls. eircom had, according to the respondent in the past repeatedly breached the letter and spirit of publication obligations – by, for example, publicly announcing new prices before they were approved by ComReg. This action had had the effect of foreclosing the market for different services, e.g. broadband DSL. ComReg should not allow even greater flexibility for eircom to undermine competition and to flout regulatory controls in this manner. The respondent did not

agree with ComReg's proposal to maintain the current practice of not formally approving changes to prices. In the interest of transparency and certainty for all operators, ComReg should introduce a transparent price approval procedure.

11.252 A fourth respondent did not agree with the proposed requirement for any advance notification and questioned the regulatory basis for this proposed remedy. The respondent did not agree with ComReg's proposal to apply the transparency obligation to any product that included any element of retail leased lines at 2Mb/s or less in whole or in part, i.e. where the leased line formed part of a wider bundle. The respondent stated that it was clear from Schedule 3 of the Universal Service and Users' Rights Regulations that obligations on transparency regarding tariffs applied only to the minimum set of leased lines. They noted that in EC Universal Service Directive (28) stated that "The provision of leased lines outside of the minimum set of leased lines should be covered by general retail regulatory provisions rather than specific requirements covering the supply of the minimum set." It was considered that ComReg was going beyond its regulatory jurisdiction with this proposal.

11.253 There was support from all respondents for the proposal for publication of information in respect of supply conditions. Details were not provided as to the format, frequency of publication and other relevant parameters. However it was suggested that associated costs should be reasonable in the provision of appropriate data and how it should be made accessible in an effective way.

***ComReg's position***

11.254 ComReg and OAOs were in agreement that an obligation on non discrimination was necessary to ensure that eircom did not discriminate in favour of certain retail customers. This will be supported by an obligation of transparency which will provide visibility of compliance or non compliance. ComReg therefore deems that it is appropriate that eircom is required to apply equivalent conditions in equivalent circumstances to end users providing equivalent services and must provide services and information under the same conditions and of the same quality to all.

11.255 Information must be provided to all end users on standard timescales and quality as outlined in eircom's Telecommunications Scheme. This is supported by an obligation for non discrimination at the wholesale level which ensures that eircom Wholesale must provide an equivalent product to OAOs as it provides to eircom Retail.

11.256 eircom was of the view that the principle of non-discrimination should not be used to distort competition and tariffs and should take account of different costs associated with the supply of leased lines up to and including 2 Mb/s to different customers. However as set out in Annex VII of the Universal Service Directive, SMP undertakings must provide leased lines in a non discriminatory manner at a cost orientated price and according to certain quality parameters.

11.257 ComReg notes the broad support for the obligation of cost orientation, but disagrees with the view of a two of respondents who claim that the cost orientation obligation should be on a Current Cost Accounting or FL-LRIC basis. ComReg consider that the CCA or FL-LRIC basis is more appropriate in the wholesale market and that to impose it on the retail markets could have a detrimental effect on the market.

11.258 ComReg is still of the view that eircom's obligation to have cost orientated process means that prices should be orientated to Fully Distributed Historic Costs. As

discussed in the consultation, ComReg does not believe that eircom will face sufficient competition in retail leased lines up to and including 2Mb/s, during the period of this review. The proposed retail minus wholesale regulation is primarily directed towards preventing a margin squeeze and is not able to deal with excessive retail prices. Remedies that would deal with excessive prices may include obligations that change the structure of a market to enable competition to take place. ComReg does not believe such remedies are available in this market and therefore believes that regulation of retail tariffs in the minimum set is necessary to protect end-users from excessive prices.

11.259 ComReg notes the support for the obligation of cost accounting and reiterates that the obligation will be necessary where an obligation has been imposed on an operator in relation to cost oriented pricing, price controls, recovery of costs and/or retail tariff controls. In order to demonstrate cost orientation of a service or product, it is necessary for the dominant provider 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.

11.260 In addition, the obligation of Accounting Separation is necessary to fulfil any obligations of cost orientation and cost accounting. Such data allows ComReg to perform its duties to ensure prices are not set at an excessive level, to provide evidence of the presence or absence of discrimination and margin squeeze, and provide greater certainty about the cost base. This is vital to support the obligations in relation to cost orientation and cost accounting systems. In this regard, this obligation is designed to help provide evidence from eircom which may demonstrate the presence or absence of margin squeeze.

11.261 ComReg proposes to consult further on accounting separation but in the interim, ComReg is still proposing that it maintains the existing level of accounting separation on eircom until such time as any further consultations are completed.

11.262 There was agreement among respondents that part 14 of the Telecommunications Scheme provides sufficient information on the technical characteristics of eircom's leased lines. One respondent however believed that the current ITU standards references should be replaced by references to ETSI EN standards to match the designations given in Commission Decision 2003/548/EC (on the minimum set of leased lines with harmonised characteristics and associated standards). ComReg agrees with the respondent that it is appropriate to replace the current ITU standards references with the ETSI EN standards. ComReg holds that this will provide sufficient information on the technical characteristics of eircom's leased lines to interested parties.

11.263 ComReg does not agree that the shorter notification period of price changes would undermine the non discrimination and transparency remedies. ComReg believes that the notification is sufficient to expose where eircom could potentially have anticompetitive pricing practices while it also prevents eircom's price from being used as a ceiling. ComReg maintains that the shorter period provides sufficient notice to consumers to allow them react. This is especially so given the greater accessibility to relevant information in a coherent manner via eircom's website. ComReg agrees with the respondent's logic that notification of price changes must occur simultaneously at the wholesale level. However it deems advance notification and publication periods of

at least 15 working days for public notice and 20 working days notice to ComReg is more appropriate for reasons outlined above.

11.264 ComReg agrees with one respondent that eircom should not publicly introduce a price change without prior notification to ComReg. Therefore any price change must not be introduced before 20 working days advance notification to ComReg, five additional working days to the 15 working days public notice.

11.265 ComReg does not support one respondent's objection to the application of the transparency obligation to any product that includes any element of retail leased lines (up to or including 2 Mb/s) in whole or in part, i.e. where the leased line forms part of a wider bundle. ComReg notes that as defined in the retail market definition (Section 4 of this review) an access circuit which complies with the technical standards outlined in the in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive, is considered part of the minimum set of leased lines. Thus, it is appropriate to impose an obligation of transparency on these products.

11.266 There was consensus among respondents that eircom should be required to publish information in respect of supply conditions of leased lines as set out above. ComReg agrees that in accordance with Article 8 of the Access Directive all remedies must be based on the underlying problem identified, proportionate and justified and that the associated costs should be reasonable in the provision of appropriate data and how it should be made easily and effectively accessible.

## Summary of proposed obligations

11.267 Having analysed the relevant markets and having taken on board the views of the respondents, ComReg is proposing to impose the following obligations on eircom.

### Retail obligations

### Market for Leased Lines up to and including 2 Mb/s

11.268 At the retail level, within the market for the minimum set, ComReg is imposing the remedies specified in the Universal Services Directive. The retail remedies selected which apply to the minimum set are as follows:

- Non-discrimination;
- Cost orientation;
- Transparency;
- Cost accounting systems.

**Wholesale Obligations**

**Markets for Trunk and Terminating Leased Lines**

11.269 ComReg proposes to impose an obligation on eircom to provide partial private circuits and wholesale leased lines through implementation of the following obligations. The provision of such circuits will be mandated through the obligations to provide Access to and use of specific network facilities. The obligations proposed are as follows:

- Transparency;
- Non –discrimination;
- Accounting separation;
- Access to and use of specific network facilities
- Price control and cost accounting obligation
    - PPCs should be provided on a cost orientated basis using FL-LRIC
    - Wholesale leased lines up to and including 2 Mb/s will be provided on a retail minus (8%) basis.

11.270 As noted earlier, this document is both a response to consultation document and a consultation on the draft decision attached in Appendix B to E. As required by Regulation 20 of the Framework Regulations, the draft measure is now being made accessible to the European Commission and the national regulatory authorities in other member states of the European Community prior to taking a final decision. Details of the consultation procedure are included in section 13 and consultation questions are contained in Appendix A.

# 12 Regulatory Impact Assessment and Justification of Remedies

***Summary of consultation issue***

12.1 The Ministerial Direction (issued by the Minister for Communications Marine & Natural Resources in accordance with S13 of the Communications Regulation Act, 2002 published in February 2003, directs:

*"The Commission before deciding to impose regulatory obligations on undertakings in the market for electronic Communications or for the purposes of the management and use of the radio frequency spectrum or for the purposes of the regulation of the postal sector, shall conduct a Regulatory Impact Assessment in accordance with European and International best practice and otherwise in accordance with measures that may be adopted under the Government's Better Regulation programme."*

12.2 ComReg believes the market analysis process represents a comprehensive review of the market under consideration and is approximate to a regulatory assessment as considered by the Ministerial Direction quoted in 12.1 above.

12.3 The impact of the remedies proposed has been assessed throughout this market review; moreover ComReg has given structured consideration of alternatives to regulation and of different regulatory approaches.

12.4 ComReg has upheld the principles outlined in the Government White Paper of Better Regulation[102]. These considerations are explained below. The impact and alternatives have been discussed throughout this consultation process and review of the market and the implications of regulatory compliance have been considered.

12.5 At the outset it is important to note that ComReg has endeavoured to select the appropriate level of intervention. ComReg has undergone a comprehensive consultation process; in that consultation concerns were raised about some of the preliminary conclusions and the data used in the assessment. Since that consultation, ComReg gathered more data from operators. The result was to verify and underpin the preliminary findings of the consultation. However, ComReg gained much insight into the emerging trends in the leased line market and hence forth will be actively monitoring the market to assess if these trends will have an impact on the structure of the market.

12.6 Furthermore, the remedies proposed take into account the dynamics between the retail and the wholesale market and have been adapted to ensure that there is no distortion at both levels of the market.

[102] Regulating Better: A Government White Paper setting out six principles of Better Regulation". Appendix 1 – Regulatory Impact Analysis.

**Retail obligations**

**Leased Lines up to and including 2 Mb/s**

12.7 At the retail level, within the market for the minimum set, ComReg is imposing the remedies specified in the Universal Services Directive. The retail remedies selected which apply to the minimum set are as follows:

- non discrimination;
- cost orientation;
- cost accounting systems and;
- transparency.

12.8 The aim of the *Universal Service Regulations* is to ensure the availability of good quality publicly available services through effective competition and choice and to deal with circumstances in which the needs of end-users are not satisfactorily met by the market.[103]

12.9 Under the *Universal Service Regulations*, regard is given to interventions specifically concerning retail markets that are characterised by the existence of SMP. As a general rule, regulatory controls on retail services should only be imposed where NRAs consider that relevant wholesale measures under the Access Directive or measures regarding carrier selection or pre-selection would fail to achieve the objectives that have been set for NRAs in the Framework Directive[104].

12.10 There are specific provisions in the *Universal Service Regulations* concerning regulatory controls on the minimum set of leased lines and these are set out in some detail in Annex VII of the Regulations. Those obligations mean SMP undertakings must provide leased lines in the minimum set in a non-discriminatory manner, at cost orientated price (with associated cost accounting) a transparency requirement and according to certain quality parameters.

12.11 ComReg is of the view that, having regard to the proposed imposition of those obligations set out on Schedule 3 of the *Universal Service Regulations* on the provision of the minimum set of leased lines and the imposition of remedies on the terminating and trunk markets in accordance with the *Access Regulations*, it is not necessary, at this time, to impose regulatory obligations, in accordance with Regulation 14 of the *Universal Service Regulations*, on those leased lines which fall within the retail low bandwidth market which it is proposed to define, but which do not fall within the minimum set."

**Leased lines above 2 Mb/s**

12.12 ComReg has identified the market for retail leased lines above 2 Mb/s which is not a market listed in *The Relevant Markets Recommendation*[105]. Regulation has been in place in this part of the retail market as eircom have been obliged to publish retail

[103] Directive 2002/22/EC, Article 1.
[104] Directive 2002/22/EC, Recital 26, Article 17.
[105] page 15

prices. Through its analysis, ComReg has concluded that this market is sufficiently competitive to justify the removal of retail obligations. As noted in *The Relevant Markets Recommendation*[106] *'Regulatory controls on retail services can only be imposed where relevant wholesale or related measures would fail to achieve the objective of ensuring effective competition.'* ComReg therefore proposes to remove regulatory obligations are the retail level.

12.13 As ComReg found the retail market above 2 Mb/s to be competitive, and hence no regulation is proposed. In fact, ComReg is proposing to lift the existing obligation on eircom to publish its retail tariffs. The impact of removing this obligation has been considered as part of the overall selection of remedies at both the retail and the wholesale level. Part of the justification for lifting obligations from this segment of the market, is based on the fact that it is preferable to commence by imposing regulation at the wholesale level. Although ComReg has not identify any market failure at the retail level, it is important to note that regulation at the wholesale level should address market failure at the wholesale level and in most cases, should mitigate against the leveraging of market power from the wholesale into the retail. The possibility exists that despite regulation at the wholesale level, eircom could leverage its power from the wholesale market into the retail market. However, ComReg does not consider that this threat is likely to materialise, given the regime of wholesale obligations. In particular, the continuation of the obligation on eircom to provide WLL at retail minus prices should ensure against a margin squeeze.

12.14 Moreover, ComReg believes that this market has sufficient levels of competition to mitigate any market power that eircom could hold. Given the attractiveness of this end of the market, there are several players which provide an alternative to the incumbent.

12.15 ComReg has also taken into account the trend towards the provision of leased lines over alternative platforms and the impact of regulation on the use of such products. While these platforms are more extensive in the high bandwidth market, the trend towards their use is appearing in the low bandwidth market. Given the finding of SMP in the latter market, ComReg intends to monitor this trend to ensure the appropriateness of the proposed regulation.

**Wholesale Obligations**

12.16 Regulation 9(1) of the *Access Regulations* states that: "Where an operator is designated as having significant market power on a relevant market as a result of a market analysis carried out in accordance with Regulation 27 of the *Framework Regulations*, the Regulator shall impose on such operator such of the obligations set out in Regulations 10 to 14 as the Regulator considers appropriate". Furthermore, paragraph 21 of the SMP guidelines says, "if NRAs designate undertakings as having SMP, they must impose on them one or more regulatory obligations, in accordance with the relevant Directives and taking into account the principle of proportionality." ComReg is therefore compelled to impose at least one obligation where an undertaking is designated to have SMP.

[106] page 15

12.17 ComReg can impose any or a combination of obligations from those obligations listed in Regulation 10 to 14 of the *Access Regulations*[107]. Under Regulation 9(6) of the Access Regulations, obligations shall be 'based on the nature of problem identified; be proportionate and justified in the light of the objectives laid down in section 12 of the Act of 2002 and only be imposed following consultation in accordance with Regulations 19 and 20 of the *Framework Regulations*'.

12.18 The regulatory impact assessment is required to assess whether the range of obligations proposed are proportionate and justified and meet ComReg's objectives in terms of the promotion of competition, the development of the internal market and the promotion of the interests of end-users.

12.19 The wholesale remedies selected are as follows:

- Transparency;
- Non –discrimination;
- Accounting separation;
- Access to and use of specific network facilities
- Price control and cost accounting obligation
    - PPCs should be provided on a cost orientated basis using FL-LRIC
    - Wholesale leased lines up to and including 2 Mb/s will be provided on a retail minus (8%) basis.

12.20 Having considered the market structure at both the retail and the wholesale level, ComReg took the view that the market failure is predominantly found at the wholesale level. As identified by *The Relevant Markets Recommendation*[108], the market for the minimum set of leased lines is currently dominated by the incumbent and this is not likely to change within the lifetime of this review.

12.21 At the wholesale level, ComReg has endeavoured to select the appropriate level of regulation. This requires a balance between ensuring the provision of wholesale leased lines and partial private circuits to meet the current demands of the market, and to take into account the prospective evolution of the market and the substitution towards managed services. ComReg recognises that this trend is occurring at the retail level at high bandwidths, which will not be subject to ex ante regulation.

12.22 ComReg deems that the appropriate level of intervention at the wholesale level is the provision of partial private circuits at cost orientation prices. The provision of wholesale leased lines is mandated on a retail minus basis up to and including 2 Mb/s. Above this level eircom should provide access to wholesale leased lines on a non-discrimination basis. eircom is obliged to provide OAOs with an equivalent product and service as is provided to eircom retail. Ex ante intervention is not proposed for the retail high bandwidth market so a wholesale product cannot be provided on a retail minus basis. The combined regulation of these two products should ensure an

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

[108] page 15

adequate playing field for OAOs while creating sufficient incentives for the market to move along the ladder of investment.

**ComReg's Regulatory approach**

12.23 In considering these issues, the principles proposed in "Regulating Better: A Government White Paper setting out six principles of Better Regulation"[109], provide useful assistance. The criteria to be considered when undertaking a regulatory impact assessment include:

- Identification or quantification (where possible) of impacts;
- Structured consideration of alternatives to regulation and of different regulatory approaches;
- Built-in comprehensive, consultation processes; and
- Formal consideration of compliance issues.

12.24 ComReg has considered the impact of regulation in these markets and deems that it is both appropriate and justified, in light of the market analysis and the evidence of competition problems experienced by respondents. In a market where there is SMP, intervention would enable entry for other operators, creating a level playing field and preventing eircom from foreclosing the market. Ultimately, regulation of the market will promote sustainable competition which will benefit end users and the internal market.

12.25 ComReg has attempted to impose the appropriate level of regulation by tackling the competition problems through wholesale regulation. Moreover, ComReg has included a prospective analysis of the market and has tailored the intervention such that it should not distort any emerging trends. This ties in with ComReg's objective of creating the right incentives in the market for OAOs to climb the ladder of investment. ComReg sees this as the long term solution to addressing eircom's dominance.

12.26 ComReg has outlined its preferred level of intervention and has attempted to ensure that the remedies are proportionate, appropriate and justified. The alternative forms of regulation and the overall impact have been considered. Given the analysis of both the retail and the wholesale markets, ComReg has selected this suite of remedies to underpin the objectives of the market as a whole.

12.27 ComReg launched its consultation process on the market for retail leased lines and trunk and terminating segments of wholesale leased lines in document number 04/59 on 04 June 2004. This response to consultation has taken on board all of the responses to consultation, which have informed the findings of this market review. Furthermore, a consultation will be held on the detailed implementation of retail minus and accounting separation and cost accounting systems.

12.28 Issues of compliance have been considered and some of these issues have been raised in this market review. With this in mind, ComReg has endeavoured to avoid overly burdensome regulation and radical change to the existing regulatory regime. A

[109] Regulating Better: A Government White Paper setting out six principles of Better Regulation". Appendix 1 – Regulatory Impact Analysis.

consultation will be held on the detailed implementation of retail minus and accounting separation and cost accounting systems.

12.29 ComReg, taking account of its obligations under Section 12 of the Communications Act 2002 and the Directives and Regulations of the New Regulatory Framework, believes the remedies listed in Section 11 are proportionate and justified.

***Consultation question 44***

**Q. 44. Respondents are asked to provide views on whether the remedies in section 11 are proportionate and justified and offer views on what factors ComReg should consider in completing its Regulatory Impact Assessment in terms of the impacts of these remedies on end-users, competition, the internal single market and technological neutrality.**

***Responses to consultation question 44***

12.30 In relation to this consultation question there were two respondents, one of which agreed that the remedies proposed in section 11 are proportionate and justified, it was also noted that the findings of SMP made by ComReg requires that certain measures are taken to protect consumers and competitors in those markets.

12.31 Another respondent, strongly supported ComReg's intention to carry out and RIA and requested more clarification on timelines that ComReg proposed. The respondent suggested that ComReg should undertake a cost/benefit analysis of the different options for achieving any particular outcome. It was held that this cost/benefit analysis must include the direct costs that it implies for a regulated company, as well as the costs that obligation implies in terms of market distortion. It was also suggested that ComReg should consider the issue of the duration of remedies and the expected timeframe within which the proposed remedy will take effect.

***ComReg's position***

12.32 ComReg notes the respondents' comments and thanks all respondents for their input.

12.33 ComReg takes on board the respondents' comments and notes that in the first instance, the purpose of carrying out a RIA is to assess the impact on the overall market. This impacts the analysis, which has been incorporated into the market review and is summarised in this section, takes into account the current need for regulation and prospective developments in the market, as outlined above.

12.34 Following the assessment of the market and having taken on board the views of respondents, ComReg continues to believe that there is failure of the market for retail leased lines within the minimum set and trunk and terminating segments of wholesale leased lines and hence that regulatory intervention is necessary to safeguard sustainable competition.

12.35 In the first instance this implies that ComReg is obliged to impose some form of regulation and this should be appropriate to the competition problem it seeks to

address. Forbearance by ComReg would not be a regulatory option, as was suggested by one respondent.

12.36 ComReg has taken into consideration the various regulatory options available. Where there is a finding of SMP on a given market ComReg is obliged to intervene. The regulatory options that have been proposed have been examined and justified in light of the competition problem that they seek to address. These are outlined in Section 11.

12.37 It was raised, by one respondent that ComReg should remove all obligations for high bandwidth terminating and trunk segments of wholesale leased lines. ComReg believes that a robust market review has been performed which examines the options and the appropriateness of regulation. ComReg is satisfied that the approach taken is sufficiently justified and appropriate to address the dominance and potential abuse in these markets. There was support for the markets defined by ComReg and that the proposed regulation is proportionate and justified.

12.38 Another respondent requested more clarification on timelines that the proposed remedy would be imposed. ComReg holds that the obligations as outlined in section 11 will apply for the timeframe of the review. However if market dynamics change sufficiently within the period, ComReg holds the discretion to revisit the obligations imposed to address their appropriateness.

12.39 In the analysis of the appropriateness of obligations imposed on the relevant markets ComReg has been cognisant of cost and benefit. This is essential to ensure that remedies are justified and proportionate.

***Conclusion***

12.40 Regarding the issue of proportionality and justification of ComReg's proposed remedies ComReg has considered these issues and taken them into account in proposing the remedies for this market. ComReg believes that it is appropriate to consider the issue of proportionality and justification of remedies when discussing ComReg's proposed remedies. This is outlined in greater detail in Section 11.

# 13 Submitting Comments

13.1 All comments are welcome; however it would make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document.

13.2 The consultation period will run from 17 January 2005 to 14 Feburary 2005 during which the ComReg welcomes written comments on any of the issues raised in this paper.

**Q.1. Do respondents believe that the draft text of the proposed decision set out in Appendix B is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.**

**Q.2. Do respondents believe that the draft text of the proposed decision set out in Appendix C is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.**

**Q.3. Do respondents believe that the draft text of the proposed decision set out in Appendix D is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.**

**Q.4. Do respondents believe that the draft text of the proposed decision set out in Appendix E is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.**

13.3 "ComReg appreciates that many of the issues raised in this paper may result in respondents providing confidential information if their comments are to be meaningful. Under Article 5(2) of the Framework Directive the European Commission can require ComReg to provide it with responses to the consultation and other information, and the Commission may pass that information on to other NRAs in other Member States. In the limited circumstances of Regulation 17(6) of the Framework Regulations (namely where the information supplied by a party has been supplied to ComReg under an express power to request information) ComReg can make a reasoned request to the Commission that the information should not be passed on to other NRAs. This would not normally be the case with a response by an operator to a consultation document. In cases not covered by Regulation 17(6) the Commission, ComReg and the other NRAs are still bound to respect the confidential

nature of such information. Respondents are asked to clearly identify confidential material and if possible include it in a separate annex to the response".

13.4 Having analysed and considered the comments received, ComReg will review the retail and wholesale leased line market reviews and publish a report on the consultation which will inter alia summarise the responses to the consultation.

13.5 In order to promote further openness and transparency ComReg will publish the names of all respondents and make available for inspection responses to the consultation at its Offices.

## Appendix A – Consultation Questions

**Q. 1.**Do respondents believe that the draft text of the proposed decision set out in Appendix B is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.

**Q. 2**. Do respondents believe that the draft text of the proposed decision set out in Appendix C is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.

**Q.3.** Do respondents believe that the draft text of the proposed decision set out in Appendix D is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.

**Q.4.** Do respondents believe that the draft text of the proposed decision set out in Appendix E is, from a legal, technical and practical perspective, sufficiently detailed, clear, precise and intelligible with regard to the specifics of the remedies proposed? Please elaborate on your response.

# Appendix B – Draft Decision - Minimum Set of Leased Lines

## 1 STATUTORY POWERS GIVING RISE TO DECISION

1.1 In making this Decision and imposing the obligations set out herein, ComReg has taken account of, amongst other things, assessed the proportionality of these obligations relative to the objectives of ComReg set out in section 12 of the Act of 2002,[110] has taken the utmost account of the EU Commission's Recommendation[111] and the Guidelines[112] and has (where appropriate) complied with and taken in to account the Policy Directions made by the Minister.[113] This Decision is based on the market analysis and reasoning conducted by ComReg in relation to the market for the minimum set of leased lines[114] related to the Consultation Paper entitled *Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)* ('Document No. 04/59') dated 4 June 2004. Document No. 05/03 forms part of this Decision.

1.2 This Decision is made pursuant to Regulations 25, 26 and 27 of the Framework Regulations[115], Regulation 15 of the Universal Service Regulations[116] and having regard to sections 10 and 12 of the Act of 2002.

## 2 MARKET DEFINITION

2.1 This Decision relates to the market for the minimum set of leased lines, as identified in the EU Commission's Recommendation. The market in this Decision is defined as the market for the minimum set of leased lines in accordance with the EU Commission's Recommendation.

2.2 The relevant geographic market for the market for the minimum set of leased lines is defined as Ireland.

## 3 DESIGNATION OF UNDERTAKINGS WITH SMP

[110]The Communications Regulation Act 2002.

[111]EU Commission Recommendation of 11 February, 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 the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[112]Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services.

[113]Policy Directions made by Dermot Ahern T.D. Minister for Communications, Marine and Natural Resources on 21 February 2003 and 26 March 2004.

[114]As identified in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive

[115]S.I. No. 307 of 2003 the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 which transposes Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[116] S.I. No. 308 of 2003 the European Communities (Electronic Communications Networks and Services) (Universal Service and Users' Rights) Regulations 2003 which transposes Directive 2002/22/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

3.1 eircom Limited ("Eircom") is designated as having SMP in the market for the minimum set of leased lines in Ireland.

## 4 SPECIFIC OBLIGATIONS

4.1 ComReg has found that the market for the provision of the minimum set of leased lines in Ireland is not effectively competitive and, accordingly, shall impose those obligations regarding the provision of the minimum set of leased lines and regarding the conditions for such provision, which are set out in Schedule 3 to the Universal Service Regulations, on Eircom.

## 5. OBLIGATION OF NON DISCRIMINATION

Eircom shall adhere to the principle of non-discrimination when providing leased lines referred to in Regulation 15 of the Universal Service Regulations. Eircom shall apply similar conditions in similar circumstances to organisations providing similar services, and shall provide leased lines to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners.

## 6. OBLIGATION OF COST ORIENTATION

Eircom's tariffs for leased lines, referred to in Regulation 15 of the Universal Service Regulations, shall be cost oriented and such costs shall be calculated using a pricing model based on fully distributed historic costs.

Eircom shall continue to comply with all obligations in relation to cost accounting applicable to it prior to the date of this Decision until such time as ComReg makes a decision consequent to further consultation in relation to accounting separation obligations and cost accounting obligations.

6.3 In order to fulfil its obligations of cost orientation and its obligations in relation to cost accounting, Eircom shall keep separated accounts. All of the obligations in relation to accounting separation applying to Eircom in force immediately prior to the effective date of this Decision, shall be maintained in their entirety and Eircom shall comply with those obligations, pending a further decision to be made by ComReg (following further consultation) in relation to the details of and implementation of accounting separation obligations and cost accounting obligations. Without limiting the generality of the obligation to comply with all accounting separation obligations in force immediately prior to the effective date of this Decision, Eircom shall continue to comply with inter alia, the obligations described in the following Decision Notices previously issued by ComReg:-

- D5/99 – Accounting Separation and Publication of Financial Information for Telecommunication Operators.

- D8/99 – Costing Methodology for use in Accounting Separation.

• D10/99 – Accounting Separation and Publication of Financial Information for Telecommunications Operators.

• D9/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators.

• D10/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators, Supplemental Information referring to Decision Notice D9/00.

• D2/01- Accounting Separation for Internet Service provision and Report on Investigation into Indigo and Eircom.net.

• D7/01- Eircom's Reference Interconnection Offer & Accounting Separation and Publication of Financial Information for Telecommunications Operators.

• D12/01- Revision of Timetable for Publication of Separated Accounts and Financial Information by Eircom.

## 7 OBLIGATION OF TRANSPARENCY

7.1 Eircom shall ensure that the following information in respect of the minimum set of leased lines referred to in Regulation 15 of the Universal Service Regulations is published in the Eircom Telecommunications Scheme:-

I. Technical characteristics, including the physical and electrical characteristics as well as the detailed technical and performance specifications which apply at the network termination point. References to technical characteristics shall, where possible, match those contained in Commission Decision 2003/548EC of 24 July 2003 on the minimum set of leased lines with harmonised characteristics and associated standards.

II. Tariffs, including the initial connection charges, the periodic rental charges and other charges. Where tariffs are differentiated, this must be indicated. Where, in response to a particular request, Eircom considers it unreasonable to provide a leased line in the minimum set under its published tariffs and supply conditions, it must seek the agreement of ComReg to vary those conditions in that case.

III. Supply conditions, including at least the following elements:-

- information concerning the ordering procedure,

- the typical delivery period, which is the period, counted from the date when the user has made a firm request for a leased line, in which 95 % of all leased lines of the same type have been put through to the customers.

This period will be established on the basis of the actual delivery periods of leased lines during a recent time interval of reasonable duration. The

calculation must not include cases where late delivery periods were requested by users,

- the contractual period, which includes the period which is in general laid down in the contract and the minimum contractual period which the user is obliged to accept,

- the typical repair time, which is the period, counted from the time when a failure message has been given to the responsible unit within Eircom, up to the moment in which 80 % of all leased lines of the same type have been re-established and in appropriate cases notified back in operation to the users. Where different classes of quality of repair are offered for the same type of leased lines, the different typical repair times shall be published,

- any refund procedure.

7.2 Where ComReg considers that the achieved performance for the provision of the minimum set of leased lines does not meet users' needs, it may define appropriate targets for the supply conditions listed above at paragraph 7.1 III.

7.3 Without prejudice to the generality of the foregoing, Eircom shall implement tariff changes on the 20th working day after notice of such changes have been given to ComReg. For the purpose of this paragraph 7.3, 'working day' means a day (other than a Saturday or Sunday) on which clearing banks are generally open for business in Ireland.

**Isolde Goggin**
**Chairperson**
**The Commission for Communications Regulation**

**Dated the [●] day of [●] 2004**

# Appendix C – Draft Decision – Retail leased lines above 2 Mb/s

## 1 STATUTORY POWERS GIVING RISE TO DECISION

1.1 In making this Decision and removing the obligations set out herein, ComReg has had regard to the objectives of ComReg set out in section 12 of the Act of 2002,[117] has taken the utmost account of the *Relevant Markets Recommendation*[118] and the *Guidelines*[119] and has (where appropriate) complied with and taken in to account the Policy Directions made by the Minister.[120] This Decision is based on the market analysis and reasoning conducted by ComReg in relation to the market for retail leased lines[121] above 2Mb/s related to the Consultation Paper entitled *Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)* ('Document No. 04/59') dated 4 June 2004. Document No. 05/03 forms part of this Decision.

1.2 This Decision is made pursuant to Regulations 25, 26 and 27 of the *Framework Regulations*[122], Regulation 9 of the *Access Regulations*, Regulation 14 of the *Universal Service Regulations* and having regard to sections 10 and 12 of the Act of 2002.

## 2 MARKET DEFINITION

2.1 This Decision relates to the market for retail leased lines above 2Mb/s and is a market which differs from any market defined in the *Relevant Markets Recommendation*. The market in this Decision is defined as the market for retail leased lines above 2Mb/s and is a relevant market defined in accordance with Regulation 26 of the Framework Regulations.

2.2 The relevant geographic market for the market retail leased lines above 2Mb/s is defined as Ireland.

## 3 FINDING THAT THE RELEVANT MARKKET IS EFFECTIVELY COMPETITIVIE

[117]The Communications Regulation Act 2002.

[118]EU Commission Recommendation of 11 February, 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 the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[119]Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services.

[120]Policy Directions made by the Minister for Communications, Marine and Natural Resources on 21 February 2003 and 26 March 2004.

[121]Referred to in the EU Commission's Recommendation.

[122]S.I. No. 307 of 2003 the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 which transposes Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

3.1 ComReg concludes that the relevant market for retail leased lines above 2Mb/s is effectively competitive.

## 4 WITHDRAWAL OF OBLIGATIONS[123]

4.1 ComReg concludes that the relevant market for retail leased lines above 2 Mb/s is effectively competitive and, accordingly, withdraws, with effect from two weeks from the date of this Decision, those obligations which are currently applicable to eircom Limited by virtue of Regulation 13 of the *Universal Service Regulations*.

**Isolde Goggin**
**Chairperson**
**The Commission for Communications Regulation**

**Dated the [●] day of [●] 2004**

[123]Where ComReg concludes that a relevant market is effectively competitive, in cases where an undertaking has previously been designated as having significant market power in such market and specific obligations are applicable to such undertaking, ComReg is required by Regulation 27(3) of the Framework Regulations, after giving reasonable notice to any parties which it considers to be affected by such withdrawal, withdraw such obligation from the undertaking concerned.

# Appendix D – Draft Decision -Terminating Segments of Leased Lines

## 1 STATUTORY POWERS GIVING RISE TO DECISION

1.1 In making this Decision and imposing the obligations set out herein, ComReg has taken account of, amongst other things, assessed the proportionality of these obligations relative to the objectives of ComReg set out in section 12 of the Act of 2002,[124] has taken in to account the factors set out in Regulation 13 (4) of the Access Regulations, has taken the utmost account of the EU Commission's Recommendation[125] and the Guidelines[126] and has (where appropriate) complied with and taken in to account the Policy Directions made by the Minister.[127] This Decision is based on the market analysis and reasoning conducted by ComReg in relation to the market for wholesale terminating segments of leased lines[128] related to the Consultation Paper entitled *Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)* ('Document No. 04/59') dated 4 June 2004. Document No. 05/03 forms part of this Decision.

1.2 This Decision is made pursuant to Regulations 25, 26 and 27 of the Framework Regulations[129], Regulations 9, 10, 11, 12, 13 and 14 of the Access Regulations and having regard to sections 10 and 12 of the Act of 2002.

## 2 MARKET DEFINITION

2.1 This Decision relates to the market for wholesale terminating segments of leased lines, as identified in the EU Commission's Recommendation. The market in this Decision is defined as the market for wholesale terminating segments of leased lines in accordance with the EU Commission's Recommendation.[130]

2.2 The relevant geographic market for the market for wholesale terminating segments of leased lines is defined as Ireland.

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[124]The Communications Regulation Act 2002.

[125]EU Commission Recommendation of 11 February, 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 the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[126]Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services.

[127]Policy Directions made by Dermot Ahern T.D. Minister for Communications, Marine and Natural Resources on 21 February 2003 and 26 March 2004.

[128]Referred to in the EU Commission's Recommendation.

[129]S.I. No. 307 of 2003 the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 which transposes Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[130] For the avoidance of doubt this is defined as point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user' The boundary between trunk and terminating segments is at the custome's serving exchange.

## 3 DESIGNATION OF UNDERTAKINGS WITH SMP

3.1 eircom Limited ("Eircom") is designated as having SMP in the market for wholesale terminating segments of leased lines in Ireland.

## 4 SMP OBLIGATIONS[131]

4.1 ComReg has decided to impose specific obligations, as provided for by Regulations 10, 11, 12, 13 and 14 of the Access Regulations, on eircom. These specific obligations are described further in the sections below.

## 5 OBLIGATION TO PROVIDE ACCESS

5.1 Eircom shall have an obligation to meet reasonable requests for access to, and use of, such wholesale access products, features or additional associated facilities by undertakings requesting access or use of such access products, features or additional associated facilities, which form part of the market for wholesale terminating segments of leased lines. For the avoidance of doubt this includes the continued provision of wholesale terminating segments of leased lines and terminating segments of Partial Private Circuits.

5.2 Without prejudice to the generality of the foregoing, Eircom shall:-

I. negotiate in good faith with undertakings, requesting access;

II. give third parties access to specified network elements, facilities or both such elements and facilities;

III. not withdraw access to facilities already granted without the prior approval of ComReg;

IV. grant open access to technical interfaces, protocols or other key technologies that are indispensable for the interoperability of services or virtual network services;

V. provide access to operational support systems or similar software systems necessary to ensure fair competition in the provision of services.

5.3 It shall be a condition of the obligations contained in section 5.1 that Eircom conclude legally binding Service Level Agreements ('SLAs') with Other Authorised Operators ('OAOs') in respect of relevant products and appropriate process points.

## 6 CONDITIONS ATTACHED TO ACCESS OBLIGATIONS

[131]ComReg is legally obliged to impose ex ante SMP obligations that are appropriate, based on the nature of the problem identified, proportionate and justified in the light of the objectives set out in Article 8 of Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications.

6.1 Pursuant to Regulation 13 (3) of the Access Regulations, Eircom shall conclude service level agreements ('SLAs') in respect of relevant services and facilities and appropriate process points if SLAs have not already been concluded.

## 7 OBLIGATION OF NON-DISCRIMINATION

7.1 Eircom shall have an obligation of non-discrimination as provided for by Regulation 11 of the Access Regulations. Without prejudice to the generality of the foregoing, Eircom shall:-

I. provide a wholesale equivalent for retail offerings;

II. apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and provide services and information to others under the same conditions and of the same quality as Eircom provides for its own services or those of its subsidiaries or partners;

III. ensure that information and services are provided to OAOs according to timescales, on a basis, and of a quality, which are at least equivalent to those provided to Eircom's retail arm and associates;

IV. conclude legally binding SLAs with OAOs in respect of appropriate products and relevant process points.

7.2 Without prejudice to the generality of paragraph 7.1 and having regard to the designation of Eircom as having SMP in the market for wholesale trunk segments of leased lines, Eircom shall:

I. provide access to other undertakings (requesting access in accordance with paragraphs 5.1 and 5.2 of this Decision) to any additional wholesale inputs which are necessary to enable those undertakings to provide end to end leased lines to end-users; and

II. offer access to wholesale trunk and terminating segments of leased lines as a single wholesale leased line offering, such offering to be a wholesale equivalent of retail offerings of end to end leased lines being provided by Eircom. For the avoidance of doubt, such offerings shall include offerings for end to end leased lines with capacities in excess of 2Mb/s.

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## 8 OBLIGATION OF TRANSPARENCY

8.1 Eircom shall have an obligation of transparency as provided for by Regulation 10 of the Access Regulations.

8.2 Without prejudice to the generality of paragraph 8.1, Eircom shall publish and keep updated a reference offer ("RO") in respect of the services and facilities referred to in sections 5 and 7 that is sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested. Eircom shall ensure that the RO includes 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.

8.3 Eircom shall make public such information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices, in respect of the services and facilities referred to in sections 5 and 7, as specified by ComReg from time to time.

8.4 Eircom shall publish all SLAs concluded (and as from time to time amended) in accordance with this Decision.

## 9 OBLIGATION FOR ACCOUNTING SEPARATION

9.1 Eircom shall have an obligation to keep separated accounts as provided for by Regulation 12 of the Access Regulations. All of the obligations in relation to accounting separation applying to Eircom in force immediately prior to the effective date of this Decision, shall be maintained in their entirety and Eircom shall comply with those obligations, pending a further decision to be made by ComReg (following further consultation) in relation to the details of and implementation of accounting separation obligations and cost accounting obligations. Without limiting the generality of the obligation to comply with all accounting separation obligations18 in force immediately prior to the effective date of this Decision, Eircom shall continue to comply with inter alia, the obligations described in the following Decision Notices previously issued by ComReg:-

- D5/99 – Accounting Separation and Publication of Financial Information for Telecommunication Operators.

- D8/99 – Costing Methodology for use in Accounting Separation.

- D10/99 – Accounting Separation and Publication of Financial Information for Telecommunications Operators.

- D9/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators.

- D10/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators, Supplemental Information referring to Decision Notice D9/00.

- D2/01- Accounting Separation for Internet Service provision and Report on Investigation into Indigo and Eircom.net.

• D7/01- Eircom's Reference Interconnection Offer & Accounting Separation and Publication of Financial Information for Telecommunications Operators.

• D12/01- Revision of Timetable for Publication of Separated Accounts and Financial Information by Eircom.

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## 10 OBLIGATIONS RELATING TO PRICE CONTROL AND COST ACCOUNTING

10.1 The prices charged by Eircom to any other undertaking for access to or use of a wholesale leased line of capacities up and including 2Mb/s offered in accordance with paragraph 7.2 II shall be at least 8% less than the retail price charged by Eircom to its end-users for an end to end leased line, which is the retail equivalent of such wholesale leased line. Wholesale leased lines of capacities above 2Mb/s shall be offered to other operators on terms and conditions equivalent to those offered to eircom's retail arm.

10.2 Eircom's prices for PPCs shall be cost oriented and such costs shall be calculated using a pricing model based on forward looking long run incremental costs ('FL-LRIC').

10.3 Eircom shall continue to comply with the obligations in relation to cost accounting applicable to it prior to the date of this Decision until such time as ComReg makes a decision consequent to further consultation in relation to accounting separation obligations and cost accounting obligations.

**Isolde Goggin**
**Chairperson**
**The Commission for Communications Regulation**

**Dated the [●] day of [●] 2005**

# Appendix E – Draft Decision -Trunk Segments of Leased Lines

## 1 STATUTORY POWERS GIVING RISE TO DECISION

1.1 In making this Decision and imposing the obligations set out herein, ComReg has taken account of, amongst other things, assessed the proportionality of these obligations relative to the objectives of ComReg set out in section 12 of the Act of 2002,[132] has taken in to account the factors set out in Regulation 13 (4) of the Access Regulations, has taken the utmost account of the EU Commission's Recommendation[133] and the Guidelines[134] and has (where appropriate) complied with and taken in to account the Policy Directions made by the Minister.[135] This Decision is based on the market analysis and reasoning conducted by ComReg in relation to the market for wholesale terminating segments of leased lines[136] related to the Consultation Paper entitled *Market Analysis: Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)* ('Document No. 04/59') dated 4 June 2004. Document No. 05/03 forms part of this Decision.

1.2 This Decision is made pursuant to Regulations 25, 26 and 27 of the Framework Regulations[137], Regulations 9, 10, 11, 12, 13 and 14 of the Access Regulations and having regard to sections 10 and 12 of the Act of 2002.

## 2 MARKET DEFINITION

2.1 This Decision relates to the market for wholesale trunk segments of leased lines, as identified in the EU Commission's Recommendation. The market in this Decision is defined as the market for wholesale terminating segments of leased lines in accordance with the EU Commission's Recommendation.[138]

2.2 The relevant geographic market for the market for wholesale trunk segments of leased lines is defined as Ireland.

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[132]The Communications Regulation Act 2002.

[133]EU Commission Recommendation of 11 February, 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 the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[134]Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services.

[135]Policy Directions made by Dermot Ahern T.D. Minister for Communications, Marine and Natural Resources on 21 February 2003 and 26 March 2004.

[136]Referred to in the EU Commission's Recommendation.

[137]S.I. No. 307 of 2003 the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 which transposes Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.

[138] For the avoidance of doubt this is defined as point to point symmetric capacity between network termination points, whether contended or uncontended, which does not include 'on demand switching' or routing functions controlled by the end user'. The boundary between trunk and terminating segments is at the custome's serving exchange.

## 3 DESIGNATION OF UNDERTAKINGS WITH SMP

3.1 eircom Limited ("Eircom") is designated as having SMP in the market for wholesale trunk segments of leased lines in Ireland.

## 4 SMP OBLIGATIONS[139]

4.1 ComReg has decided to impose specific obligations, as provided for by Regulations 10, 11, 12, 13 and 14 of the Access Regulations, on Eircom. These specific obligations are described further in the sections below.

## 5 OBLIGATION TO PROVIDE ACCESS

5.1 Eircom shall have an obligation to meet reasonable requests for access to, and use of, such wholesale access products, features or additional associated facilities by undertakings requesting access or use of such access products, features or additional associated facilities, which form part of the market for wholesale trunk segments of leased lines. For the avoidance of doubt this includes the continued provision of wholesale trunk segments of leased lines and trunk segments of Partial Private Circuits.

5.2 Without prejudice to the generality of the foregoing, Eircom shall:-

I. negotiate in good faith with undertakings, requesting access;

II. give third parties access to specified network elements, facilities or both such elements and facilities;

III. not withdraw access to facilities already granted without the prior approval of ComReg;

IV. grant open access to technical interfaces, protocols or other key technologies that are indispensable for the interoperability of services or virtual network services;

V. provide access to operational support systems or similar software systems necessary to ensure fair competition in the provision of services.

5.3 It shall be a condition of the obligations contained in section 5.1 that Eircom conclude legally binding Service Level Agreements ('SLAs') with Other Authorised Operators ('OAOs') in respect of relevant products and appropriate process points.

## 6 CONDITIONS ATTACHED TO ACCESS OBLIGATIONS

[139] ComReg is legally obliged to impose ex ante SMP obligations that are appropriate, based on the nature of the problem identified, proportionate and justified in the light of the objectives set out in Article 8 of Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications.

6.1 Pursuant to Regulation 13 (3) of the Access Regulations, Eircom shall conclude service level agreements ('SLAs') in respect of relevant services and facilities and appropriate process points if SLAs have not already been concluded.

## 7 OBLIGATION OF NON-DISCRIMINATION

7.1 Eircom shall have an obligation of non-discrimination as provided for by Regulation 11 of the Access Regulations. Without prejudice to the generality of the foregoing, Eircom shall:-

I. provide a wholesale equivalent for retail offerings;

II. apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and provide services and information to others under the same conditions and of the same quality as Eircom provides for its own services or those of its subsidiaries or partners;

III. ensure that information and services are provided to OAOs according to timescales, on a basis, and of a quality, which are at least equivalent to those provided to Eircom's retail arm and associates;

IV. conclude legally binding SLAs with OAOs in respect of appropriate products and relevant process points.

7.2 Without prejudice to the generality of paragraph 7.1 and having regard to the designation of Eircom as having SMP in the market for wholesale terminating segments of leased lines, Eircom shall:

I. provide access to other undertakings (requesting access in accordance with paragraphs 5.1 and 5.2 of this Decision) to any additional wholesale inputs which are necessary to enable those undertakings to provide end to end leased lines to end-users; and

II. offer access to wholesale trunk and terminating segments of leased lines as a single wholesale leased line offering, such offering to be a wholesale equivalent of retail offerings of end to end leased lines being provided by Eircom. For the avoidance of doubt, such offerings shall include offerings for end to end leased lines with capacities in excess of 2Mb/s.

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## 8 OBLIGATION OF TRANSPARENCY

8.1 Eircom shall have an obligation of transparency as provided for by Regulation 10 of the Access Regulations.

8.2 Without prejudice to the generality of paragraph 8.1, Eircom shall publish and keep updated a reference offer ("RO") in respect of the services and facilities referred to

in sections 5 and 7 that is sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested. Eircom shall ensure that the RO includes 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.

8.3 Eircom shall make public such information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices, in respect of the services and facilities referred to in sections 5 and 7, as specified by ComReg from time to time.

8.4 Eircom shall publish all SLAs concluded (and as from time to time amended) in accordance with this Decision.

## 9 OBLIGATION FOR ACCOUNTING SEPARATION

9.1 Eircom shall have an obligation to keep separated accounts as provided for by Regulation 12 of the Access Regulations. All of the obligations in relation to accounting separation applying to Eircom in force immediately prior to the effective date of this Decision, shall be maintained in their entirety and Eircom shall comply with those obligations, pending a further decision to be made by ComReg (following further consultation) in relation to the details of and implementation of accounting separation obligations and cost accounting obligations. Without limiting the generality of the obligation to comply with all accounting separation obligations18 in force immediately prior to the effective date of this Decision, Eircom shall continue to comply with inter alia, the obligations described in the following Decision Notices previously issued by ComReg:-

- D5/99 – Accounting Separation and Publication of Financial Information for Telecommunication Operators.

- D8/99 – Costing Methodology for use in Accounting Separation.

- D10/99 – Accounting Separation and Publication of Financial Information for Telecommunications Operators.

- D9/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators.

- D10/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators, Supplemental Information referring to Decision Notice D9/00.

- D2/01- Accounting Separation for Internet Service provision and Report on Investigation into Indigo and Eircom.net.

- D7/01- Eircom's Reference Interconnection Offer & Accounting Separation and Publication of Financial Information for Telecommunications Operators.

• D12/01- Revision of Timetable for Publication of Separated Accounts and Financial Information by Eircom.

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## 10 OBLIGATIONS RELATING TO PRICE CONTROL AND COST ACCOUNTING

10.1 The prices charged by Eircom to any other undertaking for access to or use of a wholesale leased line of capacities up and including 2Mb/s offered in accordance with paragraph 7.2 II shall be at least 8% less than the retail price charged by Eircom to its end-users for an end to end leased line, which is the retail equivalent of such wholesale leased line. Wholesale leased lines of capacities above 2Mb/s shall be offered to other operators on terms and conditions equivalent to those offered to eircom's retail arm.

10.2 Eircom's prices for PPCs shall be cost oriented and such costs shall be calculated using a pricing model based on forward looking long run incremental costs ('FL-LRIC').

10.3 Eircom shall continue to comply with the obligations in relation to cost accounting applicable to it prior to the date of this Decision until such time as ComReg makes a decision consequent to further consultation in relation to accounting separation obligations and cost accounting obligations.

**Isolde Goggin**
**Chairperson**
**The Commission for Communications Regulation**

**Dated the [●] day of [●] 2005**

## Appendix F – Views of the Competition Authority

Under Regulation 27(1), ComReg is required to liaise with the Competition Authority in its definition and analysis of markets. The Competition Authority has been asked to provide their view with respect to the outcome of ComReg's review and analysis of the market for terminating and trunk segments and retail leased lines. This view is set out below.

**The Competition Authority**
An tÚdarás Iomaíochta

Isolde Goggin
Chairperson
Commission for Communications Regulation
Abbey Court
Irish Life Centre
Lower Abbey Street
Dublin 1

7th January 2005

**Re: ComReg Market Review – retail leased lines and wholesale terminating and trunk segments of leased lines (National)**

Dear Isolde,

I have been asked, in my capacity as a Member of The Competition Authority ("the Authority"), to provide the Authority's view with respect to the outcome of the Commission for Communications Regulation's ("ComReg") review and analysis of *"retail leased lines and wholesale terminating and trunk segments of leased lines (National)"* in Ireland.

*The Process*
ComReg is obliged under the EU Communications Regulatory Framework to conduct market definition and market analysis activities to determine the relevant markets for the purposes of the new regulatory framework and in accordance with competition law. Under Regulation 27(1) ComReg is required to liaise with the Authority in its process of market definition and analysis of any markets that are outside or differ from those recommended by the Commission under the *Relevant Market Recommendation* as well as those recommended. In December 2002, a cooperation agreement was signed between the Authority and ComReg in accordance with Section 34 of the Competition Act 2002 to facilitate *inter alia* cooperation in this type of exercise.

Members of staff at the Authority have participated in the Steering Group, the senior group of advisors and ComReg staff involved in recommending market analysis decisions to ComReg, and have provided comments on the draft final decisions. The Authority considers that those staff members have contributed fully in the process and that ComReg has duly considered any comments made by them in the preparation of the consultation documents and recommendations in the draft market proposals.

*The Market Recommendations*
In its *Relevant Market Recommendation*, the European Commission ("the Commission") recommended a market for *leased lines up to and including those with a capacity of 2 Mb/s*. The Commission also recommended two separate wholesale markets consisting of *terminating and trunk segments*. ComReg has considered the characteristics of these markets in the context of the Irish national circumstances. In the light of the analysis conducted on the volume of data and information collected by its staff, ComReg has concluded that the relevant markets proposed by the Commission are appropriate and supported by the market conditions prevailing in Ireland.

The Authority is of the view that in conducting its market analysis ComReg has defined markets in accordance with competition law and taken due account of the SMP Guidelines

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issued by the Commission in accordance with regulation 27(1) of the Framework Regulations. The Authority is also of the opinion that ComReg's proposed markets are appropriate on the basis of the information in its possession.

ComReg found that *eircom plc (eircom)* holds 88% of the minimum set of leased lines market and 80-85% in terms of revenue and circuits of both wholesale terminating and trunk segments. Despite these findings, ComReg went on to examine the competitive environment in each of these markets in accordance with the cumulative criteria prescribed in the Commission's *Relevant Market Recommendation* to establish whether any undertaking in these proposed markets holds Significant Market Power ("SMP").

ComReg concluded that certain of the proposed markets are characterised by a lack of effective competition at least for the period under review and as such:

> *eircom should be designated as having SMP on the market for the minimum set of leased for retail leased lines up to and including 2 Mb/s.*
>
> *eircom should be designated as having SMP in the market for wholesale terminating segments of leased lines.*
>
> *eircom should be designated as having SMP in the market for wholesale trunk segments of leased lines.*

With regard to a finding that *eircom* holds an SMP position in each of the above markets, the Authority is of the view that the analysis carried out by ComReg supports this view, at least for the period under review. Additionally, the Authority welcomes ComReg's undertaking to monitor competitive dynamics and review the markets to analyse any such developments.

We would note that the Authority's comments are made in the context of the specific provisions of the SMP guidelines relating to the relationship between markets defined for the purposes of *ex ante* regulation vis-à-vis competition law enforcement. The Authority reserves the right to re-examine any or all of the issues underlying these recommendations in the light of facts and evidence that may arise in specific future cases before it.

Sincerely,

Paul

Dr. Paul K. Gorecki
Member, Competition Authority

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## Appendix G – Notification of Draft Measures Pursuant to Article 7(3) of the Directive 2002/21/EC

Under the obligation in Article 16 of the Directive 2002/21/EC, ComReg, has conducted an analysis of the markets for retail leased lines (upto and including 2 Mb/s and retail leased lines (above 2 Mb/s) and terminating and trunk segments of wholesale leased lines.

Under Article 6 of the Directive 2002/21/EC, ComReg has conducted a national consultation, contained in ComReg document 04/59. This consultation ran from 04 June 2004 and ended 16 July 2004. The responses to this consultation have been taken into consideration and ComReg has now reached decisions in market definition, designation of SMP and regulatory obligations, which are contained in ComReg document 05/03.

ComReg hereby notifies the Commission of its proposed remedies and obligations consistent with Article 7(3) of Directive 2002/21/EC. These remedies and obligations are set out in the attached summary notification form. Under Regulation 27(1), ComReg is required to liaise with the Competition Authority in its definition and analysis of markets. The views of the Competition Authority are attached.

**Section 1 - Market Definition**

**Please sate where applicable:**

| | | | |
|---|---|---|---|
| **1.1** | The affected relevant product/service market (s).<br><br>Is this market mentioned in the Recommendation on relevant markets? | **Retail Level**<br>• The minimum set of leased lines (leased lines upto and including 2 Mb/s) – (market 7 of the Recommended Markets)<br>• Leased lines above 2 Mb/s (Not a Recommended Market)<br><br>**Wholesale Level**<br>• Terminating Segments (market 13 of the Recommended Markets)<br>• Trunk Segments (market 14 of the Recommended Markets) | Pages 22 – 56<br><br>Pages 78 - 98 |
| **1.2** | The affected relevant geographic market (s) | • Retail Markets - Ireland<br>• Wholesale Market - Ireland | Page 50 - 56<br>Page 93 - 98 |
| **1.3** | A brief summary of the opinion of the national competition authority where provided; | The Authority supports the approach and findings of this market definition exercise. | Page 194 - 196 |

| | | | |
|---|---|---|---|
| **1.4** | A brief overview of the results of the public consultation to date on the proposed market definition (for example, how many comments were received, which respondents agreed with the proposed market definition, which respondents disagreed with it) | There were a total of six respondents to the public consultation. There was broad agreement in the analysis and conclusions reached. One respondent disagreed with the conclusions reached on the scope of the market definition; however their reasoning was not very robust. | Pages 22 – 56 (retail)<br>Pages 78 – 98 (wholesale) |
| **1.5** | Where the defined relevant market is different from those listed in the recommendation on relevant markets, a summary of the main reasons which justified the proposed market definition by reference to Section 2 of the Commission's Guidelines on the definition of the relevant market and the assessment of significant market power[140], and the three main criteria mentioned in recitals 9 to 16 of the recommendation on relevant markets and Section 3.2 of the accompanying Explanatory Memorandum[141]. | ComReg has defined a market for retail leased lines above 2 Mb/s which is not a Recommended Market. ComReg has identified a clear bandwidth split at 2 Mb/s. Analysis was carried out on the competitiveness of the relevant market where it was concluded that no operator has SMP. | Pages 22-63 |

[140] Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications and services, OJ C 165, 11.7.2002, p. 6.

[141] Commission Recommendation of 11.2.2003 on Relevant Product and Service Markets with 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 ECNs and ECSs, C (2003) 497

**Section 2 - Designation of undertakings with significant market power**

**Please state where applicable:**

| | | | |
|---|---|---|---|
| **2.1** | The name(s) of the undertaking(s) designated as having individually or jointly significant market power. Where applicable, the name(s) of the undertaking(s) which is (are) considered to no longer have significant market power | eircom has been designated as having significant market power in the national market for:<br>• the minimum set of leased lines for retail leased lines up to and including 2Mb/s<br>• Wholesale terminating segments of leased lines<br>• Wholesale trunk segments of leased lines<br><br>A reference in this section to any given undertaking shall be deemed to include that undertaking and any undertaking which is associated with, or is controlled by, or controls, directly or indirectly, the undertaking in question and which carries out business activities in Ireland, where the activities engaged in (either directly or indirectly) are activities falling within the scope of the relevant markets defined in section | Page 77 (retail)<br>Page 114 (wholesale) |
| **2.2** | The criteria relied upon for deciding to designate or not an undertaking as having individually or jointly with others significant market power | • Market Share<br>• Potential Competition and Barriers to Entry<br>• Economies of scale<br>• Absence of Countervailing Bargaining Power | Page 56-77 (retail)<br>Pages (98 - 114 (wholesale) |
| **2.3** | The name of the main undertakings (competitors) present/active in the relevant market. | Retail Markets (eircom, EsatBT, Colt, Energis)<br>Wholesale Market (eircom, EsatBT, ntl) | Page 11 |
| **2.4** | The market shares of the undertakings mentioned above and the basis of their calculation (e.g., turnover, number of subscribers) | OAO Market Share<br>• Minimum set – 30% (revenue) 20% (circuit)<br>• High bandwidth – 64% (circuits)<br>• Wholesale terminating 15% (circuits) 20% (revenue)<br>• Wholesale trunk15% (circuits) 20% (revenue) | Page 64<br><br>Page 60<br><br>Page 99<br><br>Page 104 |

**Please provide a brief summary of:**

| | | | |
|---|---|---|---|
| **2.5** | The opinion of the national competition authority, where provided | The Authority supports the approach and findings of this analysis exercise. | Page 194 |
| **2.6** | The results of the public consultation to date on the proposed designation(s) as undertaking(s) having significant market power (e.g., total number of comments received, numbers agreeing/disagreeing) | There were a total of six respondents to the public consultation. There was broad agreement in the analysis and conclusions reached. One respondent disagreed with some of the conclusions reached regarding SMP designations, however their reasoning was not very robust. | |

**Section 3 - Regulatory Obligations**

**Please state where applicable:**

| | | | |
|---|---|---|---|
| **3.1** | The legal basis for the obligations to be imposed, maintained, amended or withdrawn (Articles 9 to 13 of Directive 2002/19/EC (Access Directive)) | The following obligations are proposed under the Access Regulations which transpose Articles 9 to 13 of Directive 2002/19/EC (Access Directive):<br>• Transparency – Regulation 10<br>• Non-discrimination – Regulation 11<br>• Accounting Separation – Regulation 12<br>• Access to, and use of, specific network facilities – Regulation 13<br>Price Control and Cost Accounting – Regulation 14 | Pages 115 - 168 |
| **3.2** | The reasons for which the imposition, maintenance or amendment of obligations on undertakings is considered proportional and justified in the light of the objectives laid down in Article 8 of Directive 2002/21/EC (Framework Directive). Alternatively, indicate the paragraphs, sections or pages of the draft measure where such information is to be found | Such information can be found in Section 11 and 12 of this document. | Pages 115-175 |
| **3.3** | If the remedies proposed are | Not Applicable | |

| | | | |
|---|---|---|---|
| | other than those set out in Articles 9 to 13 of Directive 2002/19/EC (Access Directive), please indicate which are the 'exceptional circumstances' within the meaning of Article 8(3) thereof which justify the imposition of such remedies. Alternatively, indicate the paragraphs, sections or pages of the draft measure where such information is to be found | | |

**Section 4 - Compliance with international obligations**

**In relation to the third indent of the first subparagraph of Article 8(3) of Directive 2002/19/EC (Access Directive), please state where applicable:**

| | | | |
|---|---|---|---|
| **4.1** | Whether the proposed draft measure intends to impose, amend or withdraw obligations on market players as provided for in Article 8(5) of Directive 2002/19/EC (Access Directive) | Not Applicable | |
| **4.2** | The name(s) of the undertaking(s) concerned | Not Applicable | |
| **4.3** | Which are the international commitments entered by the Community and its Member States that need to be respected | Not Applicable | |

# Appendix H: Market Review Methodology

## Background

Regulation 26 of the *Framework Regulations* requires ComReg to, inter , define relevant markets for the purposes of the *Framework Regulations*, taking utmost account of the *Relevant Markets Recommendation*. The *Relevant Markets Recommendation* provides[142] that a market review must be undertaken for the purposes of Article 18 of the *Universal Service Directive*, which covers controls on the provision of the minimum set of leased lines.

Article 18 of the *Universal Service Directive* has been transposed into Irish law by Regulation 15 of the *Universal Service Regulations*. Regulation 15 of the *Universal Service Regulations* requires ComReg, where it determines, as a result of a market review, that a relevant market consisting of the provision of part or all of the minimum set of leased lines,[143] is not effectively competitive, to impose obligations regarding such provision and regarding the conditions for such provisions which are set out in Schedule 3 to the *Universal Service Regulations*, on an undertaking designated as having significant power in such relevant market.

Where as a result of such market review, ComReg determines that a relevant market for the provision of leased lines in the minimum set is effectively competitive, it is obliged to withdraw any obligations applicable to an undertaking on 24 July 2003, relating to leased lines, imposed under the European Communities (Leased Lines) Regulations 1998, which continued to apply to an undertaking by virtue of Regulation 13 of the *Universal Service Regulations*.

ComReg considers that leased lines are products and services provided in markets that exhibit a vertical structure having two broad categories: upstream and downstream.

Products and services lying upstream are said to be wholesale products and services, while products lying downstream are the retail equivalents. Wholesale operators in the upstream part of a market may offer these services and products to other authorised operators (OAOs), lying downstream and to their own downstream units.

ComReg has identified terminating and trunk segments as the principal products and services lying upstream. ComReg also believes that trunk and terminating segments of leased lines are complementary products, rather than substitutes as leased lines are provided end-to-end. In other words, trunk segments are not a substitute for terminating segments and vice versa. The market dynamics may result in changes to the location of the boundary between terminating and trunk segment of a leased line. This is discussed in detail in section 8 of the paper.

[142] See paragraph 7 of the Annex to the Relevant Markets Recommendation.

[143] As identified in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive.

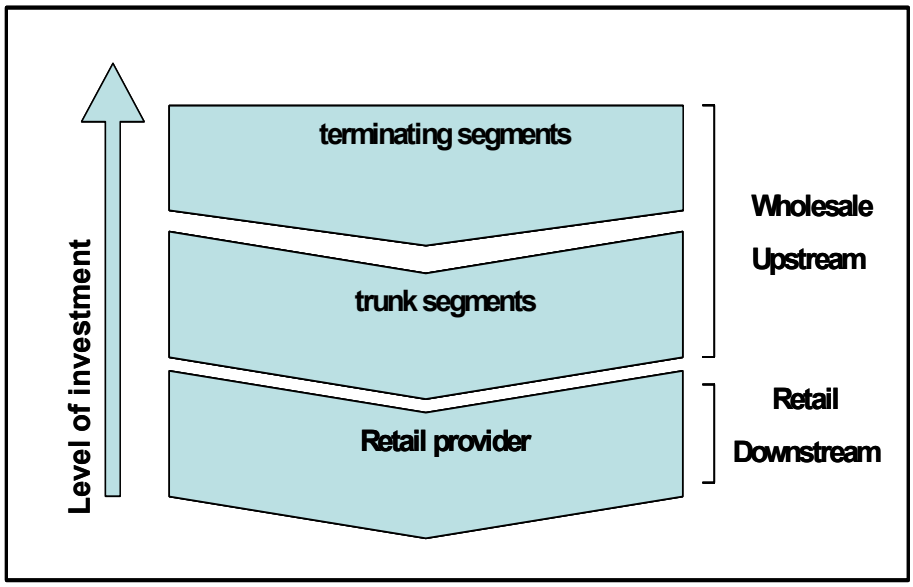


**Figure A. G. 1: Provision of leased line services – vertical structure**

Products and services sold directly to final consumers, as opposed to those sold to Other Authorised Operators (OAOs) who use these as inputs to produce their own services, are said to be retail products and services.

Some operators provide both wholesale and retail products and services. Such operators are said to be vertically integrated. A vertically integrated operator is active in both upstream and downstream components of a market and could potentially leverage market power from the upstream component to the closely related downstream component, where it holds upstream market power.

Some operators provide products and services exclusively in either the wholesale (e.g. ESB Telecom) or retail components (e.g. Colt).

The demand for wholesale products and services, which are used as inputs to the supply of retail products and services necessarily derive from the demand for the retail products and services (e.g. retail leased lines, mobile and fixed voice services). At the wholesale level, a substantial proportion of leased lines are used by fixed and mobile operators for "own use".

ComReg defines a wholesale leased line as one which is sold onto an authorised ECN or ECS operator. A retail leased line is one which is sold to any other party other than an authorised operator.

ComReg has considered whether an operator's self supplied trunk and terminating segments imposes a competitive constraint on its wholesale trunk and terminating product (supplied to third parties). ComReg notes that demand for trunk and terminating segments derives not only from the retail leased lines but also from the provision of many other retail services i.e. fixed voice services. In the case where an operator provides voice services on its own network using point to point capacity, this too would have to be factored in as self supplied trunk and terminating segments.

ComReg takes the view that, were it to consider all self supplied trunk and terminating segments used as inputs for the provision point to point capacity this would result in an unquantifiable market and artificial analysis. Essentially, it would be an investigation of

total network capacity, which is not the intended purpose. Thus in the relevant markets ComReg excludes self supplied trunk and terminating segments in the analysis of the wholesale markets.

ComReg takes the view where self provided trunk and terminating segments are used for the provision of retail leased lines the competitive effect will be captured in the respective retail markets.

There are a number of network technologies (e.g. Ethernet) which can be configured to offer services which are similar, but not identical, in functionality to the main retail products and services considered in this review. Such services may represent a competitive constraint from the demand-side.

## Methodology for defining markets

The *Framework Regulations* require ComReg to define relevant markets appropriate to national circumstances, in particular the relevant geographic markets within Ireland, in accordance with the market definition procedure outlined in the *Framework Regulations*. This obligation applies to both the relevant markets identified in the *Relevant Markets Recommendation* and to additional relevant markets that ComReg may consider to merit investigation. In accordance with the *Framework Regulations*, the market definition exercise must be carried out in accordance with the principles of competition rules and must take "utmost account" of the *Relevant Markets Recommendation*, as well as the *SMP Guidelines*[144] [145].

The purpose of the market definition procedure is to identify in a systematic way the competitive constraints that undertakings encounter, thereby also facilitating the subsequent market review procedure. According to the European Court of Justice,[146] a relevant product market comprises all products or services that are sufficiently interchangeable or substitutable with its products, not only in terms of the objective characteristic of those products, their prices or their intended use, but also in terms of the conditions of competition and/or the structure of supply and demand for the product in question.

The approach to defining markets concentrates on identifying effective competitive constraints. These constraints comprise demand-side substitution and supply-side substitution.

In this review ComReg defines markets on a forward-looking basis. This is in accordance with the European Commission SMP Guidelines: "In particular, a dynamic, rather than a static approach is required when carrying out a prospective, or forward-looking, market analysis"[147].

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[144] Framework Regulation 27.

[145] Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic networks and services, OJ 2002 C 165/3, ("*The SMP Guidelines*").

[146] See, for example, Case 322/81, Michelin v. Commission [1983] ECR 3461, as well as the Commission Notice on the definition of relevant markets for the purposes of Community competition law ("the Commission Notice on Market Definition"), OJ 1997 C 372/3, and *The SMP Guidelines*.

147 Para 35. SMP Guidelines.

For the purpose of defining the relevant market ComReg will take into account a range of measures in assessing demand and supply substitution, including the SSNIP (small but significant non transitory increase in price) test where practicable[148][149]. It is important to emphasise that the SSNIP test is but one example of methods applied to define a relevant market.

Under that test, a particular service or set of services constitutes a separate relevant product market if a hypothetical monopoly supplier could impose a small but significant,[150] non-transitory increase in price above the competitive level without losing sales to the extent that such an increase in prices would not prove to be unprofitable[151]. On the demand-side, the market definition exercise is concerned with the likely competitive response of a body of customers that is not necessarily the majority of customers[152].

In principle the 'hypothetical monopolist test' is relevant only with regard to products or services, the price of which is freely determined and not subject to regulation. However, in regulated communications markets prices are often subject to control. *The SMP Guidelines* state that where a service or product is offered at a regulated, cost-based price, then such price is presumed, in the absence of evidence to the contrary, to be set at what would otherwise be a competitive level and should serve as the starting point for applying a SSNIP test.[153] It is also remarked that:

*"prices which result from price regulation which does not aim at ensuring that prices are cost-based, but rather at ensuring an affordable offer within the context of the provision of universal services, may not be presumed to be set at a competitive level, nor should they serve as a starting point for applying the SSNIP test."*

The importance of using the competitive price level as the starting point in the SSNIP test stems from the need to avoid what is known in competition analysis as the 'cellophane fallacy'[154]. By using the competitive price level in the SSNIP test, which ComReg notes

[148] See the Commission Notice on Market Definition, *The SMP Guidelines* and ComReg's Market Data Information Notice for additional guidance. Applying the SSNIP test, one tries to ascertain if there is demand-side substitution or supply-side substitution. Demand-side substitution occurs where customers purchasing a particular product or service would switch to readily available substitutes if there is a small but significant, non-transitory price increase (in the range of 5% to 10%). Supply-side substitution occurs where if a hypothetical monopoly supplier were to impose a small (in the range of 5% to 10%) but significant, non-transitory price increase above the competitive level, substitution occurs between suppliers thereby rendering such a rise in prices as being unprofitable.

[149] See: Competition Authority Discussion paper No. 11 "Market Power and Market Definition in Competition Analysis: Some Practical Issues", Patrick Massey, October 2000.

[150] Usually calculated at between 5% and 10%, depending on the particular product and the market circumstances.

[151] See the Commission Notice on Market Definition, the SMP Guidelines and ComReg's Market Data Information Notice for additional guidance.

[152] See, for example, Case 85/76, Hoffman-La Roche & Co. A. G. v. Commission, [1979] ECR 461, as well as Case 66/ 86, Ahmed Saeed Flugreisen v. Zentrale zur Bekämpfung unlauteren Weltbewerbs, [1989] ECR 803.

[153] Para 42 SMP Guidelines.

[154] The *cellophane fallacy* derives its name from the 1956 Du Pont case in the United States involving the market for cellophane, see "The role of market definition in monopoly and

may not always be easily observed in the complex markets in this review, a too broad a definition of the market is avoided. Use of the competitive price level in the SSNIP test also ensures that in the subsequent market analysis a correct assessment of market power is made.

A relevant geographic market comprises the area in which the undertakings concerned are involved in the supply and demand of products and/or services, in which the conditions of competition are sufficiently homogeneous and which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas.

ComReg believes the hypothetical monopolist test should be applied initially in a context where regulation is absent, as this leads to the correct identification of market power in unregulated markets for the purposes of competition analysis and consequently allows for an appropriate selection of remedies. By applying the hypothetical monopolist test in the absence of regulation the problem of circularity is avoided[155].

In the vertical structure relevant to this review ComReg believes that markets should be defined initially at the retail level, and then, given the retail markets defined, at the wholesale level.

## Scope of Review

Article 16(2) of the *Universal Service Directive*[156] provides that the European Commission shall indicate relevant markets for the obligations relating to retail markets in the *Relevant Markets Recommendation* to be adopted in accordance with Article 15 of the *Framework Directive*.[157]

*The Relevant Market Recommendation* refers to ‘dedicated access’ (or connections) as one of the three commonly available forms of Internet access, in its discussion of 'access to data and related services at fixed locations'. In addition, it identifies the 'minimum set' of leased lines as a 'specific set of retail markets', namely, those specified in Article 18 of the *Universal Service Directive* and *Commission Decision of 24 July 2003 on the minimum set of leased lines with harmonised characteristics and associated standards referred to in*

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dominance inquiries”, UK Office of Fair Trading Economic Discussion Paper 2, July 2001. Many commentators have noted since the Du Pont case that the court incorrectly applied the SSNIP test by starting with current prices which were above competitive levels. A firm possessing market power will likely set a price above the competitive level and consequently the own-price elasticity of demand will be higher than that prevailing at the competitive price level. While this observed elasticity could be used as evidence to infer that there are close demand-side substitutes constraining a hypothetical monopolist to make a profitable price increase, it would be a mistake to conclude that the firm does not possess market power. For this reason, it is important that the SSNIP test is initially conducted using the competitive price level.

[155] Circularity occurs when markets are defined in the presence of regulation. This is because regulation implies the existence of market power, and market power implies a market. Hence regulation already implies a market is defined.

[156] Directive 2002/22/EC of the European Parliament and of the Council of 7 March 2002 on universal service and users' rights relating to electronic communications networks and services.

[157] 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.

*Article 18 of the Universal Service Directive*[158]. *The Relevant Market Recommendation* goes on to state that the European Commission does not believe that it is necessary to identify specific markets for each category of leased line, given that it believes that the market structure will be similar for each. It also states that the European Commission does not believe that it is necessary to expand the retail categories[159], given the presumption that regulatory intervention at the wholesale level should address any problems that arise.

In relation to the identification of relevant markets at national level, the European Commission identifies the key elements in demand and supply for dedicated connections as being: bandwidth, distance and the location(s) to be served. It also notes that there may be qualitative distinguishing characteristics (*e.g.,* where distinctions are made between voice grade and data grade circuits).

*The Relevant Market Recommendation* states that the European Commission considers that it is possible to define retail and wholesale markets that are broadly parallel. It goes on to state that the European Commission believes that, at the wholesale level, it is possible to distinguish separate markets for 'terminating segments' and 'trunk segments'. The European Commission considers that the definition of what constitutes a terminating segment is a matter most appropriately determined by the relevant NRA.

In addition, the European Commission takes the view that certain trunk segments might not 'support' alternative suppliers (while others are likely to do so). Finally, the European Commission notes that further segmentation on the basis of capacity might be justified in particular national circumstances.

Within this review ComReg will consider retail and wholesale leased lines where both points are *within* Ireland. Concurrently, ComReg will carry out a consultation on international retail leased lines (one point of which is in Ireland and the other outside of Ireland[160]) having found national and international leased lines to be in separate markets. See section 4.

## Analysis and remedies

Having firstly identified the relevant markets relating to leased lines in Ireland, ComReg is required to conduct an analysis of whether the markets are effectively competitive by reference to whether any given undertaking or undertakings is/are deemed to hold SMP in those markets. Recital 27 of the *Framework Directive* states that a relevant market will not be effectively competitive "*where there are one or more undertakings with significant market power*". Regulation 25(1) of the *Framework Regulations* states that:

"*A reference in these Regulations ... to an undertaking with significant market power is to an ... undertaking (whether individually or jointly with others) [which] enjoys a position which is equivalent to dominance of that market, that is to say a position of economic strength affording it the power to behave to an appreciable extent, independently of competitors, customers, and, ultimately, consumers*".

[158] 2003/548/EC. For the purposes of clarity assume that this definition is a 'traditional leased line'.

[159] The Commission have identified that a review of the Recommended markets will not take place until 2005. Minimum set of leased lines - Report on the public consultation and future actions. COCOM04-34.

[160] Market Review: International Leased Lines ComReg 04/60

Accordingly, an undertaking may be deemed to have SMP either individually or jointly with other undertakings in a relevant market. In addition, where an undertaking has SMP on a relevant market, it may also be deemed to have SMP on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking[161].

The concept of SMP is synonymous with the concept of dominance under Article 82 EC[162]. The classic legal formulation for single dominance can be found in the case of *United Brands v. Commission*,[163] where the European Court of Justice held that a dominant position:

*"... relates to a position of economic strength enjoyed by a 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."*[164]

Under this formulation, the ability to act independently and the ability to prevent competition appear to be interrelated.

In any finding of single dominance, it is true that the larger the market share enjoyed by an individual undertaking, the greater the likelihood of a finding of SMP. This is because, at least in the case where they are very high, market shares serve as a proxy for market power. Thus, the Court of Justice in Hoffman-La Roche v. Commission[165] held that:

*"... very large market 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..."*

An undertaking will be subject to the rebuttable presumption that it is in a position of single dominance if it holds in excess of a 50% market share[166]. Even a market share as low as 40% might, given the existence of other relevant factors, be supportive of a finding of single dominance[167].

Despite its relative importance, market share cannot be relied upon, to the exclusion of other factors, as being indicative of dominance. Thus, any finding of single dominance would need to take into account, especially in the context of this review, a number of additional factors, including:

- historical conduct suggestive of the existence of market power e.g. pricing
- technological advantages

[161] Framework Regulations, Regulation 25(3).

[162] Refer to the SMP Guidelines, para. 70.

[163] Case 27/76, [1978] ECR 207.

[164] At para. 65. See also SMP Guidelines, at paras. 72-74.

[165] Case 85/76, [1979] ECR 461, at para. 41.

[166] See AKZO v. Commission, Case C-62/86, [1991] ECRI-3359; approved in Hilti AG v. Commission, Case T-30/89, [1991] ECR II-1439.

[167] Op. cit., United Brands v. Commission; cf. Commission's Report on Competition Policy (1980), at para. 50. See also SMP Guidelines, at paras. 75-76.

- infrastructure advantages e.g. ubiquity
- barriers to entry
- economies of scale and scope
- vertical integration
- potential competition
- countervailing bargaining power
- barriers to switching

If an undertaking has SMP on a relevant market, the legislation calls for obligations (remedies) to be imposed on the undertaking which should be proportionate and justified in light of ComReg's objectives as set out in the Communications Regulation Act 2002.

Recital 26 of the Universal Service Directive[168] states that in the presence of retail and wholesale markets:

*"regulatory controls on retail services should only be imposed where national regulatory authorities consider that relevant wholesale measures…would fail to achieve the objective of ensuring effective competition and public interest."*

Obligations applying to the minimum set are specifically referenced in the Universal Service Regulations and are mandatory once a finding of SMP is made.

Accordingly, ComReg will consider whether the application of remedies in wholesale markets is sufficient for ensuring effective competition. Where a remedy in a wholesale market is required, its application may affect the nature of competitive constraints in closely related downstream retail markets. For this reason, ComReg would need to reassess the definition of retail markets should a wholesale remedy be proposed.

ComReg undertook its analysis in accordance with Figure A.G.2, but for presentational ease has chosen to present its discussion and proposals on wholesale and retail remedies in one section. See section 11:

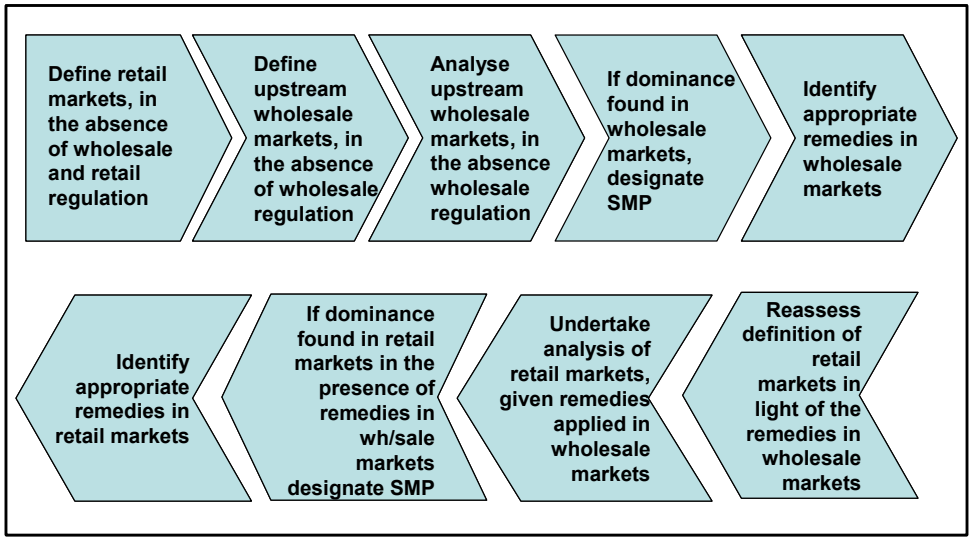


**Figure A.G. 2: Market Review Approach**

[168] Directive 2002/22/EC.

ComReg believes that the above sequence allows for the optimal analysis of the market and appropriate selection of remedies, where necessary.

## Review of Market Absent Regulation

### Introduction

In this review ComReg has undertaken an assessment of the relevant markets for retail and wholesale terminating and trunk segments. As outlined in the previously, it is necessary first to define markets before analysis of those markets is conducted. In this chapter ComReg presents its preliminary conclusion on the definition of the relevant markets, absent regulation in both retail and wholesale markets.

While the approach taken to define markets in this chapter abstracts from the practical realities, the methodology employed by ComReg is correct as it ensures that the assessment of market power at the wholesale level does not depend on a retail market definition that is influenced by remedies applied in wholesale markets. If there were such dependence, there would be a problem of circularity which could lead to inappropriate market definitions and the potential therefore to misidentify market power.

ComReg commences its market definition analysis by looking at retail markets, as the demand for upstream wholesale inputs that enable the delivery of products and services in the retail markets is derived from demands for retail services[169].

### Market definition

The process of establishing the relevant market boundaries starts by identifying two key dimensions: the products and services supplied and/or purchased and the geographic area from which the products and services are supplied or purchased[170] .

ComReg undertakes its analysis of market definition by considering candidate products and services in specific geographic areas and investigating the constraints on price setting behaviour of firms. ComReg will start with a narrow definition based on functional characteristics. As stated in Section 3 a candidate set of products and services are said to comprise a separate market (the relevant market) if a hypothetical monopoly supplier could impose a small but significant non-transitory increase in price (SSNIP) above the competitive level without losing sales to such a degree as to make it unprofitable.

A price increase is likely to be unprofitable when demand-side substitution and/or supply-side substitution effects constrain the behaviour of the hypothetical monopolist.

Demand-side substitution occurs when consumers are able to switch relatively easily to other substitutable products.

[169] Within this review, retail leased lines are considered. However other retail services (e.g. mobile) also influence the demand for wholesale leased lines. Operators providing "other" retail services will be prevented from acting in an exploitative behaviour through the imposition of remedies at the wholesale level for leased line.

[170] In some electronic communications markets a temporal dimension may be relevant. This is not considered to be the case in this review.

Supply-side substitution effects concerns the ability of existing firms to switch their production lines at relatively short notice (understood to mean within a year) in response to a price increase by the hypothetical monopolist and supply a substitute to the product(s) or service(s) in the candidate market. ComReg will need to ascertain whether a given supplier would actually use or switch its productive assets to produce relevant product(s) or service(s) in the candidate market. Mere hypothetical supply-side substitution is not sufficient for the purposes of market definition.

Confusion sometimes arises between what is considered to be a supply-side substitution (a factor relevant to market definition) and entry (potential competition) into a market (a factor usually taken into account in market analysis once the market has been defined)[171.] The European Commission in its SMP Guidelines notes:

*"Supply-side substitutability indicates whether suppliers other than those offering the product or services in question would switch in the immediate to short term their line of production or offer the relevant products or services without incurring significant additional costs[172]."*

ComReg realises that there can be a fine distinction between supply-side substitution and new entry. Both are forms of market entry and both represent a constraint on market power. ComReg takes account of both effects in this review, but in the interests of consistency ComReg will assess the constraining effect of any potential market entry once the market is defined by reference to, inter alia, supply-side substitution possibilities.

If demand-side and/or supply-side substitution effects are sufficiently constraining, then the candidate market should be expanded to include the substitute products. The responses to a price rise by a hypothetical monopolist supplier in this expanded group of products are then assessed. In this iterative fashion, the initial candidate market is progressively extended to include all those sources of close substitutes that would make it non-profit maximizing for a hypothetical monopolist to impose a price increase. ComReg will typically then consider the relevant market to be the smallest group of products and/or services that satisfies the SSNIP test.

An analogous process is used for defining the geographic boundaries. The market boundaries are gradually expanded to include those geographic areas where consumers may source close substitutes and from where firms may supply close substitutes in the event of a price increase.

## Absent regulation

The absence of regulation in both the wholesale and retail segments ought to strengthen the profitable opportunities for a vertically integrated hypothetical monopolist. For example, if the price of a retail service were increased by a small amount, a vertically integrated hypothetical monopolist may find it profitable to deny competitors access to wholesale elements that are used as inputs to the retail offerings and absent regulation may be in a position to exercise such denial.

The absence of regulation is likely to result in markets that would be defined on a narrower basis than in the presence of regulation, as competitive constraints would be less apparent. ComReg notes that the retail markets in the absence of regulation will be

[171] Para. 38 SMP Guidelines 2002/C 165/03.
[172] Para. 39 SMP Guidelines 2002/C 165/03.

no wider and likely narrower than the recommended markets specified by the European Commission in its Guidelines. The EC has recommended the market for retail leased lines up to and including those with a capacity of 2Mb/s.

## Appendix I – Progress Summary of MANs

The first phase MAN centres are: Athlone, Ballina/Kiltimagh, Carlow, Carrick-on Shannon, Clonmel, Cork City, Dungarvan, Galway City, Gweedore, Kilkenny, Letterkenny, Limerick City, Manorhamilton, Mullingar, Portlaoise, Roscommon, Tullamore, Waterford City, Wexford, Sligo, Dundalk, Drogheda, Cavan, Monaghan, Kingscourt and Carrigmacross.

In June 2004, the DCMNR announced the next phase of the Regional Broadband Programme. A further 41 towns are to be targeted. The 41 towns are: Athenry, Ballinasloe, Ballybofey, Bantry, Blarney, Bundoran, Carrigaline, Castleblaney, Castleisland, Castlerea, Claremorris, Clifden, Clones, Cobh, Cahir, Dingle, Donabate, Dunshaughlin, Enniskerry, Furbo, Kenmare, Kilcoole, Kildare, Kinsale, Knock, Longford, Maynooth, Midleton, Mitchelstown, Mountmellick, Navan, Nenagh, Newbridge, Rathangan, Ratoath, Sallins, Skerries, Skibereen, Tramore, Trim and Youghal. The relevant towns are highlighted illustrated on the map below.

## Regional Broadband Programme Update

Progress continued on phase one of the programme throughout quarters 1 & 2, with the majority of all construction work now complete as can be seen in the chart below.

- The Cork Metropolitan Area Network (MAN) was formally 'switched on' by the Minister in a ceremony at the National Software Centre in Mahon Co. Cork. The network is already offering services to consumers through Smart Telecom and Strencom
- The Minister announced the North-East Broadband Ring project in April. This project will add a further 6 MANs to the Regional Broadband Programme. These MANs will be in the towns of Cavan, Monaghan, Dundalk, Drogheda, Carrickmacross and Kingscourt. Sligo has also been added to the first phase list.

- The Dungarvan MAN was formally launched on the 20th May, the first of the six in the South East Region to be completed. Shortly after, on the 31st May, the Galway MAN was launched, with 48 kilometres of duct and over 260 access chambers serving locations around the city and extending to Oranmore and Carnmore to the east and Rahoon on the western side
- The Minister formally switched on the 15 million Limerick MAN on June 4th.This network consists of 42 kilometres of duct in two rings from Ballykeefe and Raheen, through the city centre and out to Castletroy and Annacotty. Savings realised on the construction of the MAN, will be used to build a 12-kilometre extension on the north side of the city.

Programme Summary

| Region | Coverage Area | Construction Commencement Date | Total Length of New Works | Progress To Date (% Complete) |
|---|---|---|---|---|
| Cork | Cork City & County | February 2003 | 54 Km | 100% |
| Galway | Galway City & County | February 2003 | 48 Km | 100% |
| Mayo | Ballina | March 2003 | 19 Km | 100% |
| Midlands | Athlone, Mullingar, Portlaoise, Tullamore & Roscommon | May 2003 | 77 Km | 100% |
| Limerick | Limerick City & County | May 2003 | 43 Km | 98% |
| SERA | Carlow, Kilkenny, Wexford, Waterford, Dungarvan & Clonmel | September 2003 | 86 Km | 99% |
| Leitrim | Carrick-On-Shannon & Manorhamilton | July 2003 | 15 Km | 100% |
| Donegal | Letterkenny<br>Gweedore | November 2003<br>September 2003 | 16.5 Km<br>4.5 Km | 100%<br>100% |

**Programme Summary**

# Appendix J – Leased Line Products and Pricing Assumptions

**eircom's analogue products**

| Analogue |
|---|
| 2 Wire Leased Line M1020/M1040 |

**eircom's digital products**

| Digital |
|---|
| 9.6 or 64 |
| 128 |
| 192 |
| 256 |
| 320 |
| 384 |
| 448 |
| 512 |
| 576 |
| 640 |
| 704 |
| 768 |
| 832 |
| 896 |
| 960 |
| 1,024 |
| 1,088 |
| 1,152 |
| 1,216 |
| 1,280 |
| 1,344 |
| 1,408 |
| 1,472 |
| 1,536 |
| 1,600 |
| 1,664 |
| 1,728 |
| 1,792 |
| 1,856 |
| 1,920 |
| 1,984 |
| 2,048 |
| 34 Mbits |

**Key Assumptions**

1. **All Prices quoted in Euro's.**
2. **Wholesale Rate at 8% Discount of Retail Rate.**
3. **Average distance of the Local Loop is 1.5 KM except for 2KM circuits where local loop distance is 2KM**
4. **Main Link Access Charge applies to all circuits where inter-exchange distance is greater than Zero KM.**

**5. Distance based local loop charge is applied to circuits with a bandwidth greater than 1MB, where the local loop**
**distance is in excess of 1.5 Km (Applies to 2 Km circuits only)**
**6. The distances quoted above are the main link distances i.e. for the 50km Circuit- 50 KM is the main link distance along**
**with the 1.5Km Local loop at both ends**
**7. The EU ceiling is the recommended price ceiling for the monthly rental charges for short distance leased line part circuits.**

# Appendix K – Respondents network diagrams

Figure A -

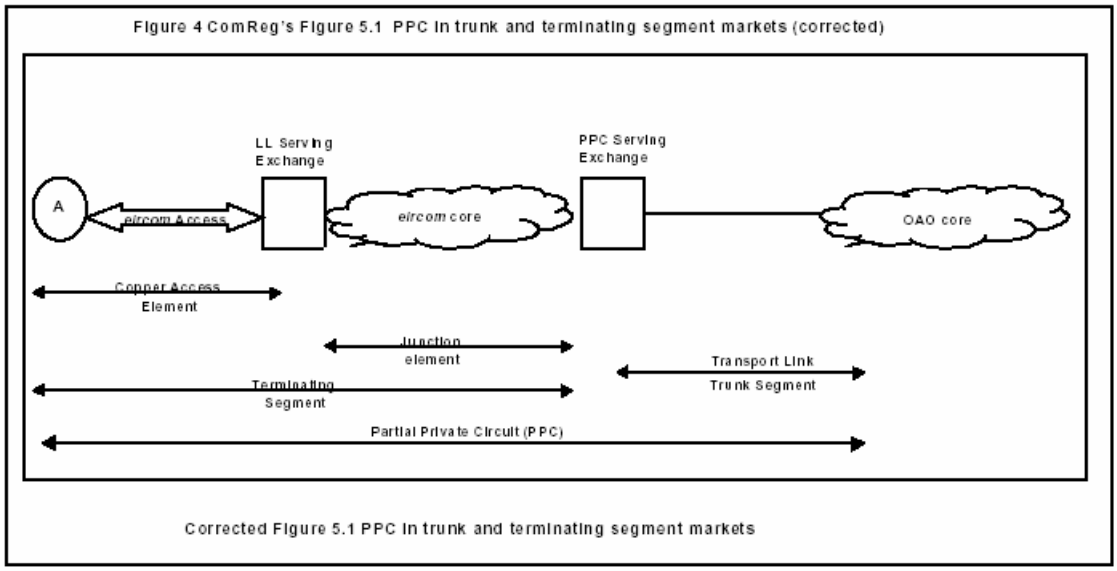


Figure B

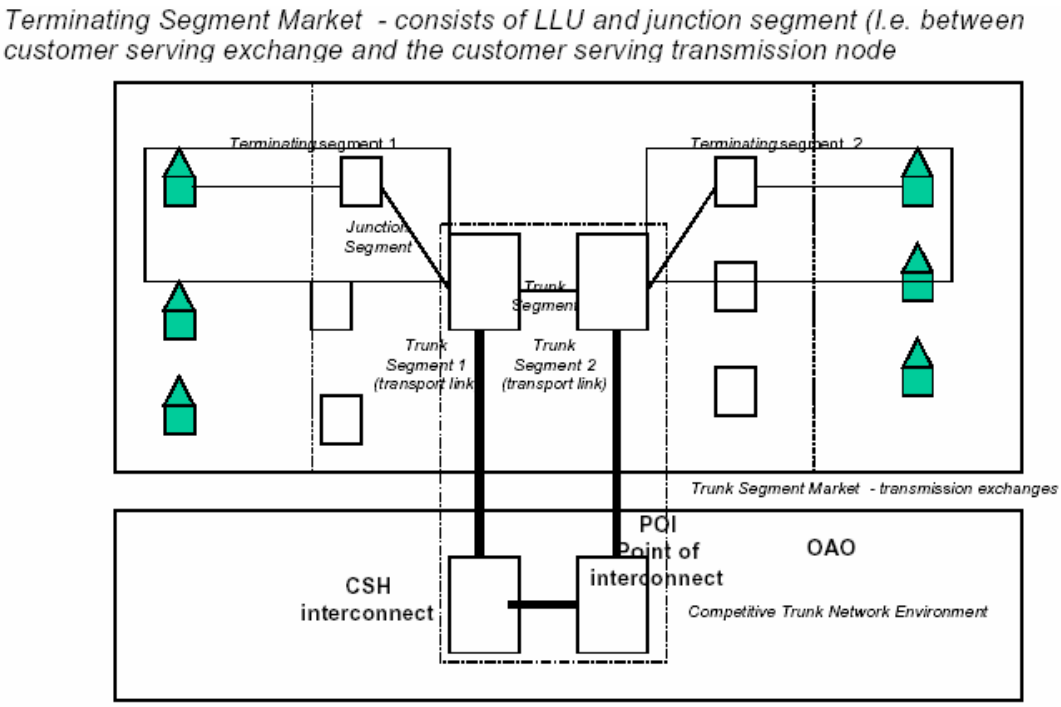
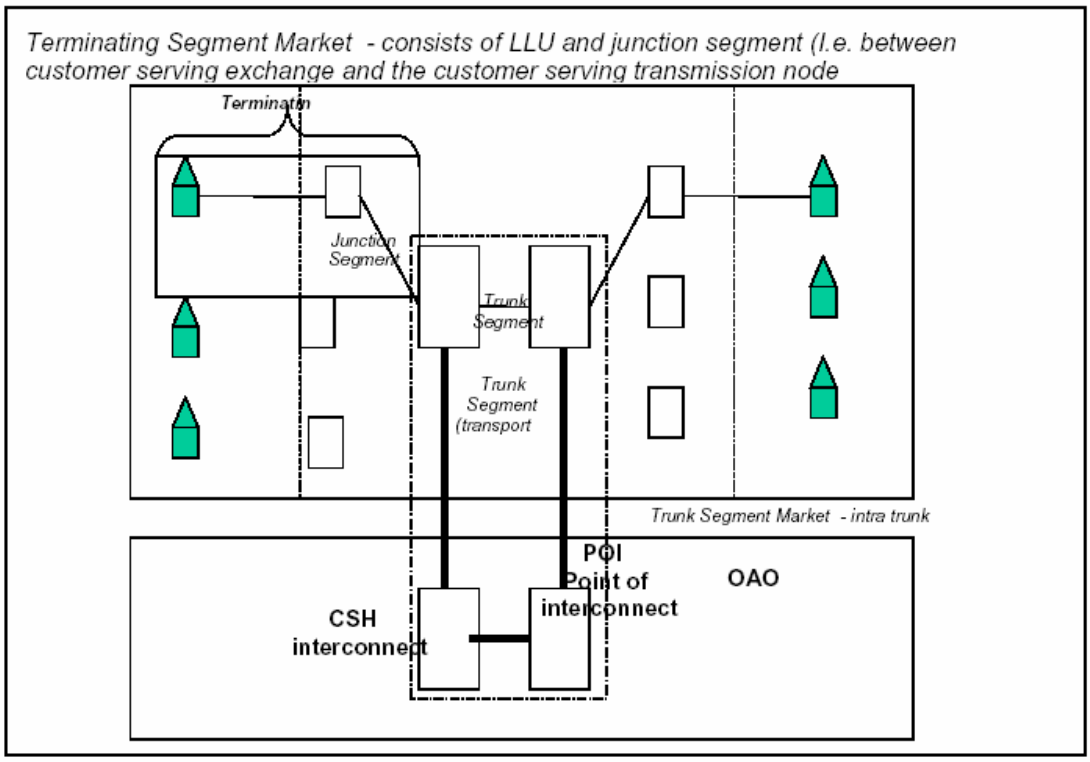
Figure C Proposed Boundary Definition – Trunk Segment – TerminatingSegment