



Consultation Paper

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

Document No:	04/59
Date:	04 June 2004

All responses to this consultation should be clearly marked:-
“Reference: Submission re ComReg 04/59” 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 16th
July 2004 to:

Ms. Suzanne Monaghan
Freepost
Commission for Communications Regulation
Abbey Court Irish Life Centre
Block DEF
Lower Abbey Street
Dublin 1
Ireland

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

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

Contents

1	Executive Summary	3
2	Introduction.....	6
	Objectives under the Communications Regulation Act 2002	6
	Regulatory Framework	7
	ComReg Procedure.....	8
	Liaison with Competition Authority	8
	Consultation.....	8
	Structure of Consultation Document	9
3	Methodology	10
	<i>Background.....</i>	10
	<i>Methodology for defining markets.....</i>	11
	<i>Scope of Review</i>	14
	<i>Analysis and remedies</i>	15
4	Retail Markets in the Absence of Regulation	19
	<i>Introduction</i>	19
	<i>Market definition.....</i>	19
	<i>Absent regulation.....</i>	20
5	Wholesale Market Definition	22
	<i>Introduction</i>	22
	<i>Are PPCs and leased lines substitute products?.....</i>	27
	<i>Are trunk and terminating segments in the same market?</i>	29
	<i>Where is the appropriate boundary split between trunk and terminating segments?</i>	30
	<i>Are there different terminating segment markets for different bandwidths?</i>	31
	<i>Are there different trunk segment markets for different bandwidths?.....</i>	32
	GEOGRAPHIC MARKET.....	32
	<i>Is there a national geographic market for terminating segments?</i>	32
	<i>Is there a national geographic market for trunk segments?</i>	33
	<i>Conclusion</i>	34
6	Wholesale Market Analysis	35
	Background.....	35
	Market Structure	35
	Analysis of relevant wholesale markets	37
	<i>Wholesale trunk segments</i>	37
	<i>Wholesale terminating segments.....</i>	44
	Conclusion	48
7	Designation Of Undertakings With Significant Market Power in the Wholesale Market	50
8	Retail Market Definition in the Presence of Wholesale Remedies	51
	<i>Introduction</i>	51
	<i>Market Definition</i>	52
	Are international leased lines in the same market for national leased lines?	53
	Are leased lines of all bandwidths in the same relevant market?	54

Wholesale Terminating and Trunk Segments of Leased Lines and
Retail Leased Lines (National)

Are analogue and digital leased lines in the same retail market?	59
Are the minimum set of leased lines and other data services included in the same retail relevant market?	61
The Geographic Market.....	66
Preliminary Conclusion	68
9 Leased Lines above 2 Mb/s	70
10 Retail Market Analysis	72
Background.....	72
Leased Lines up to and including 2 Mb/s.....	72
11 Designation Of Undertakings With Significant Market Power in the Retail Market.....	82
12 Proposed Wholesale and Retail Market Remedies	83
SMP Markets.....	83
Competition problems	83
Leverage: Vertical.....	83
<i>Denial of access.....</i>	<i>84</i>
<i>Leveraging by non-price means</i>	<i>84</i>
<i>Leveraging by pricing means</i>	<i>86</i>
Leverage: Horizontal	88
Single market dominance	88
Available remedies	89
Wholesale Remedies	89
<i>Accounting Separation</i>	<i>91</i>
<i>Price control and cost accounting</i>	<i>92</i>
Retail obligations.....	93
Principles to be applied when selecting remedies	93
Remedies proposed.....	95
<i>Access to and use of specific network facilities</i>	<i>95</i>
<i>Non- discrimination</i>	<i>100</i>
<i>Transparency</i>	<i>102</i>
<i>Price control and Cost Accounting.....</i>	<i>104</i>
<i>Accounting Separation</i>	<i>109</i>
Retail Obligations.....	110
13 Regulatory Impact Assessment.....	118
14 Submitting Comments.....	119
Appendix A – Consultation Questions	120
Annex B – Leased Line Products and Pricing Assumptions.....	124
Appendix C – Progress Summary of MANs.....	126

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 competitive¹.
- 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 Guidelines*”).
- 1.3 ComReg welcomes comments from all interested parties on the questions posed in this market review. Comments should be supplied only in writing on or before 16 July. Under Article 5 of the Framework Regulations and 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 Offices².
- 1.4 ComReg is obliged to conduct market reviews of Markets 7 (minimum set of retail leased lines up to and including 2 Mb/s), 13 (Wholesale Terminating Segments), and 14 (Wholesale Trunk Segments) of the *Relevant Markets Recommendation* to determine whether the markets are effectively competitive or whether there is an operator with Significant Market Power (SMP).
- 1.5 At the retail level the European Commission has defined the minimum set by referencing standards published in the Official Journal; these correspond to ‘traditional’ (i.e. point to point uncontended symmetric analogue and digital capacity) interface leased lines from 64 kb/s up to and including 2 Mb/s.
- 1.6 For the period under review, ComReg has concluded that the split at 2 Mb/s is appropriate given the differences in supply and demand side substitution above and below that breakpoint and has thus defined the retail market in accordance with the Commission’s recommended market.
- 1.7 ComReg proposes to designate *eircom* as having significant market power (SMP) in the relevant market for the provision of national retail leased lines up to and including 2 Mb/s. Designation with SMP automatically triggers the imposition of

¹ Framework Regulations 26 and 27.

² ComReg may publish submissions with the Response to Consultation, subject to confidentiality. ComReg appreciates that many of the issues raised in this paper may require respondents to provide confidential information if their comments are to be meaningful. Respondents are requested to clearly identify confidential material and if possible to include it in a separate annex to the response. Such information will be treated as strictly confidential.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

non-discrimination, cost-orientation, and transparency obligations set out in the Universal Service Regulations³.

- 1.8 The market for retail leased lines above 2Mb/s is not a recommended market in the list set out by the European Commission. Data available to ComReg at this time indicates that this market is competitive; therefore all obligations which currently exist in respect of this market will be removed at the conclusion of the market review process.
- 1.9 Concurrently, ComReg will carry out a consultation⁴ on international leased lines, reviewing retail capacity between two points, one of which is in Ireland and the other outside of Ireland.
- 1.10 Two wholesale markets are identified in the list of recommended markets; these are wholesale terminating and wholesale trunk segments. The Explanatory Memorandum states that it is at the discretion of the NRA to decide the appropriate boundary split between terminating and trunk segments of a leased line.
- 1.11 ComReg proposes that the boundary should be at the serving exchange i.e. the nearest exchange to the customer. However, ComReg consults as to whether industry believes that a narrower definition of the trunk market is appropriate. In this paper ComReg also consults as to whether or not a single market may be more appropriate for Ireland. In the case of Ireland, no products are available which sit in only one market.
- 1.12 Both markets, for wholesale terminating and trunk segments cover all bandwidths and are national in scope.
- 1.13 ComReg proposes to designate *eircom* as having significant market power (SMP) in the relevant markets for the provision of wholesale terminating and trunk segments of leased lines.
- 1.14 According to the Guidelines⁵, the purpose of imposing *ex-ante* obligations on undertakings designated as having SMP is to ensure that undertakings cannot use their market power either to restrict or distort competition on the relevant market, or to leverage such market power onto adjacent markets. ComReg can only impose *ex-ante* regulation “in markets where there are one or more undertakings with significant market power and where national and Community competition law remedies are not sufficient”⁶.
- 1.15 The Guidelines make it clear that the mere designation of an undertaking as having SMP on a given market, without imposing any appropriate regulatory obligations, is inconsistent with the provisions of the new regulatory framework, notably Article 16

³ SI No 308 of 2003 European Communities (Electronic Communications Networks and Services) Universal Service and Users’ Rights Regulations, 2003.

⁴ Market Review: International Leased Lines ComReg 04/60.

⁵ Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services at paragraph 16.

⁶ Recital 27 of the Framework Directive.

(4) of the Framework Directive⁷. Indeed, NRAs must impose at least one regulatory obligation on an undertaking that has been designated with SMP⁸.

1.16 In respect of the wholesale markets ComReg is obliged to consider imposing obligations listed in Articles 9 to Article 13 inclusive of the Access Directive⁹ which are as follows:

- Obligation of transparency
- Obligation of non-discrimination
- Obligation of accounting separation
- Obligation of access to, and use of, specific network facilities
- Price control and cost accounting obligations

1.17 ComReg proposes to impose obligations under each of these.

1.18 This document is a consultation document. ComReg would welcome comments from all interested parties on the questions posed in this market review and will accept written comments on or before 16th July 2004. As required by Regulation 20 of the *Framework Regulations*, the draft measure will then be 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.

⁷ Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services at paragraph 114.

⁸ *Ibid*, paragraphs 21 and 114.

⁹ Article 8(2) of Access Directive

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 and ensure that end-users derive the maximum benefit in terms of price, choice and quality.
- 2.3 In exercising its functions, ComReg is obliged to follow the Policy Directions given by the Minister for Communications, Marine and Natural Resources (26th March 2004). This requires ComReg to focus on the promotion of competition as a key objective by implementing remedies counteracting or removing barriers to market entry and supporting entry by new players to existing markets. In particular, ComReg is required to support initiatives to develop broadband and also is required to review the pricing structure for leased lines (reporting to the Minister in sectors which are not competitive and identifying any additional measures required).

Regulatory Framework

- 2.4 Four sets of Regulations,¹⁰ which transpose into Irish law four European Community directives on electronic communications networks and services,¹¹ entered into force in Ireland on 25th 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.
- 2.5 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*¹². In addition, ComReg is required to conduct an analysis of the relevant markets to decide whether or not they are effectively competitive¹³. Where it concludes that the relevant market is not effectively competitive (*i.e.*, where there are one or more undertakings 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.¹⁴ 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)¹⁵.

¹⁰ 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”).

¹¹ 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.

¹² Framework Regulation 26.

¹³ Framework Regulation 27.

¹⁴ Framework Regulation 27(4).

¹⁵ Framework Regulation 27(3).

- 2.6 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.¹⁶ In carrying out market definition and market analysis, ComReg must take the utmost account of the *Relevant Market Recommendation* and the European Commission's *Guidelines*.

ComReg Procedure

- 2.7 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 carry out thoroughly its respective market definition and market analysis procedures based on established economic and legal principles, and taking the utmost account of the *The Recommendation* and the *Guidelines*.

Liaison with Competition Authority

- 2.8 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 National Competition Authorities (NCAs) under Section 34 of the Competition Act 2002. In December 2002, ComReg signed a co-operation agreement with the Competition Authority for a period of three years.¹⁷ To facilitate market review decision-making, a Steering Group which included a representative from the Competition Authority was established by ComReg. Through this forum, the Competition Authority has been informed and involved throughout the market review decision making process.

Consultation

- 2.9 All comments to this public consultation are welcome. However, it would make the task of analysing responses easier if comments were referenced to the relevant question numbers from this document.
- 2.10 The consultation period will run from 4th June to 16th July 2004 during which ComReg welcomes written comments on any of the issues raised in this paper.
- 2.11 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 adopting the measure.

¹⁶ Framework Regulations 26 and 27.

¹⁷ ComReg Document No. 03/06

Structure of Consultation Document

The remainder of this consultation document is structured as follows:

- **Section 3** presents ComReg's methodology for defining and analysing relevant markets.
- **Section 4** presents ComReg's definition of the retail market absent of regulation both in the retail and wholesale market
- **Section 5** presents the preliminary conclusions on the definition of the wholesale leased line market(s). This section consists of a review of the market definition procedure and its scope, as well as demand- and supply-side assessments at the wholesale level;
- **Section 6** presents ComReg's market analysis for the wholesale leased line markets and presents ComReg's preliminary view on whether this market is effectively competitive;
- **Section 7** presents ComReg's preliminary view on those undertakings with significant market power in the wholesale market;
- **Section 8** presents the preliminary conclusions on the definition of the retail leased line market, in the presence of proposed wholesale remedies. 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 retail level;
- **Section 9** presents ComReg's examination of retail services which fall outside the scope of the recommended market for the minimum set of leased lines.
- **Section 10** presents ComReg's market analysis for the retail market, in the presence of proposed wholesale remedies for leased lines and presents ComReg's preliminary view on whether this market is effectively competitive;
- **Section 11** presents ComReg's preliminary view on those undertakings with significant market power in the retail market;
- **Section 12** 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 13** outlines the nature of the regulatory impact assessment that needs to be conducted in relation to any proposed regulatory intervention markets; and
- **Section 14** provides details with regard to the submission of comments on this consultation document.

3 Methodology

Background

- 3.1 Regulation 26 of the *Framework Regulations* requires ComReg to, inter alia, define relevant markets for the purposes of the *Framework Regulations*, taking utmost account of the *Relevant Markets Recommendation*. The *Relevant Markets Recommendation* provides¹⁸ 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.
- 3.2 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,¹⁹ 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.
- 3.3 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*.
- 3.4 ComReg considers that leased lines are products and services provided in markets that exhibit a vertical structure having two broad categories: upstream and downstream.
- 3.5 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.
- 3.6 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 five of the paper.

¹⁸ See paragraph 7 of the Annex to the Relevant Markets Recommendation.

¹⁹ As identified in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive.

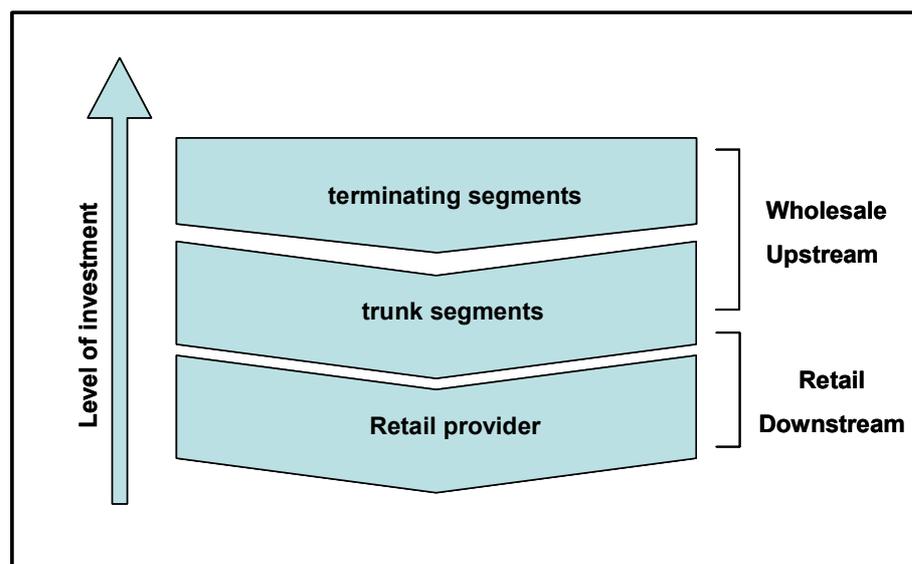


Figure 3.1: Provision of leased line services – vertical structure

- 3.7 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.
- 3.8 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.
- 3.9 Some operators provide products and services exclusively in either the wholesale (e.g. ESB Telecom) or retail components (e.g. Colt).
- 3.10 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”.
- 3.11 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

- 3.12 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*^{20 21}.

- 3.13 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,²² 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.
- 3.14 The approach to defining markets concentrates on identifying effective competitive constraints. These constraints comprise demand-side substitution and supply-side substitution.
- 3.15 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”²³.
- 3.16 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 practicable²⁴²⁵. It is important to emphasise that the SSNIP test is but one example of methods applied to define a relevant market.
- 3.17 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,²⁶ non-transitory increase in price above the competitive

²⁰ Framework Regulation 27.

²¹ 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 Guidelines”).

²² 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 Guidelines.

²³ Para 35. SMP Guidelines.

²⁴ See the Commission Notice on Market Definition, the 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.

²⁵ See: Competition Authority Discussion paper No. 11 “Market Power and Market Definition in Competition Analysis: Some Practical Issues”, Patrick Massey, October 2000.

²⁶ Usually calculated at between 5% and 10%, depending on the particular product and the market circumstances.

level without losing sales to the extent that such a rise in prices would not prove to be unprofitable²⁷. The market definition exercise is concerned with the likely competitive response of a body of customers that is not necessarily the majority of customers²⁸.

- 3.18 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 Guidelines state that where a service or product is offered at a regulated, cost-based price, then such a 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.²⁹ 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.”

- 3.19 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’³⁰. By using the competitive price level in the SSNIP test, which ComReg notes 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.
- 3.20 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

²⁷ See the Commission Notice on Market Definition, the SMP Guidelines and ComReg’s Market Data Information Notice for additional guidance.

²⁸ 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 Wettbewerbs, [1989] ECR 803.

²⁹ Para 42 SMP Guidelines.

³⁰ 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 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.

can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas.

- 3.21 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 and allows for the optimal selection of remedies. By applying the hypothetical monopolist test in the absence of regulation the problem of circularity is avoided³¹.
- 3.22 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

- 3.23 Article 16(2) of the *Universal Service Directive*³² 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*.³³
- 3.24 The *Explanatory Memorandum* 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 Article 18 of the Universal Service Directive*³⁴. The *Explanatory Memorandum* 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 categories³⁵, given the presumption that regulatory intervention at the wholesale level should address any problems that arise.
- 3.25 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

³¹ 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.

³² 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.

³³ 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.

³⁴ 2003/548/EC. For the purposes of clarity assume that this definition is a 'traditional leased line'.

³⁵ The Commission has 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.

- served. It also notes that there may be qualitative distinguishing characteristics (e.g., where distinctions are made between voice grade and data grade circuits).
- 3.26 The Explanatory Memorandum 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.
- 3.27 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.
- 3.28 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 Ireland³⁶) having found national and international leased lines to be in separate markets. See section 8.

Analysis and remedies

- 3.29 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”.*
- 3.30 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 undertaking³⁷.
- 3.31 The concept of SMP is synonymous with the concept of dominance under Article 82 EC³⁸. The classic legal formulation for single dominance can be found

³⁶ Market Review: International Leased Lines ComReg 04/60

³⁷ Framework Regulations, Regulation 25(3)

³⁸ Refer to the SMP Guidelines, para. 70.

in the case of *United Brands v. Commission*,³⁹ 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."*⁴⁰

3.32 Under this formulation, the ability to act independently and the ability to prevent competition appear to be interrelated.

3.33 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*⁴¹ 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..."

3.34 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 share⁴². Even a market share as low as 40% might, given the existence of other relevant factors, be supportive of a finding of single dominance⁴³.

3.35 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
- infrastructure advantages e.g. ubiquity
- barriers to entry
- economies of scale and scope
- vertical integration
- potential competition
- countervailing bargaining power
- barriers to switching

3.36 If an undertaking has SMP on a relevant market, the legislation calls for obligations (remedies) to be imposed on the undertaking which should be

³⁹ Case 27/76, [1978] ECR 207.

⁴⁰ At para. 65. See also SMP Guidelines, at paras. 72-74.

⁴¹ Case 85/76, [1979] ECR 461, at para. 41.

⁴² See *AKZO v. Commission*, Case C-62/86, [1991] ECR I-3359; approved in *Hilti AG v. Commission*, Case T-30/89, [1991] ECR II-1439.

⁴³ *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.

proportionate and justified in light of ComReg’s objectives as set out in the Communications Regulation Act 2002.

3.37 Recital 26 of the Universal Service Directive⁴⁴ 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.”

3.38 Obligations applying to the minimum set are specifically referenced in the *Universal Service Regulations* and are mandatory once a finding of SMP is made.

3.39 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.

3.40 ComReg undertook its analysis in accordance with Figure 3.2, but for presentational ease has chosen to present its discussion and proposals on wholesale and retail remedies in one section. See Section 12:

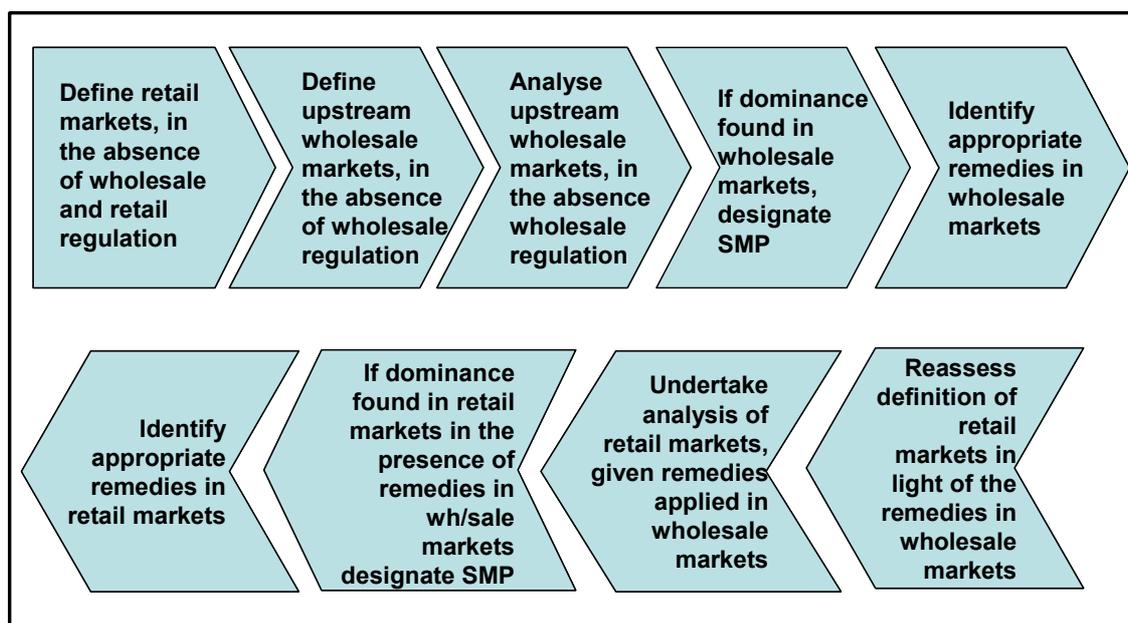


Figure 3.2: Market Review Approach

3.41 ComReg believes that the above sequence allows for the optimal analysis of the market and appropriate selection of remedies, where necessary.

⁴⁴ Directive 2002/22/EC.

Wholesale Terminating and Trunk Segments of Leased Lines and
Retail Leased Lines (National)

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

4 Retail Markets in the Absence of Regulation

Introduction

- 4.1 In this review ComReg has undertaken an assessment of the relevant markets for retail and wholesale terminating and trunk segments. As outlined in the previous chapter, 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.
- 4.2 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.
- 4.3 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 services⁴⁵.

Market definition

- 4.4 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 purchased⁴⁶.
- 4.5 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.
- 4.6 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.
- 4.7 Demand-side substitution occurs when consumers are able to switch relatively easily to other substitutable products.

⁴⁵ 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 lines.

⁴⁶ In some electronic communications markets a temporal dimension may be relevant. This is not considered to be the case in this review.

- 4.8 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.
- 4.9 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)⁴⁷. 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 costs⁴⁸.”*
- 4.10 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.
- 4.11 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.
- 4.12 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

- 4.13 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

⁴⁷ Para. 38 SMP Guidelines 2002/C 165/03.

⁴⁸ Para. 39 SMP Guidelines 2002/C 165/03.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

inputs to the retail offerings and absent regulation may be in a position to exercise such denial.

- 4.14 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 its Guidelines. The EC has recommended the market for retail leased lines up to and including those with a capacity of 2Mb/s.

5 Wholesale Market Definition

Introduction

- 5.1 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 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 self-supply of electronic communications services, on the other.
- 5.2 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)⁴⁹. It takes account of the identified retail market in this chapter.
- 5.3 ComReg has noted that a number of the wholesale inputs are required to provide services in a number of retail markets, some of which fall into this review and others lying outside the scope of this review. As such, it is mindful of the potential impact that regulatory obligations (on any entity found to have SMP in the relevant wholesale markets) would have on retail services falling outside the scope of this review.
- 5.4 The *Recommendation on Relevant Markets* defines distinct markets for trunk and terminating segments. However, the majority of Irish wholesale leased lines are acquired on an end-to-end basis. This does not alter the inherent functional complementarity of terminating segments and trunk capacity.
- 5.5 When defining the market for leased lines, ComReg has commenced its analysis by assessing objective or functional characteristics that buyers (whether they are end-users or other operators) seek when purchasing a leased line. ComReg understands that the functional characteristics of leased lines products and services comprise:
- ‘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’**
- 5.6 Products with the above functional characteristics which may not conform to what are termed ‘traditional’ leased lines⁵⁰ can be viewed as very close or even perfect substitutes to ‘traditional’ leased lines. Other products which do not exhibit all of the above characteristics may not be close substitutes to ‘traditional’ leased lines and as such would represent a lesser competitive

49 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.

⁵⁰ A ‘traditional leased line’ is one which conforms to standards of the ‘minimum set’ of leased lines at set out in the Official Journal. 2003/548/EC.

constraint on the demand-side in the market. In order to inform a view on the demand-side substitution effects, ComReg assesses each characteristic in turn to identify those products that represent close or perfect substitutes to ‘traditional’ leased lines.

(1) Switching or routing functionality not controlled by the end user

- 5.7 Considering the text from the Explanatory Memorandum and in Directive 92/44/EC which states “do not include on demand switching (switching functions which the user can control as part of the leased line provision)”, ComReg considers that the functionality offered to customers in a leased lines market excludes services which allow the end user to switch the terminating points on demand. For example, a solution which would allow an end user to send data and choose to have that data arrive at different destinations on demand would fall outside the leased line definition. This would suggest that an IP VPN, as a result of the user defining the destination in the IP data packet, would not conform to the functional characteristics offered in a leased line market.
- 5.8 Removing the functionality of on-demand switching constrains the market to simply capacity between two points. ComReg considers a typical configuration to be either a ‘traditional’ leased line (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.
- 5.9 ComReg has considered the particular cases of channelised leased line bearers and ATM products to see if these are consistent with the constraint of ‘point to point’. Although such products physically look like point to multipoint architecture, ComReg considers these to be included in the definition. A channelised product is typically purchased by larger customers who take physical delivery of one access circuit (a 2 Mb/s bearer) in a central site, over which channels are provided which link to other sites. Such a product is consistent with the definition in that there is no on-demand switching and the point to point element is maintained by having identified circuits within the bearer capacity associated with individual terminating points. Therefore, ComReg also considers channelised bearers to conform to the definition.
- 5.10 Similarly, ComReg considers that this test would be passed by ATM circuits as these offer permanent virtual paths with the paths defined at the time of provision; albeit over what physically looks like a point to multipoint architecture.
- 5.11 In the case of IP solutions, ComReg believes that these differ from the previous examples. Typically the destination point is not 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. Where an IP circuit is used in a point to point context, it reflects the functional definition proposed by ComReg.
- 5.12 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 more recently channelised leased lines), the market appears to be moving to use of IP VPNs. ComReg understands the inherent additional flexibility that is provided by IP VPNs as customers do not have to define specifically the point to point connectivity at the time of provisioning, and can adjust this easily and flexibly to suit their needs. Whilst the wholesale products considered under the scope of this review form inputs into retail markets, ComReg does not believe that wholesale variants of IP VPNs fall within the scope of the definition of the functional characteristics of the leased lines as they fail the test due to their use of on-demand switching.

(2) Transparency

- 5.13 Directive 92/44/EC defines leased lines as “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.
- 5.14 ComReg considers that transparency can be demonstrated by the ability to receive information as it is 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.
- 5.15 An important consideration for users is the type of distortion: a customer using a leased line for voice could tolerate little packet delay but a customer using a leased line 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.
- 5.16 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 data priorities such as ATM⁵¹ CBR⁵², VBR⁵³, etc. There are currently technical solutions for such customer requirements on platforms using SDH, ATM and IP.
- 5.17 ComReg therefore proposes that the reference to transparency is not relevant when describing the product services offered in the leased line markets. ComReg

⁵¹ Asynchronous Transfer Mode

⁵² Constant bit rate is a service class for ATM networks in which the cell rate takes a constant, fixed value specified in the connection contract.

⁵³ Variable bit rate is a service class for ATM networks in which the cell rate is allowed to vary in accordance with the connection contract. In VBR systems the output bit rate varies (as opposed to constant bit rate, in which it does not).

also considers that any issues regarding transparency of connectivity are covered explained by the inclusion of the functionality of “point to point” as set out above.

(4) Dedicated

- 5.18 The Explanatory Memorandum, in its headline describing these markets, refers to ‘dedicated’ capacity and connections. 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. Dedicated capacity can also be provided in other ways, where the management functions can be employed to allow the customer the experience of a dedicated circuit without that being assigned exclusively and permanently to that customer for their use.
- 5.19 For example, an IP network can be dimensioned such that there is capacity available to the IP platform to meet all customer requirements; however the capacity used by a customer does not have to be specifically dedicated to that customer. Likewise, an ATM trunk network sold as ‘best efforts’ may be dimensioned so that there is sufficient capacity in the network for a customer to reasonably expect to have 100% of the capacity available at all times.
- 5.20 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.
- 5.21 In the trunk network 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 – in effect the operator deals with any failure of this regime through customer service tools. ComReg considers that this form of overbooking is insufficient to fail the test of ‘dedicated’ capacity.
- 5.22 Given these considerations ComReg considers “dedicated” requires 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 falls within the wholesale trunk or terminating market in this context.

(5) Contention

- 5.23 ComReg considers it to be likely and indeed probable, given the experience in other countries, that during the period of this review new symmetric products will be introduced which may offer contended but symmetrical capacity such as symmetric DSL products.
- 5.24 Technologies of this type may or may not include contention and where they do the level of contention can be defined by the operator. ComReg’s preliminary assessment is that symmetric products of this type, contended or uncontended, offer the functional characteristics of products and services in a leased line market.

(6) Symmetric

5.25 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).

5.26 ComReg understands that leased lines 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’

5.27 In defining the boundaries for the relevant markets in this review, the above functional characteristics are used primarily to inform the demand-side substitution analysis.

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.

5.28 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, where an operator can choose to deliver a leased line using one of these platforms.

5.29 In its analysis of the wholesale markets the following criteria are considered:

- Are wholesale leased lines and PPCs substitutable products?
- Are trunk and terminating segments in the same relevant market?
- Where is the appropriate bandwidth 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?
- Is there a national geographic market for trunk segments?

Are PPCs and leased lines substitute products?

5.30 A Partial Private Circuit (PPC) can be used to provide symmetric capacity between two points, one of which is over an interconnect link at an OAO location, the other which is at a customer site. Typically, a PPC includes a terminating segment and a trunk segment with the handover of the circuit to an operator over an interconnect link, such as an In Span Handover (ISH). The end user line (EUL), which is the circuit from the eircom 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 intended to offer a more commercial alternative to leased lines, where an operator has invested in its own infrastructure. 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 5.1.

5.31 Both PPCs and leased lines fall within the functional definition of a leased line, thus from a demand-side analysis they form functional equivalents. Figure 5.1 below 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.

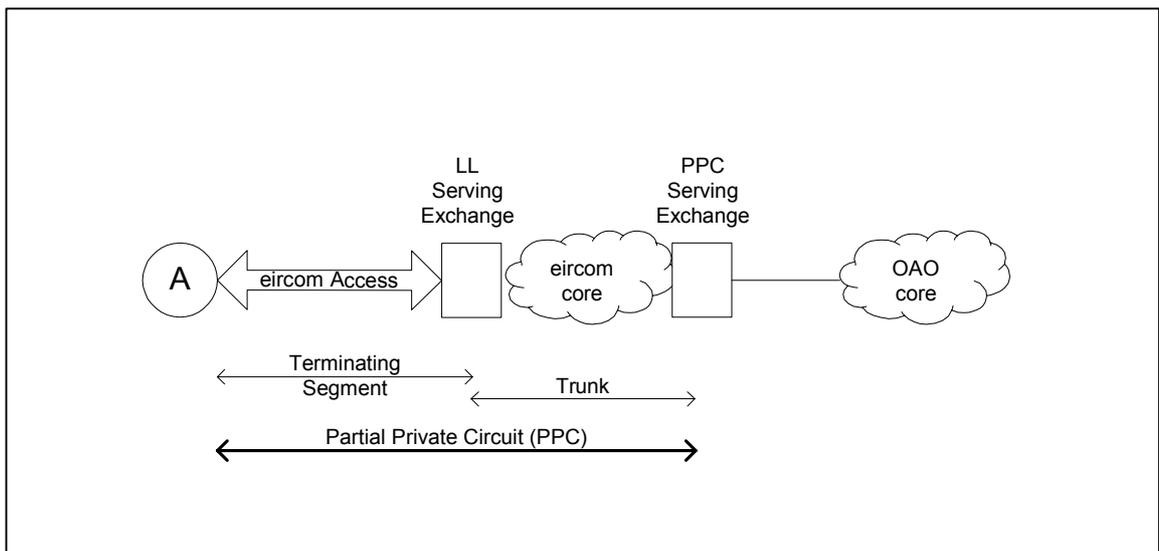


Figure 5.1 PPC in trunk and terminating segment markets

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

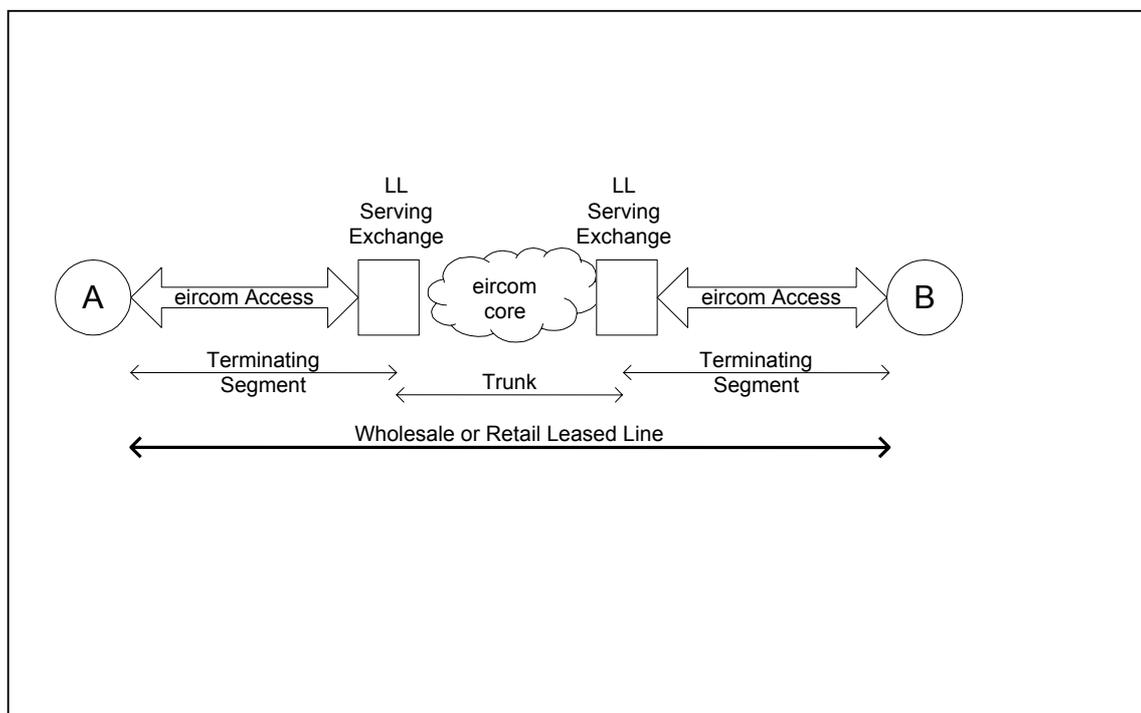


Figure 5.2 Trunk and terminating segments of a leased line

Demand side

- 5.32 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 as part of an STM 1 channelised circuit (the transport link).
- 5.33 PPCs allow the OAO to avail of network efficiencies by aggregating numerous circuits (either PPCs or voice interconnect circuits) on a single transport link. In order to take advantage of the efficiencies, they must make network investment that would not be required if they were purchasing the capacity as wholesale leased lines. 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.
- 5.34 Since the introduction of PPCs, many OAOs have been reviewing the wholesale leased lines that they purchase from eircom and evaluating which circuits it would be economically efficient to migrate 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 OAO's network.

5.35 As a result of this 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 on the relative prices, therefore in the event of a price increase by a hypothetical monopolist these two products will act as a constraint on each other. For this reason ComReg believes that from a demand side, PPCs and wholesale leased lines are in a single market.

Supply side

5.36 ComReg notes that in Ireland eircom, the primary provider of wholesale leased lines, is also 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 5-10% price increase by a hypothetical monopolist, as PPCs are regulatory products.

5.37 However ComReg is of the view that from a 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 price increase by a hypothetical monopolist and provide leased lines. Essentially it is the same technology that is used for the provision of leased line and PPC services. From this analysis ComReg is of the preliminary view that from the supply side PPCs and leased lines are in the same market.

Conclusion

5.38 ComReg is of the preliminary view that from a demand side and a supply side perspective PPCs and wholesale leased lines are in the same market.

Are trunk and terminating segments in the same market?

5.39 Figure 5.2 above shows the construction of a wholesale (and retail) leased line given ComReg's proposed split of trunk and terminating segments at the customer's leased line service exchange. Note that it is assumed that the infrastructure is provided by eircom in this example; however it could be provided by any operator.

5.40 The Recommendation defines two separate markets for trunk and terminating segments and leaves it to the NRA to determine where the boundary lies in terms 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.

5.41 Initial consideration of trunk and terminating segments might seem to indicate that there is a single leased lines market. This is reflected by the products which are available in the Irish market which are sold on an end-to-end basis (be they wholesale leased lines or PPCs). Currently, it is not possible to discretely purchase either terminating or trunk capacity.

- 5.42 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.
- 5.43 However, from the supply side a hypothetical existing supplier of wholesale trunk capacity (or terminating segments) would not be in the position to respond to an increase of 5 to 10% in the price for wholesale terminating segments (or wholesale trunk capacity), given the significant investments required to construct the necessary infrastructure (many of them sunk costs for trenching and ducting) to provide such terminating segments (or to build a new network).
- 5.44 ComReg is of the view that terminating and trunk segments of leased lines are separate markets. In a market for terminating segments, regardless of where one would precisely draw the boundary, it 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 of scale, scope and density. As such, it is unlikely that facilities-based competition will emerge to a significant degree, in the market for terminating segments, in the foreseeable future.
- 5.45 The market for trunk segments however, has potentially lower barriers to entry and indeed, within Ireland there is a certain level, albeit limited, of investment in infrastructure, between urban centres. This is far from sufficient to describe a trunk market as either competitive or prospectively competitive.
- 5.46 Analysis of supply and demand-side substitutability indicates that wholesale trunk segments and terminating segments of leased lines do not fall within the same relevant product market.

Q. 4. Do you agree that there should be separate markets for trunk segments and terminating segments? Please detail your response with supporting evidence.

Where is the appropriate boundary split between trunk and terminating segments?

- 5.47 As noted above, the terminating segments are dominated by local access infrastructure to which there are significant barriers to entry preventing competing operators from replicating competing infrastructure. The trunk segment is characterised by smaller barriers to replication. The more broadly one defines the trunk network i.e. the further one pushes the boundary towards the end user site, the more difficult it becomes to replicate sufficient infrastructure to render the market effectively competitive.
- 5.48 ComReg believes, that over the period of the review, there is no prospect of the trunk market becoming effectively competitive. Thus at this point in time, the definition of the boundary has little practical impact on the market analysis.

- 5.49 However, given the prospect of further infrastructure investment by competing operators over the longer term, the definition should be monitored and reassessed in light of market developments.
- 5.50 ComReg has considered that it could be appropriate to specify the boundary on a geographic basis, for instance, by defining the trunk market as being that between named cities. However, ComReg considers that the potential geographic differences are better considered when assessing the geographic scope of the market.
- 5.51 It may also be appropriate to identify the boundary split based on operators' network hierarchy. 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 topology of major networks in Ireland is not characterised by a structured hierarchical network and thus does not provide a clear guide to where the boundary between trunk and terminating markets should lie.
- 5.52 Having considered this issue, ComReg considers that the "boundary" between trunk capacity and terminating segments should be defined as occurring at the customer's 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 transparent capacity), 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.

Q. 5. 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.

Are there different terminating segment markets for different bandwidths?

- 5.53 In the analysis of the retail level ComReg has considered the impact of bandwidth on market definition. In the examination of the wholesale terminating market, it is important to note that while demand for wholesale terminating segments is influenced by the demand in the retail market (for example, the use of retail leased lines as an input for the provision of managed data services); it is largely derived from OAOs' own use by both fixed and mobile operators. In fact the two largest wholesale customers are mobile operators, which purchase wholesale leased lines exclusively for own use.

- 5.54 Moreover, the Recommendation for Relevant Markets 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.
- 5.55 ComReg does not see any evidence to suggest that the relevant product market should be differentiated by bandwidth. Therefore ComReg concludes that in line with the Recommendation there should be a single market for terminating segments of all bandwidths.

Q. 6. 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.

Are there different trunk segment markets for different bandwidths?

- 5.56 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 the ability of an operator to share the burden of sunk costs of construction and provides an incentive 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).
- 5.57 The incentives are such that any existing supplier of trunk capacity would respond to a price increase for a particular bandwidth by switching supply to that market.

Q. 7. Do you agree that there is a single relevant product and service market for trunk segments, not differentiate by bandwidth? If not please provide the reasoning for your views.

GEOGRAPHIC MARKET

Is there a national geographic market for terminating segments?

- 5.58 ComReg has considered the scope of the geographic market, within which the conditions of supply and demand for the relevant wholesale terminating segments are sufficiently homogeneous.
- 5.59 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. It is therefore necessary to consider demand- and supply-side substitution between terminating segments in Dublin and terminating segments in other geographic areas.

- 5.60 From a demand-side analysis, however there is no substitutability between terminating segments in different geographic locations i.e. a consumer is unlikely to respond to a price increase by a hypothetical monopolist for terminating segments in Dublin and substitute for segments in Galway.
- 5.61 A supply-side analysis shows that there is no cost differential based on geographic locations in the provision of terminating segments. However, the competitive dynamics in Dublin differ, due to a greater scale of density and a greater concentration for demand for high bandwidth circuits. Where such demand exists, it is economically feasible to build dedicated infrastructure to supply the customer.
- 5.62 A demand side analysis appears to indicate that the take-up of terminating segments on alternative metropolitan area networks (MANs) within Dublin is limited in the context of a country-wide market. If however, there were a hypothetical Dublin only market, the total demand for terminating segments over MANs would still be low in comparison to the market share of the national operators. Thus, it appears that the conditions of competition are not significantly different between Dublin and the rest of the country. The demand for terminating segments over MANs in the context of a wider national market is *de minimis*.
- 5.63 Despite there being more providers of terminating segments within Dublin the products are homogeneous inside Dublin and out. Operators generally do not differentiate their marketing strategies in respect to the product, price or discount in the Dublin area, compared to the rest of Ireland. On this basis ComReg is of the view that the product is homogeneous nationally.
- 5.64 ComReg also notes that a number of alternative operators with infrastructure in Dublin also have expanded their networks into other regions.
- 5.65 On balance, ComReg's preliminary conclusion is that demand- and supply-side factors support the definition of a national relevant market for wholesale terminating capacity. However, if the market does change significantly within the timeframe of this review in a way that indicates that the market may be other than national, ComReg will reconsider the geographic scope of the market.

Is there a national geographic market for trunk segments?

- 5.66 ComReg has considered the scope of the geographic market within which the conditions of supply and demand for the relevant wholesale trunk segments are sufficiently homogeneous.
- 5.67 ComReg does recognise that on certain routes within Ireland, there is greater availability of competing network infrastructure e.g. on the Dublin to Cork route. It is therefore necessary to consider demand and supply side substitution between trunk segments on different routes.
- 5.68 ComReg is of the view that a demand-side analysis shows that there is no substitutability between trunk segments in different geographic locations i.e. a consumer is unlikely to respond to a price increase by a hypothetical monopolist for trunk segments on a Dublin to Cork for substitutability route for trunk segments from Dublin to Galway.

- 5.69 Despite there being more providers for trunk segments on certain routes the product is homogeneous on all routes. In general, operators do not differentiate their marketing strategies in respect to the product, price or discount on a route by route basis. On this basis ComReg is of the view that heterogeneous market conditions do not exist.
- 5.70 Despite the route-specific nature of wholesale trunk segments, ComReg understands 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. Competing operators for example, EsatBT and ESB Telecom, can both have fixed networks built around fibre rings.
- 5.71 ComReg is of the view that there is no cost differential based on geographic locations in the provision of trunk segments i.e. cost of dig, ducting and operating cost.
- 5.72 Given the limited extent of alternative network coverage and the network-based construction of such alternative infrastructure, ComReg takes the preliminary view that it is inappropriate to define the relevant wholesale trunk segments geographic market on a route-by-route basis in Ireland. From a practical point of view, ComReg is of the view that this could result in a proliferation of markets, especially considering that the dynamics of the market could rapidly change over time, making market definitions obsolete and lacking the necessary accuracy. This would increase the risk of inappropriate decisions.
- 5.73 On balance, it is ComReg's preliminary conclusion that demand- and supply-side factors support the definition of a national relevant market for wholesale trunk segments.

Conclusion

- 5.74 ComReg is of the preliminary view, that there are two distinct markets at the wholesale level for terminating and trunk segments, not segmented by bandwidth and national in scope.

Q. 8. 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.

6 Wholesale Market Analysis

Background

6.1 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*”.

6.2 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 undertaking⁵⁴.

6.3 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*⁵⁵. Those criteria considered to be probative on the issue of SMP are discussed below.

Market Structure

6.4 An overview of the main leased line providers and their network infrastructure is provided below. There are a number of operators with backbone networks used for the provision of leased line products and services, the largest operator being eircom. EsatBT also has a national, albeit limited in scope, network. ESB Telecom, a subsidiary of the electricity supply company within Ireland provides dark fibre at the wholesale level. ntl and Chorus, both cable TV service providers, have a limited amount of network infrastructure on specific routes, which is used to provide leased line services. Additionally, there are a number of publicly- and privately-owned Metropolitan Area Networks within the main population areas of Ireland, which are utilised to provide wholesale and retail leased lines. Details of each are outlined below.

⁵⁴ Framework Regulations, Regulation 25(3).

⁵⁵ Framework Regulation 25(2).

eircom

6.5 eircom is the only provider of analogue leased lines; it also provides digital leased lines. eircom has the most significant and pervasive 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 only transmit data at access speeds of up to 2Mb/s, whereas the fibre network can deliver capacity at much higher speeds.

Esat BT

6.6 The second major provider in Ireland is Esat BT which was bought by British Telecom during 2000. Prior to the purchase Esat had engaged in a joint venture with CIE to build additional fibre networks along its railway infrastructure.

ESB Telecom

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

6.8 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.

ntl

6.9 ntl’s main business is cableTV services. The company also has some fibre infrastructure coming from Belfast to Dundalk and then onto Dublin.

Chorus Communications

6.10 Chorus has a fibre network, linking Ennis, Shannon, Limerick, and Cork.

Metro Networks

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

Table 6.1: Operator with Metro Networks

Resellers

6.11 A number of operators do not have infrastructure themselves, but purchase capacity at the wholesale level to provide leased lines at the retail level; these include Netsource, C&W (outside of Dublin), and Sprint.

Government Funded Metropolitan Area Networks

6.12 As part of a national policy to facilitate broadband access, the Department of Communications, Marine and Natural Resources will invest €65 million in total in Phase I to fund the construction of 50,000 km of carrier-neutral, open-access metropolitan area networks for 19 towns throughout the country. This is equivalent to 90% of total funding. The network will consist of metropolitan fibre optic cable and ducts. The original network will be aimed at business users, schools, local government offices, hospitals and other public institutions. While framework agreements have already been signed with primary suppliers of the network for Phase I, more opportunities will be available for Phases II and III over the next few years. A program summary outlining progress to date may be seen in Appendix C.

Analysis of relevant wholesale markets

Wholesale trunk segments

Market shares

6.13 As noted previously trunk segments are not purchased in isolation as wholesale leased lines are predominantly sold and purchased end to end. Due to a variance among operators in their interpretation of the terminating and trunk split, there are inherent difficulties in comparing data among operators. ComReg will therefore review market share in terms of the number of end to end circuits and the relative revenue earned. The diagrams below outline eircom's market share since Q2 2002⁵⁶.

6.14 Given that fact that there are few competing operators to eircom, and the limited geographic coverage of those which do exist, there appears to be no compelling reason why there should be a significant divergence in market share between trunk and terminating segments.

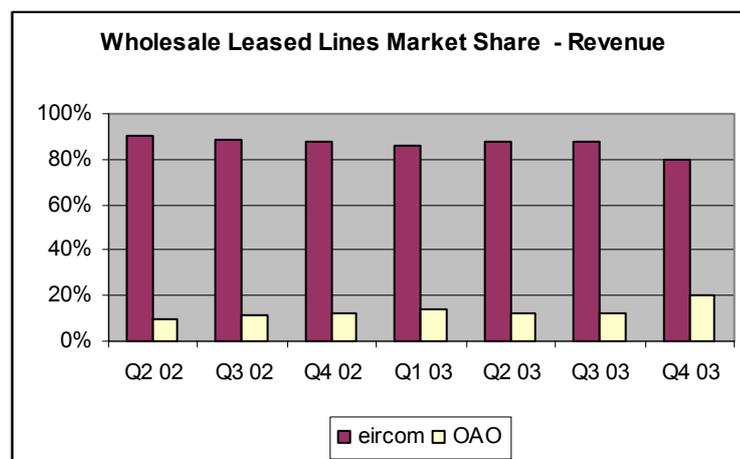


Figure 6.1: Wholesale Leased Lines Market Share - Revenue

⁵⁶ ComReg Quarterly Report Data

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

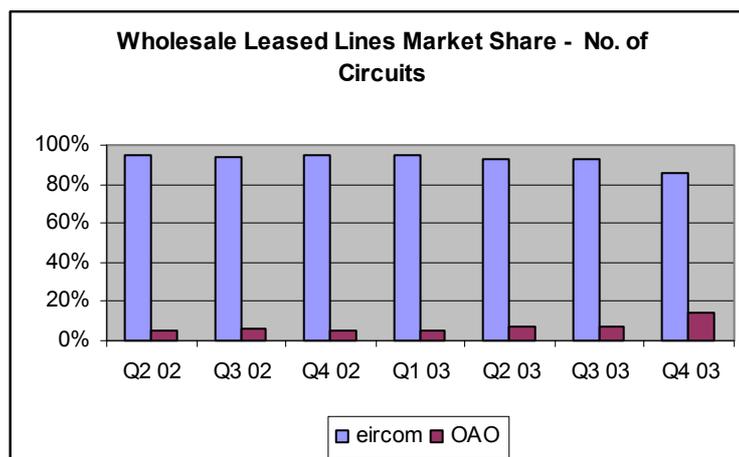


Figure 6.2: Wholesale Leased Lines Market Share – Number of Circuits

- 6.15 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 a lower revenue per circuit. It should also be noted that wholesale leased lines provided by OAOs are largely dependent on wholesale leased lines purchased from eircom rather than necessarily provided over their own infrastructure.
- 6.16 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 some small losses in market share.
- 6.17 The evidence shows 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 sufficiently stable over time⁵⁷. The market share strongly suggests that eircom is dominant.
- 6.18 This is consistent with competition law principles and the European Commission's *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 dominance, it is unlikely that a firm without a significant share of a relevant market would be in dominant position.

Pricing

- 6.19 Wholesale trunk segments can be purchased at the wholesale level only as part of a wholesale leased line product or a PPC. They cannot be provided separately and are supplied as parts of end-to-end circuits, priced on a 'retail-minus' basis or on a cost-orientated basis in the case of PPCs.

⁵⁷ 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.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

- 6.20 As a result of existing regulatory obligation eircom publishes its wholesale tariffs. OAOs do not have published tariffs and prices are usually derived from competitive tendering, where eircom's published price effectively constitutes a price ceiling.
- 6.21 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.

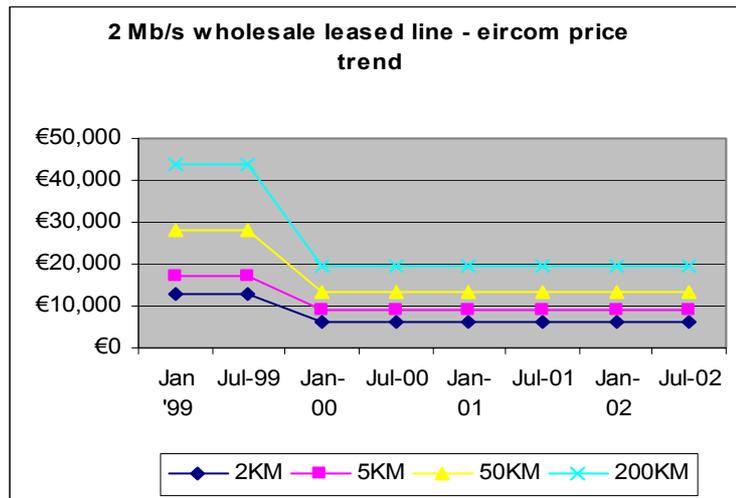


Figure 6.3: Prices for a 2 Mb/s leased line circuit (Euros)

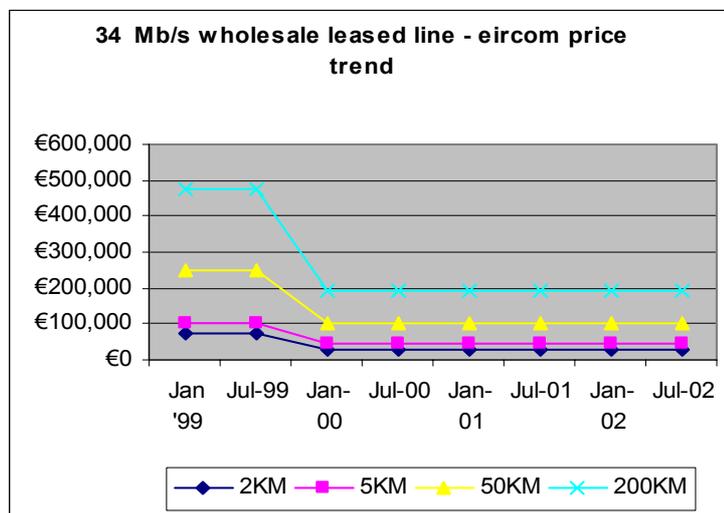


Figure 6.4.: Prices for a 34 Mb/s leased line circuit (Euros)

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

6.23 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

6.24 ComReg does not believe that any operator enjoys advantages in this respect. The technology used to supply 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

6.25 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 which 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.

6.26 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

6.27 As discussed, ComReg does not believe that the self-provision 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

6.28 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.

6.29 An economic model exploring the relationships between these sunk and marginal costs was developed by Europe Economics for Oftel in 2000⁵⁸. The model identified the percentage increase in total cost arising from a small percentage increase in volume. The calculations made supported the existence of substantial economies of scale in the provision of trunk segments. Oftel has indicated that the model calculated the following cost-volume relationship slope coefficients for core networks (where volume measures total capacity in terms of Mbps and lower figures indicate the presence of significant economies of scale):

- duct – 0%;
- optical fibre – 11%;
- SDH equipment - 46%; and
- operating costs – 30%.⁵⁹

6.30 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.

6.31 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.

6.32 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

6.33 It is shown in the analysis of the retail market in Section 9 that, eircom's market share at the retail level for leased lines of 2 Mb/s capacity and below is significant. eircom self-supplies all wholesale trunk segments necessary to supply its retail services, effectively foreclosing a significant portion of the market for the provision of wholesale trunk segments to its competitors. The resultant high and predictable demand for capacity further facilitates eircom's exploitation of economies of scale.

⁵⁸ The model explored cost-volume relationship (*i.e.*, the % increase in costs resulting from % increase in output).

⁵⁹ Oftel's Leased Lines Consultation Document, April 2003, paragraphs B.126 and B.127.

Potential competition

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

6.35 ComReg is of the view that it is economically not 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.

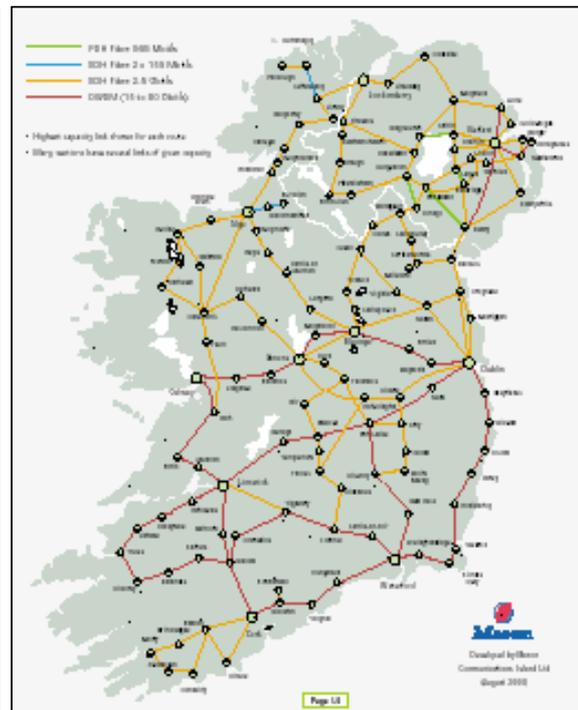
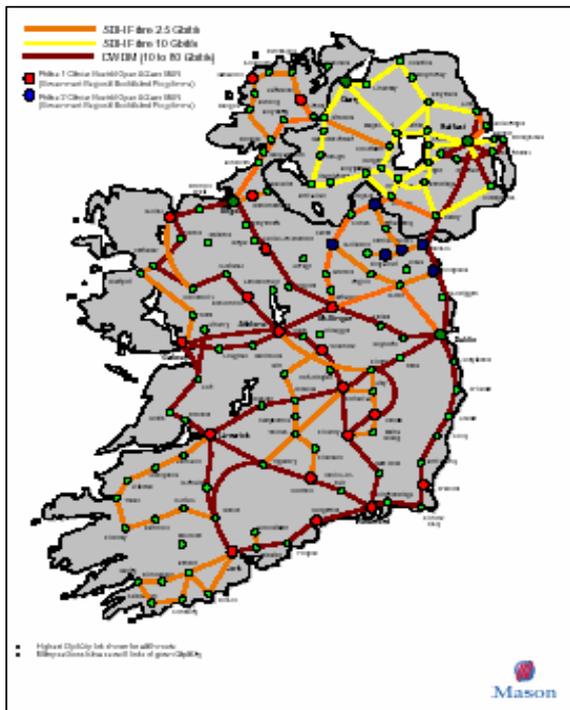


Figure 6.5: Backbone Build 2003

Figure 6.6: Backbone Build 2000

6.36 However, there have been a large number of 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.
- **Construction of Metropolitan Area Networks**—this scheme involves the construction of high speed fibre-optic rings in 19 towns and cities. Projects are 90% funded by central government. See Appendix C.

- **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' pooling of their demands in order to 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 draw down capacity from these framework deals.
- 6.37 ComReg considers that the availability of alternative infrastructure will have a positive impact on the competitive dynamics of the wholesale trunk segments market. However, this is unlikely to be significant in the timeframe of this review. If the competitive dynamics change in the immediate future, ComReg will review the market to analyse any developments.

Preliminary conclusion

- 6.38 ComReg has reached the preliminary conclusion that eircom is dominant in the national market for the provision of wholesale trunk segments. The conclusion is based particularly on:
- eircom's market share 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

Q. 9. Do you agree with ComReg's preliminary market analysis of the wholesale trunk segments? Please support your response with evidence.

Wholesale terminating segments

Market shares

- 6.39 As noted above at the end of 2003 eircom held over 85% market share⁶⁰ measured in terms of the number of circuits and approximately 80% measured in terms of revenue⁶¹. It should also be noted that wholesale leased lines provided by OAOs are in large part dependent on wholesale leased lines purchased from eircom rather than necessarily provided over their own infrastructure⁶².
- 6.40 The evidence shows that eircom's market share has not only been well over 50% (calculated by revenue or volume) of the relevant market, but has also remained sufficiently stable over time⁶³. The market analysis strongly suggests that eircom has SMP.
- 6.41 This is consistent with competition law principles and the European Commission's *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 be in dominant position.

Pricing

- 6.42 Terminating segments can be purchased at the wholesale level only as part of a wholesale leased line product or a PPC. They cannot be provided separately and are supplied as part of an end to end circuit, priced on a retail-minus basis or on a cost-orientated basis in the case of PPCs.
- 6.43 As a result of existing regulatory obligation eircom publishes its wholesale tariffs. OAOs do not have published tariffs and prices are usually derived from competitive tendering, where eircom's published price effectively constitute a price ceiling.
- 6.44 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. However, this may change as a result of the introduction of PPCs.

⁶⁰ ComReg Quarterly Report Data.

⁶¹ Based on the provision of end-to-end wholesale leased lines.

⁶² 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.

⁶³ ComReg notes that the extent of distortion of market shares resulting from the over-counting of other operator revenues increases with the real underlying increase in the market shares of such operators.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

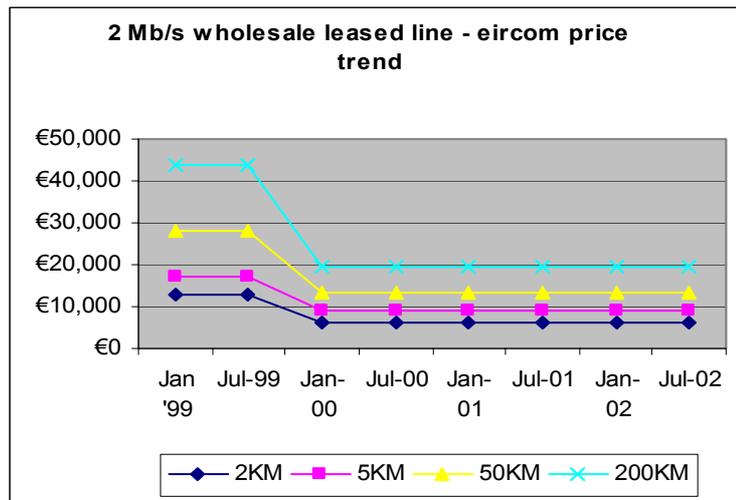


Figure 6.7: Prices for a 2 Mb/s leased line circuit (Euros)

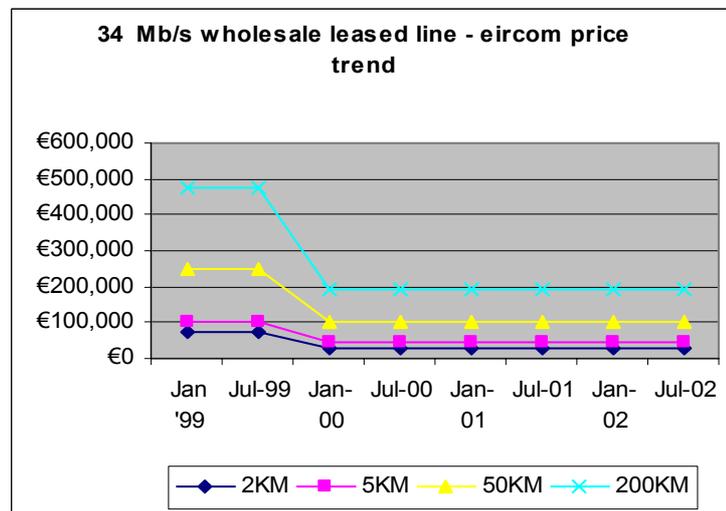


Figure 6.8: Prices for a 34 Mb/s leased line circuit (Euros)

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

6.46 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

6.47 As with wholesale trunk segments, ComReg does not believe that any operator enjoys advantages in this respect in the wholesale terminating segment market. The technology used to supply wholesale terminating 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

- 6.48 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.
- 6.49 Network diagrams and coverage data ordinarily relate the 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.
- 6.50 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.
- 6.51 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

- 6.52 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

- 6.53 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

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

the capacity of the equipment that can be installed and the lower its costs (on a per customer basis).

6.54 Europe Economics produced a bottom up model for Oftel in 2000 that estimates the cost volume relationships for, inter alia, the access network.⁶⁴ The estimates for the access network include the following:

- duct – 5%;
- copper – 35%;
- fibre – 22%; and
- operating costs – 48%.⁶⁵

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

6.56 The market share data available to ComReg indicates that, while eircom might not always be the only supplier of 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.

6.57 In the majority of the territory in Ireland, only eircom provides terminating segments. In such areas, only eircom enjoys economies of scale. By contrast,, other operators must buy their terminating segments from eircom, with eircom not facing any competitive pressure to pass on the economies of scale benefits to its buyers. Since the number of areas in which eircom is the only supplier is large, 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.

6.58 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.

6.59 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 a 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 terminating inputs over a larger range of products, and it carries larger volumes of such products.

⁶⁴ The model explored cost-volume relationship (*i.e.*, the % increase in costs resulting from % increase in output).

⁶⁵ Oftel's Leased Lines Consultation Document, April 2003, paragraph B.188.

Vertical integration

6.60 eircom's market share at the retail level is significant (see Section 8). eircom self-supplies all terminating capacity necessary to supply its retail services, effectively foreclosing a significant portion of the market for the provision of terminating capacity to its competitors. The resultant high and predictable demand for capacity further facilitates eircom's exploitation of economies of scale.

Potential competition

6.61 ComReg is of the view that it is economically not feasible for any other operator to replicate the scope of the incumbent's terminating segment network. There has been minimal network build in Ireland in the recent past. However, there has been a large number of small government-funded projects which aim to increase the availability of alternative telecommunications network infrastructure.

6.62 At present, Symmetric DSL (SDSL) technology is not used in Ireland for the provision of symmetric capacity. ComReg believes however that services using SDSL are likely to be introduced within the timeframe of this review. 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.

6.63 It is noted that there is potential competition in the wholesale terminating segment market. However, ComReg is of the view that the impact of potential competition outlined above will not have a significant impact on the market within the timeframe of this review, so as to reduce the advantages which eircom currently enjoys.

Preliminary conclusion

6.64 ComReg's analysis of the effectiveness of competition in relation to the provision of terminating capacity has led to the conclusion that the market is not effectively competitive, and that eircom is dominant.

6.65 ComReg's preliminary conclusion is based on:

- market share well in excess of 50%,
- eircom's control of ubiquitous terminating infrastructure,
- its ability to exploit economies of scale and scope,
- the significant barriers to entry that exist and the substantial sunk costs that need to be incurred to replicate its terminating facilities.

Conclusion

6.66 ComReg is of the preliminary view that eircom has SMP market power in the wholesale market for trunk and terminating segments.

Q. 10. Do you agree with the above preliminary conclusions regarding market analysis? Please provide evidence to support your response.

7 Designation Of Undertakings With Significant Market Power in the Wholesale Market

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

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

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

7.2 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.

8 Retail Market Definition in the Presence of Wholesale Remedies

Introduction

- 8.1 ComReg has sought to identify the scope of the appropriate retail market for leased lines.
- 8.2 As a starting point, ComReg must consider, under Article 18 of the Universal Service Directive, the level of competition in the provision of the minimum set of retail leased lines. The ‘minimum set’ corresponds to leased lines at all capacities from 64 kb/s up to and including 2 Mb/s symmetric capacity which can be either digital or analogue. The minimum set of leased lines is defined in terms of those published in the Official Journal [pursuant to Article 17 of the Framework Directive]⁶⁶.
- 8.3 Regulation 26 of the *Framework Regulations* requires ComReg to, inter alia, define relevant markets for the purposes of the *Framework Regulations*, taking utmost account of the *Relevant Markets Recommendation*. The *Relevant Markets Recommendation* provides⁶⁷ 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.
- 8.4 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,⁶⁸ 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.
- 8.5 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 24th 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*.

⁶⁶ 2003/548/EC

⁶⁷ See paragraph 7 of the Annex to the Relevant Markets Recommendation.

⁶⁸ As identified in the list of standards published in the Official Journal of the European Communities pursuant to Article 17 of the Framework Directive.

Market Definition

8.6 The objective characteristic of leased lines is considered to be a high quality transmission product. As discussed, in Section 5 in the analysis of the functional definition of a leased line, there are a number of characteristics which differentiate leased lines from other communication products in that they provide:

‘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’

8.7 The Explanatory Memorandum notes that there is an inherent difficulty in differentiating between markets for retail and wholesale leased lines, given 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 by large end users for self supply, on the other. The communications sector is characterised by two or more functional levels of competition; it consists of the provision of communications services to end users (i.e., the retail market) and an upstream market for the provision of access to inputs necessary to provide such communications services (i.e., a wholesale market).

8.8 In defining a market for retail leased line capacity, ComReg considers a number of criteria which are listed below and - outlined in Figure 8.1 - analyses whether:

- international leased lines fall within the same retail market
- leased lines of **various bandwidths** fall within the same retail market;
- **analogue and digital leased lines** fall within the same retail market;
- leased lines and **other data services** fall within the same relevant retail market; including data services such as:
 - VPN
 - IPVPN
 - ATM
 - Frame Relay
 - Ethernet Products
 - SDSL
 - Internet access via asymmetric broadband capacity

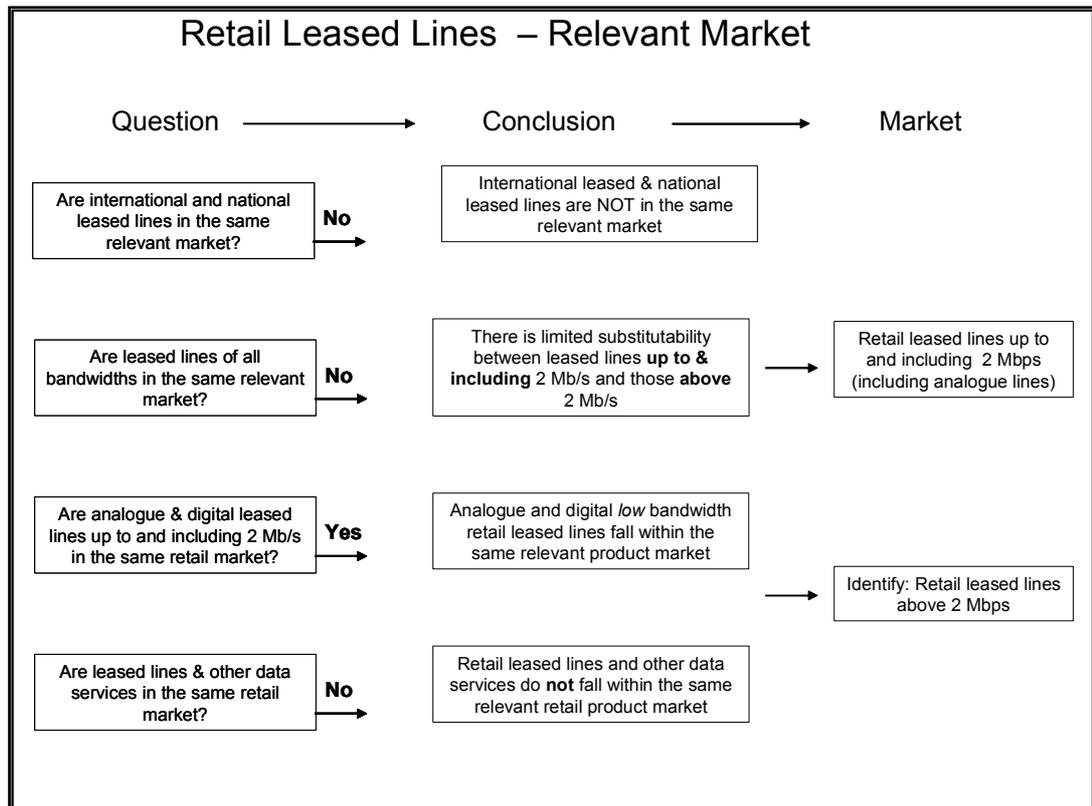


Figure 8.1 – Market Definition Process

Are international leased lines in the same market for national leased lines?

8.9 ComReg has considered the scope of the appropriate retail market for leased lines. In the 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’) which is 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 and national leased lines fall within the same market.

Demand-side

8.10 ComReg is of the preliminary view that a leased line within Ireland and a leased line from Ireland to another country are not substitutes for each other. From the demand-side analysis it seems unlikely that a consumer of international leased lines will respond to a small but significant non-transitory price increase by a hypothetical monopolist of international leased lines and switch 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. The two products are not substitutes.

Supply-side

8.11 Starting from a narrow market for national leased lines, ComReg examines whether an operator of international leased lines would respond to a small but significant non-transitory price increase made by a hypothetical monopolist of national leased lines. ComReg believes it is unlikely that such a switch in production could occur, sufficiently promptly or cost effectively in order to constrain a hypothetical monopolist operating in a retail market. An international operator would need to acquire key network-based inputs which are different to those used on international capacity. 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.

8.12 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 unique to a national market for Ireland. The conditions of supply and hence the pricing reflect a separate market place.

8.13 ComReg holds that both demand and supply-side substitution factors indicate that there is a separate market for national and international leased lines. International leased lines are subject to a separate review in ComReg document 04/60.

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

8.14 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:

- 64 kbps (and multiples thereof ranging from 128 kbps – 2048 kbps⁶⁹);
- 34 Mb/s;
- 45 Mb/s; and
- 140/155 Mb/s and above.

⁶⁹ Please see Annex B for the range of products provided by eircom

- 8.15 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

- 8.16 Retail leased lines provide end users with capacity that can be used to carry a wide variety of different types of communications 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) the route in question. 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 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.

Functional substitutability

- 8.17 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 requirements⁷⁰. ComReg understands that bandwidths up to and including 2 Mb/s⁷¹ 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.
- 8.18 ComReg notes that, from a purely functional perspective, it would appear that a chain of substitution exists for various bandwidths.
- 8.19 From a functional perspective, a high bandwidth leased line will act as a substitute for a low bandwidth leased line, providing at least the same level of functionality.

Price comparisons

- 8.20 It is important that any price comparisons made by ComReg compare prices at the competitive level, since the hypothetical monopolist test contemplates an increase above competitive prices. 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.
- 8.21 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

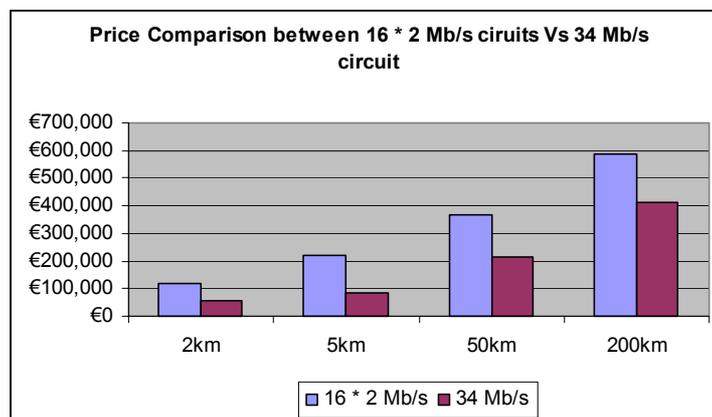
⁷⁰ ComReg is aware that, for certain limited types of end user application, there may be technical constraints on the substitutability of circuits up to 2 Mb/s.

⁷¹ 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.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

lines by buying multiple 2 Mb/s lines⁷². 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.

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

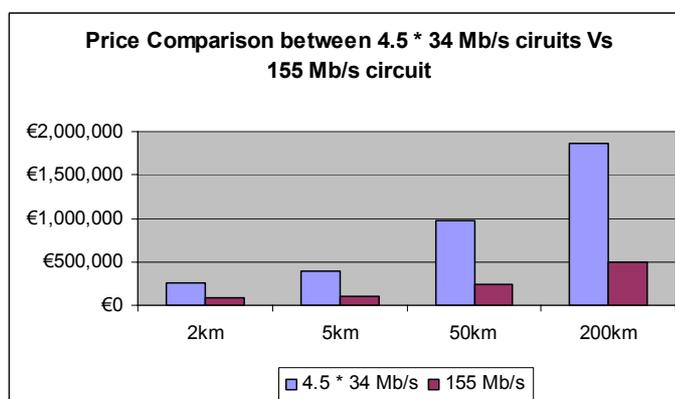


Annual Charges			
	2 Mb/s	16 * 2 Mb/s	34 Mb/s
2km	€7,237	€115,800	€55,830
5km	€13,726	€219,614	€86,749
50km	€23,029	€368,468	€214,738
200km	€36,856	€589,696	€412,818

Table 8.1 : – Price comparison between 2 Mb/s and 34 Mb/s leased lines

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

8.24 Similarly, it would appear that multiple 34 Mb/s leased lines are unlikely to provide a substitute for 155 Mb/s leased lines. The prices are as follows:



⁷²The following prices reflect eircom's published rates, as at January 2003. The assumptions used to calculate prices are contained in Annex B

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

Annual Charges			
	34 Mb/s	4.5 * 34 Mb/s	155 Mb/s
2km	€55,830	€251,237	€84,620
5km	€86,749	€390,368	€104,620
50km	€214,738	€966,321	€239,620
200km	€412,818	€1,857,679	€502,120

Table 8.2: – Price comparison between 34 Mb/s and 155 Mb/s leased lines

- 8.25 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 substitution⁷³ 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.
- 8.26 From the diagram 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.

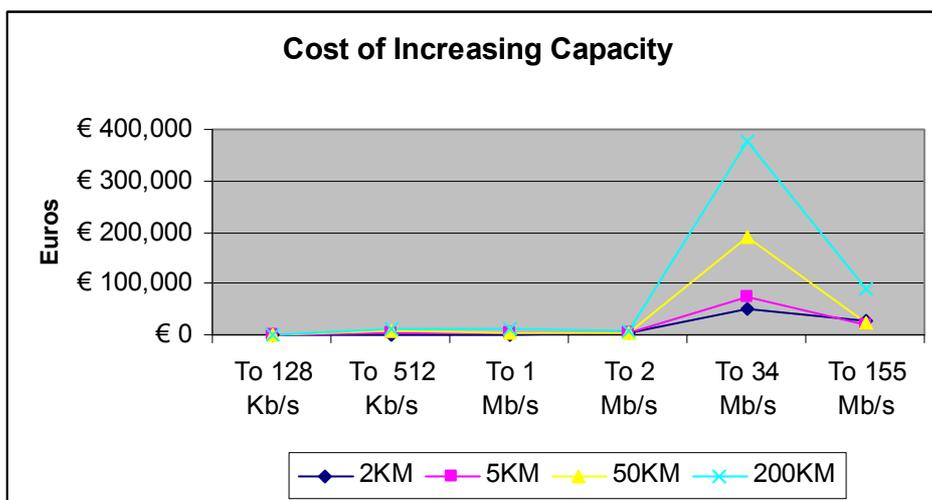


Figure 8.2: Cost of Increasing Capacity

Supply-side substitution

- 8.27 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

⁷³ 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.

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.

- 8.28 ComReg understands that 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 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 is true for all capacities up to and including 2 Mb/s leased lines.
- 8.29 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 resupply or the construction (including sunk costs such as trenching and ducting) of additional fibre links to end users. ComReg proposes to impose remedies such that wholesale leased lines will be mandated and available at cost. 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.
- 8.30 As discussed in the market analysis section below, the competitive conditions and dynamics of the provision of 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 from a hypothetical monopolist rather than building their own infrastructure. Supply-side substitution implies that the market is delineated up to and including 2 Mb/s leased lines. In the market for leased lines above 2 Mb/s, competing operators can provide retail leased lines by purchasing wholesale products; there is, however a greater incentive for infrastructure-based competition which can be delivered in a relatively short timeframe and imposes a competitive constraint on a hypothetical monopolist supplier.
- 8.31 ComReg has, therefore, taken the preliminary view that there is little supply-side substitutability between higher and lower bandwidth retail leased lines.

Conclusion

- 8.32 ComReg concludes that there is a defined market for bandwidth up to and including 2Mb/s. From a demand perspective, there is substitution between different bandwidths up to and including 2 Mb/s. This market equates to the minimum set of leased lines.

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

Demand-side substitution

8.33 ComReg has considered 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

8.34 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.

8.35 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 quality of service.

Price comparison

8.36 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.

8.37 ComReg understands 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

8.38 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 from the graph below. Less than 80% of the analogue leased lines that were in use in the first half of 1999 are still in use in the second half of 2003.

However, over the same period, the number of lower bandwidth digital leased lines has 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.

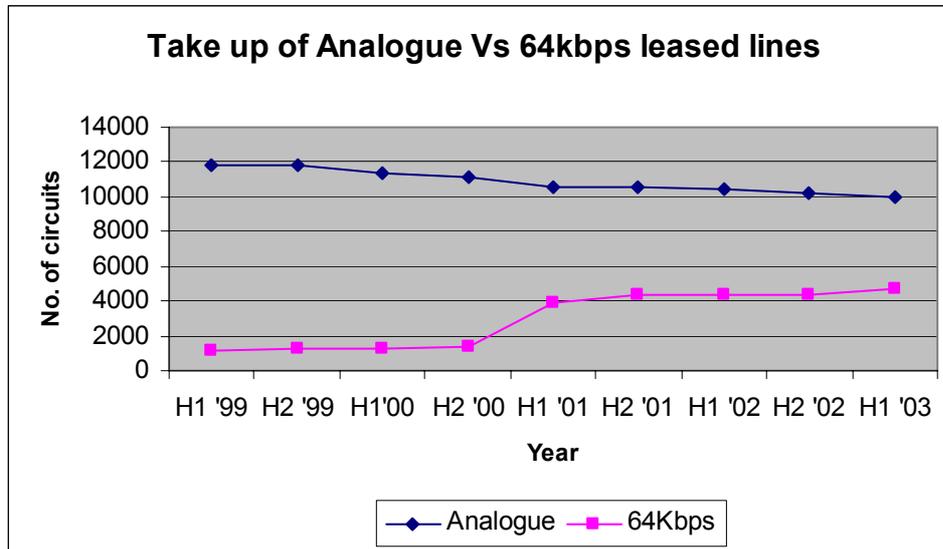


Figure 8.3: Take up of Analogue Vs 64 kbps leased lines

Supply-side substitution

- 8.39 ComReg has considered the extent to which existing suppliers of lower bandwidth analogue and digital leased lines could, respectively, enter the market and begin to supply digital and analogue services, in response to a 5% to 10% increase by a hypothetical monopolist of analogue or digital leased lines.
- 8.40 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.
- 8.41 Lower bandwidth leased lines are normally provided using the same network elements, whether they are analogue or digital. At lower bandwidths, the majority of retail leased lines are provided over the wholesale inputs of the hypothetical monopolist supplier. Supply-side substitution relies on potential suppliers being able to acquire sufficient wholesale capacity through the proposed obligations on the wholesale monopolist. 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).

Conclusion

- 8.42 ComReg takes the view that, on balance, analogue and digital lower bandwidth retail leased lines fall within the same relevant product market.
- 8.43 This view is in keeping with the *Explanatory Memorandum*, 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.

Are the minimum set of leased lines and other data services included in the same retail relevant market?

- 8.44 In assessing whether other data services fall within the same market as retail leased lines in the minimum set, ComReg has considered the extent to which such services exert competitive pressure on the pricing of retail leased lines. ComReg will analyse whether the following products fall within the recommended market of the minimum set. The minimum set of leased lines is defined in terms of harmonised characteristics i.e. capacity between 64 kbps and 2 Mb/s which is analogue or digital with an associated standard interface technology i.e. the standards published in the Official Journal⁷⁴.
- 8.45 Retail leased lines in the minimum set provide uncontended transmission capacity (i.e., guaranteed bandwidth) between two points. It is a matter for the end user to determine the nature and mix of services carried over the leased lines. In addition, leased lines provided in Ireland are typically supported by service level agreements prescribing service quality, fault response and other service support elements that ensure the quality of leased line services.
- 8.46 When defining a market for retail leased lines, ComReg takes into consideration the *Framework Directive*⁷⁵ which notes the requirement for the NRA to take the utmost account of the desirability of making regulation technologically neutral, that is to say that it neither imposes nor discriminates for 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.
- 8.47 When considering which services might be included in the retail market it is first 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 or SDH the distinction is clear: we are 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.
- 8.48 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

⁷⁴ 2003/548/EC.

⁷⁵ Framework Directive: Recital 18.

order to highlight differing technical characteristics compared to 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 data services sold to end customers.

8.49 ComReg will review whether the following data service products fall within the relevant market. Under the definition of the minimum set all of the products listed below fall outside the scope of the relevant market. However, ComReg will analyse these service to assess whether they impose a competitive threat that would justify broadening the relevant market definition.

- i. VPN
- ii. IPVPN
- iii. ATM
- iv. Frame Relay
- v. Ethernet Products
- vi. SDSL
- vii. Internet Access via asymmetric broadband capacity

(i) Virtual Private Networks (VPN)

8.50 A Virtual Private Network (VPN) is a method of using a public telecommunication infrastructure to provide remote offices or end users with secure access to their organisation's network.

8.51 Leased lines can be used as input for VPNs to provide a managed service product to the end user, with an application layered over it to enable the additional functionality.

8.52 ComReg is of the view that VPN services do not fall within the relevant market. VPNs are positioned further up the value chain of communication products and are not functionally substitutable for retail leased lines. However leased lines as an input will be considered in the relevant wholesale market.

Q. 11. Do you believe VPNs should not be included in the market? Please provide evidence to support your response.

(ii) Internet Protocol VPN (IPVPN)

8.53 IP VPNs are connectionless network solutions which differ from more traditional end-to-end network solutions in that they do not require dedicated connections of fixed capacities. Capacity is packet-switched using Internet Protocol (IP). Typically, destination points are not defined by the originating point or capacity allocations associated with access points but rather the final destination is associated with the IP address defined by the user. IP circuits may be used for point to point or point to multipoint applications.

- 8.54 ComReg takes the view that IPVPN services fall outside the scope of the relevant market in terms of the associated standard interface technology of leased lines in the minimum set. ComReg considers an IPVPN is not typically a functional substitute for symmetric uncontended circuits as it by its nature is likely to be contended. It is also not usually constrained to point to point applications as it is often used to provide point to multipoint services. IPVPNs are used to provide a managed service with additional flexibility in that customer do not have to specifically define the point to point connectivity at the time of provisioning, and can adjust this easily and flexibly to suit their needs. Thus these products are positioned higher up the value chain of communication products than traditional leased lines.
- 8.55 ComReg is aware of the migration that has begun to occur over the last two to three years from services over traditional leased lines to IP protocol-based services such as IPVPNs. These services provide customers with an inherent additional flexibility in terms of flexibility and control.
- 8.56 ComReg believes that IPVPNs fall outside the definition outlined in Section 5. However, ComReg recognises that this product is already having an impact on the leased line market. This could suggest that the definition is too narrow and should be extended by removing the constraint on “does not include ‘on demand switching’ or routing functions controlled by the end user”.

Q. 12. 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.

(iii) Asynchronous Transfer Mode (ATM)

- 8.57 ATM is a transmission protocol. ATM integrates the multiplexing and switching functions, is well suited for bursty traffic in that capacity available to end users can be increased on demand (in contrast to circuit switching), and allows communications between devices that operate at different speeds. ATM has the potential to be contended, depending on solution design specified by network parameters or data priorities. Examples of such include ATM CBR, VBR etc, which provide a range of contention rates, some of which are equivalent to uncontended capacity.
- 8.58 ATM can provide uncontended capacity between two points, similar to a leased line. However, it is typically used to deliver high capacity (2 Mb/s and above) data-intensive services to end users. ComReg takes the view that from a supply side an operator is unlikely to provide a circuit below 2 Mb/s over ATM due to the associated costs of delivery. ComReg therefore takes the views that ATM services generically do not provide a functional substitute to lower bandwidth leased lines and do not impose a competitive threat on the relevant market with the very limited overlap of the markets. However given the technological neutrality of the regulation of these markets, where ATM technologies are used to provide leased lines within the defined minimum set, such circuits would be considered to be within the relevant market.

Q. 13. Do you believe that ATM services should not be included in the market? Please provide evidence to support your response.

(iv) Frame Relay

- 8.59 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.
- 8.60 ComReg is of the view that Frame Relay services do not impose a competitive threat on the leased line market and thus are not included in the relevant market.
- 8.61 The data available to ComReg indicates that there has been a decline in the number of Frame Relay subscribers, as there has been a strong migration to ATM-type services. Additionally, such services are not functionally equivalent as they are heavily contended and thus can not provide point to point transparent capacity. Frame Relay services thus fall outside the scope of the minimum set of leased lines.

Q. 14. Do you believe that Frame Relay should not be included in the market? Please provide evidence to support your response.

(v) Ethernet

- 8.62 ComReg is aware of the recent introduction of an Ethernet based transparent capacity services. 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 to carry data based on other protocols.
 - The general requirement for re-amplification of circuits that are longer than 25-35 kilometres (from the source signal).
 - The use of circuits to provide higher capacity circuits (*e.g.*, above 20 Mb/s).
 - Circuits that are contended.
- 8.63 It appears to be unlikely that customers requiring capacity that is able to carry both conventional voice and data traffic will switch to Ethernet circuits. Additionally, the very high bandwidth associated with these products is not a substitute for leased lines of the capacity between 64 kb/s and 2 Mb/s.

- 8.64 Analysing the supply side, the majority of retail Ethernet circuits provide capacities above 10 Mb/s. As such, ComReg anticipates that the majority of such circuits will be provided over fibre networks.
- 8.65 ComReg concludes that Ethernet data services are not currently in the same relevant product market as retail lower bandwidth leased lines for the reasons outlined above.
- 8.66 However, ComReg will continue to monitor the developments relating to the provision of such circuits, in order to determine whether it is appropriate to define a separate relevant product market in which such services are supplied or to expand the scope of the retail leased lines market to include such circuits.

**Q. 15. Do you believe that Ethernet should not be included in the market?
Please provide evidence to support your response.**

(vi) Symmetric Digital Subscriber Lines (SDSL)

- 8.67 Digital subscriber line technologies are based on copper loops that convert the copper pair into a digital line. DSLAMs⁷⁶ at the operator's exchanges connect high speed DSL data traffic. SDSL is described as symmetric because it supports the same data rates for upstream and downstream traffic.
- 8.68 At present, SDSL services are currently not available in Ireland. ComReg notes however, that these retail services are likely to be introduced within the timeframe of this review. SDSL is technically equivalent to leased lines. SDSL services are considered to be point to point symmetric capacity, although typically they do not carry voice services.
- 8.69 However, it is possible, depending on product price, that the characteristics of SDSL services will provide a functional substitute to leased lines carried over SDH/PDH in that they will provide symmetric capacity that can be used for a wide variety of purposes and is flexible in terms of the services carried. However as the product is currently not available in Ireland, it is not possible to carry out a SNNIP test between SDSL and leased line services.
- 8.70 From the supply side it is unlikely that SDSL services will impose a competitive constraint on the leased line market. ComReg notes that symmetric retail xDSL services are unlikely to be supplied using wholesale leased lines as an input. As noted above, there is *de minimis* use of non-fibre competitive infrastructure in Ireland. It, therefore, appears that the majority of other operators will need to acquire SDSL wholesale inputs from the wholesale hypothetical monopolist (whether as unbundled local loops or as a form of bitstream) to supply retail SDSL services. Given that such operators are also likely to be acquiring wholesale leased lines from the wholesale hypothetical monopolist, it is unlikely that the possibility of supply in these circumstances will exert a competitive constraint on a hypothetical monopolist's supply of retail leased lines.

⁷⁶ Digital Subscriber Line Access Multiplexers.

8.71 ComReg will monitor the effect of the introduction of SDSL services on the appropriate scope of the relevant market, however at present SDSL services are not included in the retail leased line market.

Q. 16. Do you believe that SDSL should not be included in the market?

Please provide evidence to support your response.

(vii) Internet Access via asymmetric broadband capacity

8.72 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,⁷⁷ technologies based on copper loops or ADSL are the most prevalent and significant means of broadband access in Ireland.

8.73 Leased lines can be utilised for Internet access. ComReg examines whether or not asymmetric broadband capacity is in the same retail market as leased lines. Symmetric capacity means that equal capacity is directed both downstream and upstream (in the upward direction from the end user). However, it is used for data transmission and is not typically used for voice. Typically for households and small businesses, asymmetric DSL (ADSL) is used, which has a download speed in excess of 150 kbps. With ADSL, most of the two-way bandwidth is directed down stream (in the downward direction to the end-user) and can be used for both voice and data; it is also contended.

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

Q. 17. Do you believe that ADSL should not be included in the market?

Please provide evidence to support your response.

The Geographic Market

8.75 ComReg has considered the scope of the geographic market within which the conditions of supply and demand for the relevant dedicated capacity services are sufficiently homogeneous. 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.

8.76 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.

⁷⁷ Wholesale Broadband Access; (ComReg 04/25)

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

Infrastructure

- 8.77 Table 8.4 below shows the network infrastructure presently employed in Ireland.
- 8.78 ComReg understands 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 national in scope. There is little use of competing infrastructure to provide end to end leased lines at bandwidths below 2 Mb/s.
- 8.79 Operators highlighted in green 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 on the ESB network although take-up is believed to be limited at this stage of development.
- 8.80 In contrast, there are a larger number of operators providing services within Dublin. These networks are primarily fibre-based and are used to deliver leased lines of high capacity.
- 8.81 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, which are thus transparent to other operators. The evidence suggests that the regulated prices are in essence a ‘price ceiling’ below which its 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 regulated prices. The cost of providing circuits up to and including 2 Mb/s is fixed and it is unlikely that cost efficiencies would be enjoyed on specific routes. Additionally, lower bandwidth leased lines can be considered to be a commodity good; countervailing bargaining power is limited and could not be exerted on a route by route basis. ComReg is therefore of 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
Esat	v	v	v	v	v	v
Global Crossing					v	
ntl				v (Linking Dundalk - Dublin)	v	
Worldcom					v	v
Govt Funded MANs						v
ESB	v	v	v	v	v	

Figure 8.4: Operators’ Network by Route

Demand-side substitutability

- 8.82 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

- 8.83 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 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.
- 8.84 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.
- 8.85 However, if market entry in response to such an increase 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 have a significant impact on both the scope of the relevant product and geographic retail markets.
- 8.86 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. Without any such geographic averaging obligation, it is likely that competitive conditions will cease to be similar across Ireland.

Conclusion

- 8.87 ComReg takes that view that the relevant retail geographic market is national in scope.

Preliminary Conclusion

- 8.88 ComReg has formed the preliminary view that there is a distinct relevant market in Ireland for retail leased lines up to and including 2 Mb/s.

Q. 18. 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.

9 Leased Lines above 2 Mb/s

9.1 ComReg examines the market identified for the provision of leased lines above 2 Mb/s to test if the market is effectively competitive. At present this market is regulated and 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 the market to see if it tends towards effective competition.

Market shares

9.2 These tables show market shares over the last three years, by revenue and by number of circuits:

Bandwidth	Market share eircom (revenue)			Market share other operators (revenue)		
	H2 2002	H2 2001	H2 2000	H2 2002	H2 2001	H2 2000
All leased lines	10-15%	15-20%	95-100%	85-90%	80-85%	0-5%
Leased lines above 2 Mbps	5-10%	0-5%	0%	90-95%	95-100%	100%
140 Mbps	20-25%	25-30%	0%	75-80%	70-75%	100%
34 Mbps	N/A	0%	15-20%	N/A	100%	80-85%

Table 9.1: Market Share for lease lines above 2 Mb/s (Revenue)

Bandwidth	Market share eircom (circuit)			Market share other operators (circuit)		
	H1 2003	H1 2002	H1 2001	H1 2003	H1 2002	H1 2001
All leased lines above 2 Mbps	10-15%	10-15%	0%	85-90%	85-90%	100%
34 Mbps	13-18%	0%	0%	82-87%	100%	100%
140 Mbps	5-10%	15-20%	0%	90-95%	80-85%	100%
All leased lines above 140 Mbps	18-23%	30-35%	5-10%	77-32%	65-70%	90-95%

Table 9.2: Market Share for lease lines above 2 Mb/s (Circuits)

9.3 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 and is falling, both in terms of revenue and volume. It would appear that other operators compete more keenly (and successfully) with eircom in the supply of higher revenue-generated bandwidths. ComReg's consideration of the market share data suggests that, far from being able to redress losses to competitors, eircom is continuing to lose market share.

9.4 However, ComReg notes that these figures 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 are almost perfectly transparent to other operators. Given the absolute size of the margin that such other operators can generate (even when reselling wholesale lines acquired from eircom), other operators are able to compete with eircom on price. ComReg notes that, without this transparency, other operators might find it less easy to undercut eircom in the same manner.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

- 9.5 The European Commission's *Guidelines* state 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 be in a dominant position.
- 9.6 This is a very small and relatively immature market and has developed in the context of retail regulation imposed on eircom under the old regulatory framework. Given these facts, it would be inappropriate to conclude that any operator has SMP in this market.
- 9.7 A small number of large purchasers of high capacity leased lines would indicate the existence of countervailing bargaining power in the market.
- 9.8 ComReg is of the view that barriers to entry for the provision of high bandwidth leased lines above 2Mb/s are lower as the potential revenue earned is higher, thus making entry more economically feasible.
- 9.9 ComReg believes that regulation at a wholesale level should be sufficient to provide competitive conditions in the retail market, above the minimum set. However, ComReg is minded that the evolution of this market should be monitored at each review, in order to ensure that the competitive conditions do not change to the detriment of the market, where regulatory control has been lifted.

Conclusions

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

Q. 19. 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.

10 Retail Market Analysis

Background

10.1 Having firstly identified a relevant market relating to retail dedicated leased lines connection and capacity 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”.

10.2 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

10.3 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.

Leased Lines up to and including 2 Mb/s

Market shares

10.4 The following tables show market share developments over the last three years, first by revenue, second by number of circuits⁸⁰.

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

⁷⁸ Framework Regulations, Regulation 25(3).

⁷⁹ Framework Regulation 25(2).

⁸⁰ ComReg Quarterly Report Data.

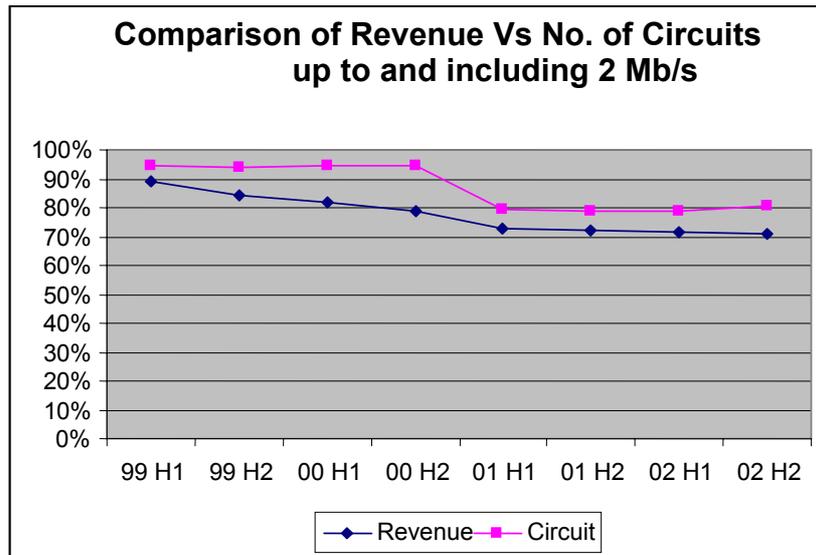


Figure 10.1: Comparison of Revenue Vs No. circuits. (up to and including 2Mb/s)

10.6 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 revenue.

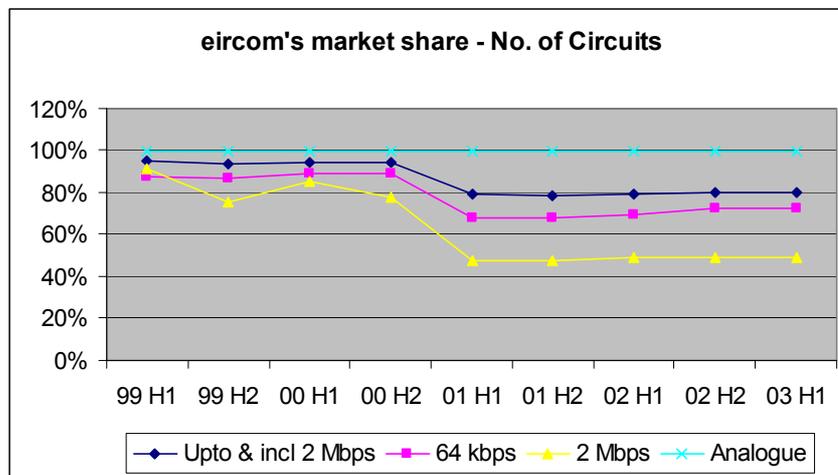


Figure 10.2: eircom’s Market Share - Circuits⁸¹

10.7 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 losses in market share.

10.8 Given that eircom's market share remains well over 50%, whether calculated by revenue or volume, the evidence shows that eircom's market share has not only been well over 50% of the relevant market, but has also remained sufficiently

⁸¹ Ibid.

stable over time⁸². The market analysis strongly suggests that eircom has SMP. This is consistent with competition law principles and the European Commission's *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 be in dominant position.

Price development

10.9 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. 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.

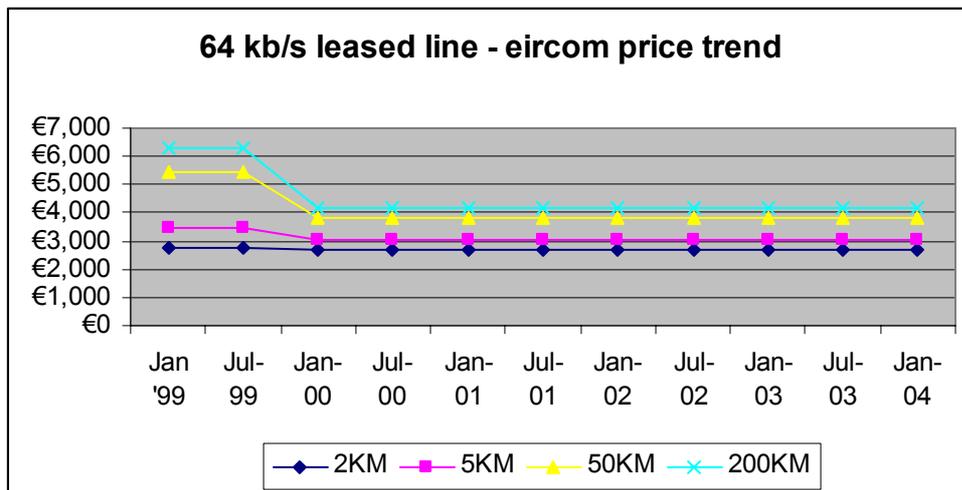


Figure 10.4: Prices for a 64 kb/s leased line circuit (Euros)

⁸²ComReg notes that the extent of distortion of market shares resulting from the over-counting of other operator revenues increases with the real underlying increase in the market shares of such operators.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

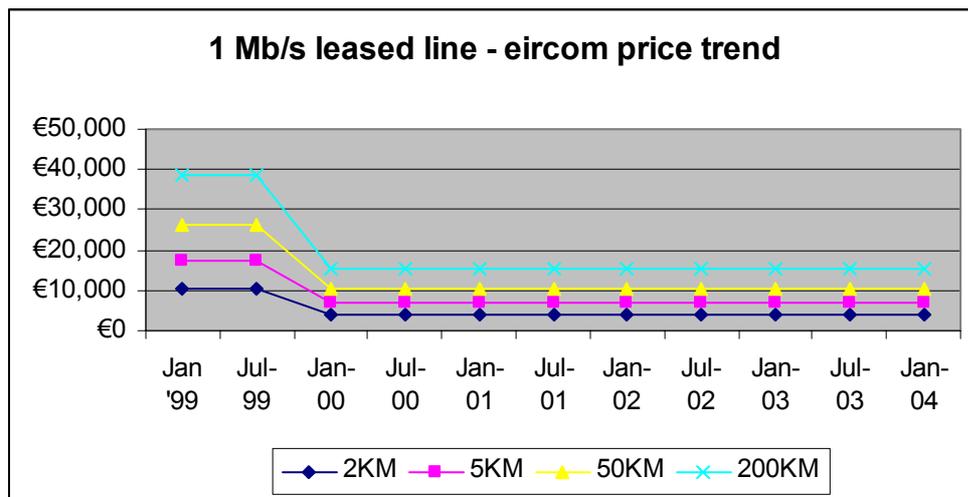


Figure 10.5: Prices for a 1 Mb/s leased line circuit (Euros)

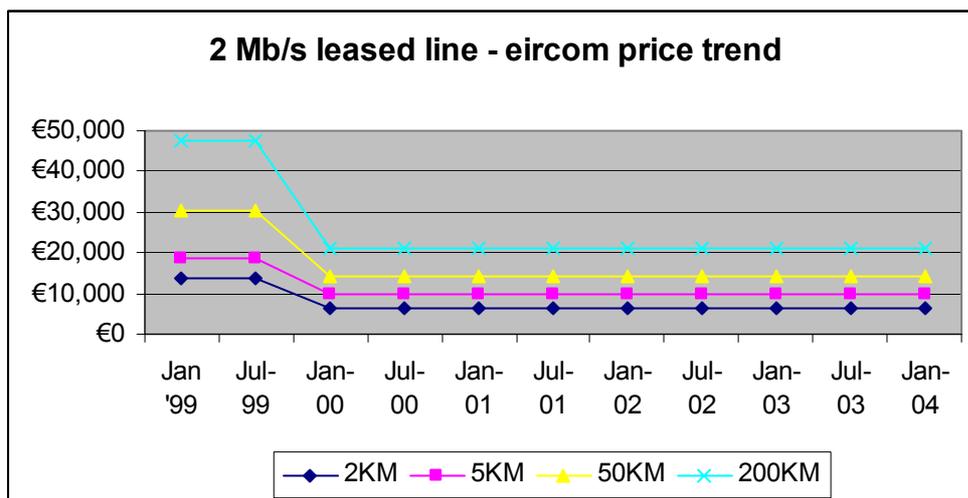


Figure 10.6: Prices for a 2 Mb/s leased line circuit (Euros)

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

Technological advantages

10.11 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

- 10.12 However, the underlying network used to supply retail low bandwidth leased lines is not easily replicated (see the barriers to entry discussion, below). As noted in the market definition, nearly all leased lines of lower bandwidth are provided over copper. This is the most efficient means of delivering leased line services up to and including 2 Mb/s. As pointed out in the review of the supply side substitutability between low and high bandwidth leased lines, operators are more likely to enter the higher bandwidth market as potential return of investment is greater, which could justify entry into the market.
- 10.13 As illustrated above eircom has approximately 70% market share in the market for retail leased lines. The remaining 30% is provided by operators, only one of which has a national backbone network. ComReg is of the view that the remainder of leased lines are provided to end users through the resale of eircom's wholesale product. 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 attempt to deal with 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

- 10.14 ComReg takes the view that real advantages accrue to eircom in supplying retail low bandwidth leased lines that result from economies of scale and scope.
- 10.15 eircom's backbone network infrastructure is significantly more pervasive than its competitors, in terms of coverage and reach. Additionally eircom's local access network connects every building to the trunk and national network and consists mainly of copper cables. ComReg is of the view that it is economically not feasible for any other operator to replicate the incumbent's complete network.
- 10.16 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 economy of scale benefits enjoyed by eircom.
- 10.17 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.
- 10.18 ComReg notes that there are other benefits of scale and scope economies at the retail level that the market share data indicates 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.

Ubiquity

- 10.19 The ubiquity of eircom's network means that, in many places, it is the only supplier of leased line services. The towns passed by OAOs' networks, do not necessarily have access to the network as deployment will depend on the extent of local demand and the commercial feasibility of providing a service.
- 10.20 There are also a number of potential alternative networks such as ESB Telecom and the Government funded MANs. Presently the dark fibre on five of these MANs is lit. There are distributed rings of fibre serving high value customers in cities and large towns across Ireland. The ESB and Aurora networks are both limited to intercity routes. Consequently an end user purchasing capacity on any of these networks would have to contract with second operator for end to end services.
- 10.21 In Ireland typically low-bandwidth retail leased lines are 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 the available discounts and ease of management by buying all low bandwidth circuits from eircom. Additionally, for ease of management end users will generally use one operator for all services.

Vertical integration

- 10.22 eircom's vertical integration may generate efficiencies (through the avoidance of transaction costs) that would be replicated by other low-bandwidth leased line suppliers. 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 for non-discrimination and the requirement for 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

- 10.23 Many advantages enjoyed by eircom's retail arm derive from the wholesale economies of scale and scope of its pervasive network. ComReg is of the view that it is economically not feasible for any other operator to replicate the incumbent's network.
- 10.24 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 which exist including, sales, marketing and advertising accrue to eircom as it has a well established brand and its financial strength is reflective of a dominant player.
- 10.25 The scope available to new entrants for using pricing as a competitive strategy is limited. Unless a new entrant builds its own network it must purchase a wholesale product from an existing operator and resell the product to end users. If the wholesale costs are set by the existing operators from which they acquire capacity

(and compete against at the retail level) new entrants lack the scale and scope to be able to reduce retail costs.

Potential competition

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

10.27 Following what has happened in other jurisdictions, ComReg anticipates that increasing competition will be faced from the provision of symmetric DSL services in the future. It is probable that symmetric DSL will offer comparable functionality typically at a lower price. Symmetric DSL can be provided through unbundling of the local loop and thus can be taken up by competing operators. ComReg will monitor its development and effect on the retail market.

Figure 10.7: Backbone Build 2003

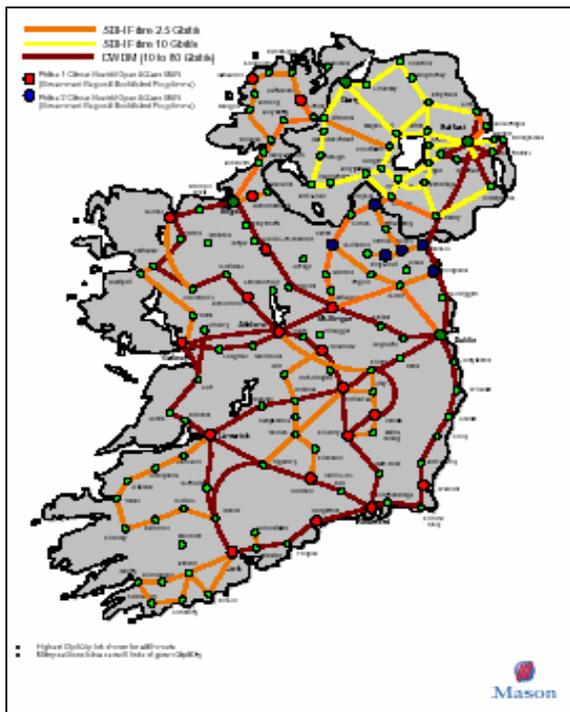
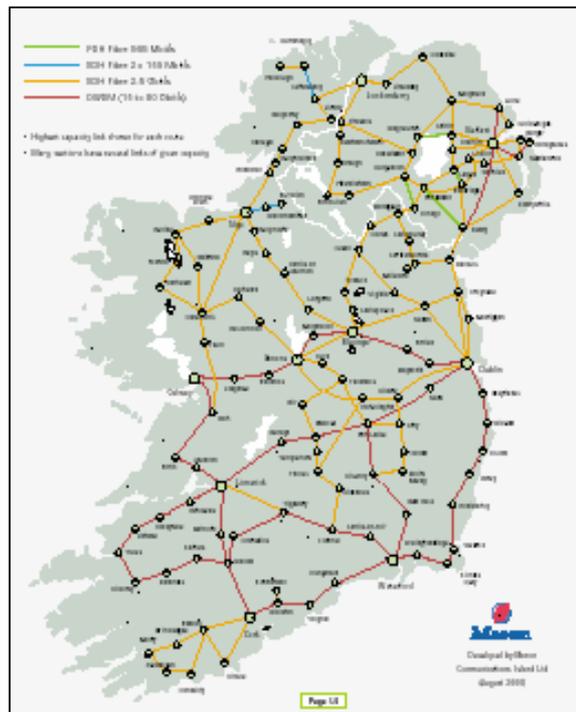


Figure 10.8: Backbone Build 2000



10.28 ComReg is of the view that it is economically not feasible for any other operator to replicate the incumbent’s local access network. There has been minimal backbone network build in Ireland in the recent past; this is evidenced by comparing the telecommunications network infrastructure of 2000 with that in 2003.

10.29 However, there has been a large number of government funded projects which aim 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.
 - **Construction of Metropolitan Area Networks**—this scheme involves the construction of high speed fibre-optic rings in 19 towns and cities. Projects are 90% funded by central government.
 - **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' pooling of their demands in order to 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 Telecom's fibre optic network; and high-speed products connecting Dublin to 26 regional towns on the EsatBT network. Independent Service Providers, telecoms companies and consortia will be able to draw down capacity from these framework deals.
- 10.30 In light of its conclusions relating to economies of scale and scope, ubiquity, vertical integration and barriers to entry and expansion, ComReg believes that the likelihood of significant market entry is unlikely for lower bandwidth leased lines.
- 10.31 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. Funding is primarily focused on the delivery of broadband services and so will benefit users at the high end of lower-bandwidth leased lines market. Additionally, these services have only recently become available on number of 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 within the medium term, ComReg will review the market to analyse any significant development.

Countervailing buyer power

- 10.32 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.
- 10.33 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. Additionally eircom is in a position to offer a range of services and thus a turnkey solution 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

- 10.34 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. An 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.
- 10.35 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, where a customer can avail of the price discount facility upon commitment to a certain rental level and rental periods (from two to four years). In the event that the leased line customer ceases to avail of the discount facility prior to the expiry of the rental period chosen, the customer shall be liable to pay to eircom a sum equivalent to 5% of the corresponding minimum rental level, for the unexpired term of the rental period chosen by the leased line customer. Additionally, the leased line customer may increase but not decrease the committed rental volume chosen. This imposes a significant switching barrier for eircom's customers to switch services to another operator.
- 10.36 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.
- 10.37 Finally, ComReg notes that ubiquity can combine with customer perception and attitude 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.

Conclusions

- 10.38 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.
- 10.39 In addition, ComReg considers that eircom is likely to continue to enjoy such a position over the timeframe of this review. It believes that the wholesale remedies proposed in Section 12 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 existence of barriers to switching, the absence of material countervailing buyer power and the barriers to entry and expansion.

Q. 20. 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.

11 Designation Of Undertakings With Significant Market Power in the Retail Market

11.1 Having regard to the sections above, particularly Sections 8, 9 and 10, ComReg is of the view that, in accordance with the *Framework Regulations*:

eircom plc 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

11.2 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 plc* 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.

11.3 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.

12 Proposed Wholesale and Retail Market Remedies

SMP Markets

12.1 As noted above in Section 7 and 11, 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

12.2 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

12.3 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.”⁸³ 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 market, ComReg needs to address any competition problems such as the transfer of market power to adjacent downstream and 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.

12.4 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.

⁸³ 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.univ-tsel.fr/idei/Commun/Article/Tirole/primer20030716.pdf> (last visited)

Denial of access

- 12.5 Because eircom has SMP on the wholesale markets, it may attempt to leverage its market power by **denying access to or refusing to deal** with undertakings operating downstream who are competing with eircom's retail arm or affiliates.
- 12.6 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.
- 12.7 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.
- 12.8 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

- 12.9 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:
- 12.10 **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.
- 12.11 **Delaying tactics**⁸⁴ - 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 Leased Lines, the SLA regime was introduced specifically to give

⁸⁴ Also known as a 'provisioning squeeze'.

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.

- 12.12 **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.
- 12.13 **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.
- 12.14 **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.
- 12.15 **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.

- 12.16 **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

- 12.17 **Margin squeeze** - a vertically integrated operator dominant in an upstream wholesale market may engage in pricing that gives rise to a ‘margin squeeze’.⁸⁵ 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 mean that an efficient downstream competitor could not earn a normal profit and so exits 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).
- 12.18 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 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.

⁸⁵ 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.

- 12.19 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.
- 12.20 **Price discrimination** - margin squeeze can sometimes be 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.
- 12.21 **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.”⁸⁶ 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
- 12.22 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.
- 12.23 **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 lie below cost is likely to require the application of Regulation 14 (price control and cost accounting) as well as Regulation 12 (accounting separation).
- 12.24 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

⁸⁶ See Notice on the application of the competition rules to access agreements in the telecommunications sector (98/C 265/02) p.16.

any removal of such obligations would provide incentives for eircom to engage in the behaviour described above. Even with regulated pricing, ComReg was forced on several occasions to intervene and direct prices for PPCs and their processes.

Leverage: Horizontal

12.25 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

12.26 Where an SMP undertaking has single market dominance, this may compromise effective competition and may lead to exploitation of consumers. Single market dominance issues fall into three broad areas:

- Entry deterrence
- Exploitative behaviour
- Productive inefficiencies

12.27 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 costs⁸⁷ 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.

12.28 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.

12.29 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.

⁸⁷ To avoid ambiguity, switching costs here refer to the cost associated with a change in supplier.

12.30 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 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

12.31 The *Access Regulations* and the *Universal Service Regulations* provide ComReg with a number of remedies it can apply given its preliminary finding of eircom's SMP in the relevant markets under review.

12.32 The obligations set out in the *Access Regulations* relate to services and products offered at the wholesale level. The obligations available to ComReg in the *Access Regulations* fall into the following categories:

- Transparency (Regulation 10)
- Non-Discrimination (Regulation 11)
- Accounting Separation (Regulation 12)
- Access (Regulation 13)
- Price Control and Cost Accounting (Regulation 14).

It should be noted that NRAs may be justified in imposing remedies other than those set out above 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.

12.33 Obligations set out in Regulation 15 and Schedule 3 of the *Universal Service Regulations* apply to the retail market of leased lines in the “minimum set”. These are specified in Schedule 3 as

- Non-Discrimination
- Cost-Orientation
- Transparency

ComReg may impose additional remedies at the retail level to address other competition failures not rectified by the remedies prescribed.

Wholesale Remedies

12.34 In this section ComReg sets out the remedies available at a wholesale level in the *Access Regulations* and discusses the scenarios in which they could be applied.

Transparency

12.35 Regulation 10 sets out the requirements with regard to the obligation of Transparency and covers the following:

- Publication of information such as accounting information, technical specifications, network characteristics, terms and conditions of supply and use and prices in relation to interconnection and/or access;
- Publication of a sufficiently unbundled reference offer;
- ComReg's power to specify the precise information to be made available in the reference offer with regards to the level of detail and the manner of publication;
- ComReg's power to make changes to the reference offer and to direct the operator designated as having significant market power to publish the reference offer with such changes.

12.36 There is a natural linkage between any access or interconnection obligation and a transparency requirement making publicly available any technical and/or financial information to make such access or interconnection obligations feasible. There is also a logical linkage between transparency and non-discrimination to demonstrate compliance, and between transparency requirements and accounting separation. In practice transparency usually requires an undertaking having SMP to publish a reference offer for services, giving terms and conditions including prices.

12.37 On its own, transparency is unlikely to be an effective remedy. In general transparency is an ancillary obligation that is used in conjunction with other obligations, to make the overall remedy more effective. For example, where an undertaking having SMP is required not to discriminate towards competitors, it requires that parties can observe and compare the factors over which the discrimination could take place. Where an access obligation is proposed, transparency is also required to ensure that undertakings have the ability to view and take up the offer.

Non Discrimination

12.38 Regulation 11 lays down the requirements with regard to the obligation of Non discrimination and covers the following:

- ComReg's power to impose non-discrimination in relation to interconnection and/or access;
- Such non-discrimination shall ensure that the operator applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services. It shall ensure that the operator provides services and information to others under the same conditions and of the same quality as the operator provides for its own services or those of its subsidiaries or partners.

12.39 Non-Discrimination could be applied as a remedy in isolation, but to be effective it is likely to require the application of other obligations. Most notable of these is transparency, which more easily allows the identification of non-discriminatory behaviour. Non-discrimination may also be used in support of an Access obligation.

Accounting Separation

12.40 Regulation 12 sets out the requirements with regard to the obligation of Accounting Separation and covers the following:

- ComReg's power to impose accounting separation on an operator in relation to specified activities related to interconnection and/or access;
- ComReg's power to force a vertically integrated company to make transparent its wholesale prices and its internal transfer prices to ensure compliance with any obligation imposed under Regulation 11 and to prevent unfair cross-subsidy.

12.41 Accounting separation is an obligation that may be applied in the context of activities related to access and/or interconnection. It is an obligation that is usually put into place to support the obligations of transparency and non-discrimination. It can also be used to support the implementation of price control and cost accounting remedies (including cost accounting systems)

Access

12.42 Regulation 13 lays down the requirements with regard to the obligation of access to and the use of specific network facilities and covers the following:

- ComReg's power to impose on an operator obligations to meet reasonable request for access;
- ComReg's power to attach conditions of fairness, reasonableness and timeliness to the obligation to meet reasonable request for access;
- ComReg's obligation to review the imposition of meeting reasonable requests for access against a number of factors to ensure proportionality

12.43 Access obligations are required in circumstances where commercial negotiations fail between parties, or where commercial negotiation is difficult. Experience in Ireland, and in particular ComReg's interventions in developing products through mandated access, suggest that there are large differences in negotiating power between undertakings. Furthermore, most operators in the leased lines markets rely, to a greater or lesser extent, on eircom's infrastructure.

12.44 Mandating reasonable requests for access to the network infrastructure of an SMP undertaking can be justified as a means of promoting competition. However, ComReg is aware that it needs to balance the rights of an infrastructure owner to exploit its infrastructure for its own benefit, and the rights of other service providers to access facilities that are essential for the provision of competing services.

12.45 ComReg is also aware that the short-term gains of increased competition due to mandated access should not reduce the incentives for competitors to invest in alternative facilities that will secure more competition in the long-term.

12.46 Regulation 13 is broad in scope, as the regulator has the power to impose on an operator an obligation to meet reasonable requests for access and attach conditions of fairness, reasonableness and timeliness to the obligation. The obligation might include broad requirements to negotiate in good faith, to maintain supply, and to provide wholesale services for resale. In addition technical, interoperability,

operational support and general interconnection requirements may be included in the obligation.

- 12.47 ComReg is aware that Regulation 13 (4) requires ComReg, when considering whether to impose obligations under Regulation 13(1) and 13 (2), to assess whether such obligations would be proportionate to the objectives set out in Section 12 of the Communications Regulation Act 2002. ComReg must take into account the feasibility of providing the access proposed, the technical and economic viability of using or installing competing infrastructures, the initial investment by the facility owner bearing in mind the risks involved in making the investment, the need to safeguard competition in the long term, and where appropriate any relevant intellectual property rights and the provision of pan-European services.
- 12.48 The access obligation can be a stand-alone remedy with a general provision to provide access and to negotiate in good faith. It may also be used together with the other obligations, especially where cost control and non-discrimination obligations are required. It will rarely be the case that the access obligation is a sufficient remedy by itself. At a minimum, the transparency obligation will be required, usually in the form of a reference offer. Non-discrimination will usually accompany an access obligation. This arises particularly in the markets under review where there exists a vertically-integrated SMP undertaking. As discussed above, a non-discrimination obligation would protect against vertical leverage and the application of a margin squeeze. If non-discrimination and transparency obligations accompany an access obligation, ComReg needs to assess whether it has sufficient information to monitor the non-discrimination requirement. Where it is felt that there is insufficient information, ComReg would need to consider the application of accounting separation as an additional obligation. Finally, the actual level of charges for access may also need to be set by ComReg, and so a price control obligation may be imposed.

Price control and cost accounting

- 12.49 Regulation 14 sets out the requirements with regard to the obligation of price control and cost accounting and covers the following:
- ComReg's power to impose cost orientation of prices and obligations concerning cost accounting systems for the provision of specific types of interconnection and/or access in situations where a market analysis indicates that a lack of effective competition means that an operator might sustain prices at an excessively high level or apply a price squeeze to the detriment of end-users;
 - ComReg is required, when considering the imposition of obligations under Regulation 14(1) of the Access Regulations, to take into account any investment made by the operator in electronic communications networks or services or associated facilities which ComReg considers relevant and allow the operator a reasonable rate of return on adequate capital employed, taking into account the risks involved;
 - ComReg is obliged to ensure that the cost recovery mechanism or pricing methodology that it imposes serves to promote efficiency and sustainable competition and maximise consumer benefits;

- ComReg’s power to direct an operator to provide full justification for its prices and may, where appropriate, require prices to be adjusted;
- where an operator has an obligation under Regulation 14 of the *Access Regulations* regarding the cost orientation of its prices, the burden of proof that charges are derived from costs, including a reasonable rate of return on investment, shall lie with the operator concerned;
- ComReg is obliged to ensure, inter alia, that, where implementation of a cost accounting system is imposed under Regulation 14 of the *Access Regulations*, a description of the cost accounting system is made publicly available (compliance with such system to be verified, at the choice of ComReg, either by ComReg or a suitable qualified independent body) and that a statement regarding compliance with any such system is published annually.

12.50 Where competition is not effective in a market, it may be concluded that a price control is required as an obligation. This may take a number of forms, ranging from the requirement for prices to be reasonable to the requirement for prices to be cost-oriented. ComReg may calculate costs using methods appropriate to the circumstances, taking account of the need to promote efficiency and sustainable competition and consumer benefits.

12.51 This obligation may be applied where vertical leverage concerns are considerable and operators with SMP may apply a price squeeze and where entry is not expected to constrain operators with SMP over the time frame of this review; or to protect retail customers as excessive wholesale prices may translate into excessive retail prices.

Retail obligations

12.52 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 the minimum set of leased lines...is not effectively competitive, it shall impose obligations ...set out in Schedule 3” on undertakings “with significant market power in the provision of those specific elements of the minimum set of leased lines”. 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.

12.53 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.

Principles to be applied when selecting remedies

12.54 With respect to the retail markets, ComReg is obliged to ensure that the obligations set out in Schedule 3 of the *Universal Service Regulations* are imposed once a finding of SMP has been made.

12.55 When selecting appropriate remedies from the *Access Regulations* to address the 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*.

- 12.56 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 (in a national context this is Section 12 of the Communications Act 2002).
- 12.57 Given the identified actual and potential competition problems arising from eircom's dominance in the wholesale terminating segments, and the wholesale trunk markets, ComReg is obliged to implement remedies. As set out previously, ComReg believes it is unlikely that within the period of this review there is any possibility of the development of effective competition in these markets. Notwithstanding this, ComReg will choose appropriate remedies that will encourage efficient investment and innovation and further promote competition.
- 12.58 Where problems have been identified in specific markets and an undertaking(s) has been designated as having SMP, ComReg will select 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. In choosing remedies, ComReg will also take account of potential effects on related markets. In selecting appropriate remedies, ComReg will include a Regulatory Impact Analysis.
- 12.59 Where ComReg believes 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.
- 12.60 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. ComReg may impose remedies that enable new entrants to make incremental steps along the 'investment ladder'. It is important that such remedies exhibit predictability and are transparent so that business decisions can be planned accordingly. Such remedies may require a consistent price structure over a range of regulated access products. Where remedies are applied to encourage and promote efficient infrastructure investment, ComReg will monitor the process of migration to competing infrastructure.
- 12.61 Finally, the remedies chosen will be incentive-compatible. This means that the remedies will be selected and designed in a manner that ensures compliance with regulation outweighs the benefits of evasion.

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?

Remedies proposed

- 12.62 In this section ComReg sets out the detailed remedies that it proposes to impose on *eircom*, the designated SMP operator in the relevant markets under review in this paper, and measures these against the principles set out above. In the consideration of remedies below, ComReg has set out remedies that it considers to be appropriate at this time and in the prevailing market conditions. However ComReg proposes to reserve the right to issue further directions refining these remedies, if required from market needs.
- 12.63 In accordance with the principles discussed above, and with the objectives set out in the *Communications Regulation Act 2002* and the *Access Regulations*, ComReg will first consider remedies in those wholesale markets which are least burdensome yet sufficient to address the identified competition problems
- 12.64 It should be noted that ComReg is proposing remedies which 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.
- 12.65 ComReg then sets out its proposed application of the obligations mandated by Regulation 15 of the *Universal Service Regulations* in the relevant retail market (the minimum set of leased lines)

Wholesale Remedies

Access to and use of specific network facilities

- 12.66 When considering whether or not to impose an access obligation under Regulation 13 (10) or 13 (2) and the proportionality of so doing, ComReg must take account of Regulation 13 (4) of the *Access Regulations*. These factors include, *inter alia*, the technical and economic viability of using or installing competing facilities, in the light of market development; the feasibility of providing the access proposed, in relation to the capacity available; the initial investment by the facility owner bearing in mind the risks involved in making the investment; and the need to safeguard competition in the long term.
- 12.67 Earlier in this section ComReg set out the competition problems arising in the relevant markets. It can 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 and illustrations of non-price leveraging have also been set out.

- 12.68 In particular, the fact that competition problems stem from the considerable barriers to entry arising from sunk costs (particularly in the market for terminating segments) has led ComReg to conclude that replication does not appear to be feasible. Even though replication is less unfeasible in the trunk market, ComReg does not believe that the competitive situation will alter to a significant extent during the period of this review. This conclusion indicates that remedies should be designed in the first instance to provide OAOs with sufficient access to wholesale inputs.
- 12.69 ComReg's analysis of the competition problems suggests strongly that wholesale access obligations are necessary so as to promote more effective competition in retail markets. On its own it is highly unlikely that eircom would offer sufficient wholesale products through commercial negotiations with OAOs. To support this, ComReg points to the many interventions which it has had to make in respect of the introduction of wholesale access products (not just Partial Private Circuits and Wholesale Leased Lines, but other wholesale access products outside the scope of this review such as Bitstream and Local Loop Unbundling) over the last number of years.
- 12.70 Currently there are two main ways in which alternative operators 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. The offering of PPCs provides OAOs with greater flexibility in the market, and as a consequence should facilitate more effective and sustainable competition. This product is further described in Schedules⁸⁸ 100, 124 and 125 of eircom's reference interconnection offer (available on www.eircomwholesale.ie)
- 12.71 ComReg's market analysis suggests that OAOs have traditionally entered the leased lines retail market primarily by using eircom's wholesale products, which are offered only on an end-to-end basis. It is only recently that OAOs have had the opportunity to migrate to PPCs and hence reap efficiencies by using their own infrastructure. In the lifetime of this review, ComReg expects migration to PPCs to accelerate but also sees a continuing - if perhaps reduced - role for service-based competition using the wholesale leased lines product.
- 12.72 At the present time eircom is obliged to offer access to both wholesale leased lines and PPCs. In reviewing these obligations, ComReg is mindful of their interaction and the effects on sustainable competition. While an access obligation for both products could be imposed, ComReg believes that a less burdensome remedy would

⁸⁸ Please note that ComReg has proposed revised numbering for Service Schedules in eircom's Reference Interconnection Offer. See Document 04/53 Response to Consultation on ComReg's review of the text of eircom's RIO. However this document refers to the Service Schedule numbers which are currently in use.

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.

- 12.73 ComReg has considered whether or not it should mandate that wholesale leased lines be provided following an access remedy. ComReg believes it would not be appropriate to follow this course of action, as similar benefits at a lower regulatory cost can be achieved by through a non-discrimination obligation. 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, most of the competition problems relate to issues of potential or actual discrimination. An obligation of non-discrimination obviously targets these in a more appropriate manner than an obligation of access. ComReg discusses this further below.
- 12.74 ComReg therefore proposes, 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.
- 12.75 In the future and within the timescale of this review, ComReg considers 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. At this stage ComReg believes it to be overly interventionist and premature to mandate such products, but does propose 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). However at this stage ComReg wishes to note that imposition of any access remedy through Regulation 13 will be granted only when that remedy represents the only way to compete effectively.

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?

12.76 In order to take up PPCs (and other products) OAOs need to acquire capacity based interconnection products such as In Span Interconnect (ISI⁸⁹); In Span Handover (ISH); Customer Sited Interconnection (CSI) and Customer Sited Handover (CSH) as set out in Schedules⁹⁰ 101 and 126 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 products⁹¹, outside the SMP designation process.⁹²

12.77 When products are mandated ComReg believes that there may be an incentive for eircom to limit access or make access more difficult. Many of the detailed negotiations at the PPC forum have not been in respect of the availability of the PPC product, but refer more to the form of that provision. 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.

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 Operational Support Systems (OSS) or similar software necessary to ensure fair competition in the provision of services? Please detail your response.

⁸⁹ No new orders can be submitted for ISI circuits

⁹⁰ Please note that ComReg has proposed revised numbering for Service Schedules in eircom's Reference Interconnection Offer. See Document 04/53 Response to Consultation on ComReg's review of the text of eircom's RIO. However this document refers to the Service Schedule numbers which are currently in use.

⁹¹ In principle Service Schedules 101, 126, and 302 of the Reference Interconnection Offer

⁹² It should also be noted that ComReg proposes to also mandate, where justified, Bitstream Extension Circuits/ Interconnection Extensions Circuits as well as other future data and voice interconnection services which can be mandated without the need for SMP designation.

12.78 Additionally, pursuant to Regulation 13 (2) (b) ComReg also believes 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. In respect of PPCs, many of the issues on which ComReg intervened related to delays experienced between the parties. Indeed the fact that ComReg had to set up and chair a PPC forum to agree arrangements arose from the failure of commercial negotiations.

Q. 26. Do you agree that *eircom* should be required to negotiate in good faith? Please detail your response.

12.79 ComReg also proposes, pursuant to Regulation 13 (2) (c), to impose the obligation on *eircom* not to withdraw access to facilities already granted. This is necessary to ensure that OAOs have the certainty to provide retail services to the marketplace and so compete with *eircom*.

12.80 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 proposes 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.

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.

12.81 Pursuant to Regulation 13 (3) ComReg may also attach conditions covering fairness, reasonableness and timeliness to the obligations set out above. In this context, ComReg believes that Service Level Agreements (SLAs) are required in respect of those products mandated following an access obligation, and at all process points⁹³. This is necessary 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, 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.

⁹³ In the context of PPCs, ComReg considers the current SLAs published by *eircom* to comply with such an obligation.

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.

Non- discrimination

- 12.82 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. Given the nature of eircom's dominance in the wholesale trunk and wholesale terminating markets and the fact that options for replicability are limited, ComReg considers that OAOs require access to wholesale inputs to provide their retail services.
- 12.83 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.
- 12.84 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 the Carrier Services SLA by OAOs. ComReg believes that an obligation of non-discrimination provides the same ability to OAOs to purchase wholesale end to end circuits and is a more appropriate regulatory instrument than mandated access pursuant to Regulation 13 as it directly targets the nature of the problem.
- 12.85 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 eircom would be dominant. ComReg therefore considers it necessary to continue the provision of wholesale leased lines at all bandwidths provided in the retail markets.
- 12.86 For the reasons set out above, ComReg proposes that eircom should continue to offer the wholesale leased line product set⁹⁴ pursuant to an obligation of non discrimination.
- 12.87 In addition to the provision of access through a non-discrimination obligation resulting in a wholesale leased line offer, ComReg also believes it important to

⁹⁴ 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 understands 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.

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.

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.

- 12.88 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 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 such as withholding of information, delaying tactics, undue requirements, low or discriminatory quality, strategic design of product, and discriminatory use of information and earlier in this paper, ComReg has set out its reasoning for holding this view. ComReg believes that non-discrimination is the only remedy which can directly target these competition problems.
- 12.89 Therefore ComReg proposes to impose the following obligations to ensure non-discrimination both in respect of the wholesale leased line offer and any access obligations proposed above.
- 12.90 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.
- 12.91 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.
- 12.92 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 (pursuant to a reasonable request being made for access), 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.

12.93 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. For example, part of the effectiveness of the non-discrimination obligation is reliant on the introduction of the obligation of accounting separation to facilitate the verification of compliance that eircom is providing services to other operators under the same pricing conditions as provided for its downstream arms. Similarly a transparency obligation is required to demonstrate that services of equivalent quality are delivered by eircom to other operators and its downstream arm. ComReg sets out further detail on proposed obligations below.

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.

Transparency

12.94 Following the imposition of access and non-discrimination obligations, ComReg believes that it is proportionate and justified to impose an obligation of transparency. This ensures that OAOs have sufficient information and clear processes to which they would not otherwise have access. This assists their entry into the market and hence promotes competition. Transparency also provides a method of ensuring compliance with a non-discrimination obligation, as the information needed to measure this would not otherwise be available. Therefore ComReg considers an obligation of transparency directly targets the nature of the problem and should be imposed on eircom.

Q. 31. Do you agree that an obligation of transparency should be imposed on eircom? Please detail your response.

12.95 Regulation 10 (2) provides for the regulator to require the SMP operator to publish 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 would 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.

12.96 Currently eircom publishes, as part of the Reference Interconnection Offer, Service Schedules for the Partial Private Circuit Product⁹⁵. ComReg believes that this obligation should be maintained. Regulation 10 (3) allows ComReg to specify the precise information to be made available, the level of detail required and the manner

⁹⁵ See in particular Service Schedule 100, 124 and 125

of publication. ComReg is not currently of the view that any further detail is required to be added to the reference offer for PPCs but would appreciate feedback from interested parties.

12.97 In respect of the Wholesale Leased Line product set ComReg does not believe that a reference offer is currently published for these products. Documentation is 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. Regulation 10 (2) states that a reference offer is required in particular where obligations have been imposed under Regulation 11 (non-discrimination) and so ComReg believes that an offer should be published for this. This could be part of the Reference Interconnection Offer or could form a stand-alone document. This would 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. Regulation 10 (3) allows ComReg to specify the precise information to be made available, the level of detail required and the manner of publication and ComReg is interested to hear views as to whether extra information should be included in the proposed reference offer.

12.98 ComReg expects that any new offerings developed pursuant to Regulations 11 and 13 should also be detailed in a reference offer.

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.

12.99 Regulation 10 also provides for ComReg to require an operator to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices. ComReg considers that most of that information will be available in the proposed reference offer

12.100 However, as signalled earlier ComReg considers that an obligation of transparency is necessary in order to ensure that eircom complies with an obligation of non-discrimination.

12.101 The current SLA was developed, amongst other reasons, to assuage the concerns of industry as to eircom’s compliance with an obligation of non-discrimination. ComReg considers that the current level of transparency attached to this has proved its effectiveness and its withdrawal would adversely affect all market players. Therefore ComReg proposes to maintain this obligation.

12.102 The current regime requires eircom to publish

- 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).

12.103 However ComReg understands 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.

12.104 ComReg would prefer to regularise all reporting on the SLA and seeks responses from industry as to the method and frequency of this reporting.

12.105 ComReg also believes it will be necessary to impose obligations of transparency in support of the non-discrimination and accounting separation obligations because it allows the calculation of costs and price, i.e. internal price transfers, to be rendered visible and allows ComReg to check compliance with obligations of non-discrimination and to address the price competition problems. ComReg considers that the effectiveness of the transparency and non-discrimination obligations is reliant on the introduction of an obligation of accounting separation to facilitate the verification of compliance.

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.

Price control and Cost Accounting

Introduction

12.106 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.

12.107 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 interest of end-users.

12.108 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.

- 12.109 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

- 12.110 ComReg has 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.
- 12.111 As eircom is a vertically-integrated operator with market power in the wholesale markets, without 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.
- 12.112 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

- 12.113 Eircom is currently required to offer access to Partial Private Circuits and wholesale leased lines and meet reasonable requests for these products. ComReg is proposing to continue with the mandatory access to PPCs, but proposes to lighten the regulatory requirements with regard to wholesale leased lines by applying a non-discrimination obligation under the access regulations.
- 12.114 The market definition analysis has concluded with the preliminary finding 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.
- 12.115 Unlike leased lines, 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 voice and data services). Wholesale leased lines, by contrast, have equivalent retail offerings. For example, a 2Mb/s wholesale leased line is functionally equivalent to a 2Mb/s retail leased line.
- 12.116 Historically OAOs in Ireland have purchased eircom's wholesale leased lines 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 mandated using price terms governed by a retail-minus formula. These access and price control obligations have enabled service-based competition, and as a consequence efficient OAOs have been able to grow larger customer bases. As the customer bases of OAOs achieve 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 reach further to the customer locations.

- 12.117 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.
- 12.118 The emergence of PPCs in the leased lines markets enable OAOs to climb further up the 'ladder of investment'⁹⁶. Hence, 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 enables OAOs to climb up the ladder of investment.
- 12.119 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.
- 12.120 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.

PPC Price control

- 12.121 ComReg's preliminary finding is that eircom is dominant in the wholesale terminating segments market for leased lines and the wholesale trunk market for leased lines.
- 12.122 eircom's dominance in the above wholesale markets would enable it to exploit its market position (primarily excessive pricing) which would be detrimental for OAOs and their end users. Consequently, ComReg is proposing to mandate access to PPC products.
- 12.123 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.
- 12.124 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-

⁹⁶ See for example ERG Common Position on Remedies, April 2003 available on www.erg.eu.int

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.

Wholesale Leased Lines Price control

- 12.125 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 retail leased lines in the retail market.
- 12.126 ComReg's preliminary finding is that eircom is dominant in the wholesale terminating segments market and the wholesale trunk market. ComReg has made the preliminary finding that eircom is dominant in the retail 'minimum set' market for leased lines.
- 12.127 With the expected migration by OAOs to PPCs, ComReg expects there will be increased 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.
- 12.128 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%.
- 12.129 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, and so a retail-minus formula leads to prices that are equivalent to a cost-based method. Therefore the application of 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?

Cost Accounting Systems

- 12.130 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 and therefore ComReg proposes to impose a further obligation with regard to cost accounting systems on eircom.
- 12.131 In this regard, the obligation of cost accounting systems supports the obligations of cost-orientation and accounting separation and can provide greater assurance to ComReg in monitoring of the obligation of non-discrimination and 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.
- 12.132 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.
- 12.133 ComReg is of the view that 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.
- 12.134 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 for and amount of allocation across all services. Therefore an obligation of Cost Accounting Systems can provide greater assurances in monitoring non-discrimination and address the competition problems identified.

- 12.135 ComReg does not consider that this obligation will be time consuming and impose a heavy burden on eircom, as given the size of such an organisation, it must already have management accounting systems in place to support internal business decision making.
- 12.136 ComReg proposes to consult further on cost accounting systems and accounting separation methodologies supporting cost accounting. In the interim ComReg is proposing that it maintain 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.

Accounting Separation

- 12.137 ComReg has required eircom to supply financial information either 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 perform its duties to ensure prices are not set at an excessive level, to monitor margin squeezes and provide greater certainty about the cost base.
- 12.138 Separated accounts will help disclose possible market failures and provide evidence in relevant markets of the presence or absence of discrimination and margin squeeze. They will make visible the wholesale prices and internal transfer prices of a dominant operator's products and services.
- 12.139 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 of 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.
- 12.140 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 such 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.
- 12.141 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.

- 12.142 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 in the support of competition promotion, encourages access to the network in order to ensure efficient and sustainable competition and contributes towards maximising consumer benefits. In this regard, the accounting separation obligation is designed to help provide evidence from eircom which may demonstrate the presence or absence of discrimination. In this regard, ComReg believes the imposition of accounting separation upon eircom to be justifiable and based upon the nature of the problem identified.
- 12.143 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.
- 12.144 ComReg proposes to consult further on accounting separation but in the interim, ComReg is still proposing that it maintain the existing level of accounting separation on eircom until such time as any further consultations are completed.

<p>Q. 37. Do you believe eircom should have an obligation of accounting separation? Please detail your response.</p>

Retail Obligations

Minimum Set of Retail Leased Lines (below and including 2Mb/s)

- 12.145 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.

- 12.146 Eircom has been designated with a preliminary 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

- 12.147 The *Universal Service Regulations* state that the SMP operator must apply similar conditions in similar circumstances to organisations providing similar services, and must 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 applicable⁹⁷. 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.
- 12.148 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 views on notification and publication of terms and conditions are detailed in the section on transparency below.
- 12.149 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.

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.

Cost Orientation

- 12.150 The Regulations state that ComReg must ensure that tariffs for leased lines in the minimum set follow the basic principles of cost orientation.
- 12.151 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. Without 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 for cost-oriented retail tariffs for leased lines in the minimum set.

12.152 ComReg is aware that proposed wholesale remedies, in particular the obligation of retail-minus for wholesale leased lines, may be sufficient to remedy competition problems in downstream retail markets. However, ComReg does not believe that eircom will face sufficient competition in retail leased lines below and up to 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. ComReg therefore believes that the regulation of retail tariffs in the minimum set is necessary to protect end-users from excessive prices

12.153 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 (FDHC). As eircom is 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.

12.154 Any future price changes need to be objectively justified. ComReg sets out transparency requirements to monitor this obligation later in the text.

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 to ComReg's proposed implementation method.

Cost Accounting Systems

12.155 The Universal Service Regulations also require that ComReg ensure that eircom formulates and puts 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

12.156 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.

- 12.157 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, and to provide evidence of the presence or absence of discrimination and margin squeeze and greater certainty about the cost base. This is obviously vital to support the obligations in relation to cost orientation and cost accounting systems.
- 12.158 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 the support of competition promotion, in order to ensure efficient and sustainable competition and must contribute towards maximising consumer benefits. In this regard, 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
- 12.159 If ComReg were to withdraw this obligation, it would not be able to adequately monitor such margin squeeze problems or determine if costs are set at an excessive level or of have any information on margins in the retail business.
- 12.160 ComReg proposes to consult further on cost accounting systems and accounting separation methodologies supporting cost accounting. In the interim ComReg is proposing that it maintain the existing level of cost accounting systems and accounting separation obligations on eircom until such time as any further consultations are completed.

Q. 40. The legislation requires that ComReg impose an obligation of cost accounting systems on eircom. Do you agree with the approach set out? Please detail your response.

Transparency

- 12.161 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

- 12.162 Part 14 of the eircom Telecommunications Scheme currently references the leased lines provided by eircom and provides links to the ITU standards. ComReg considers this meets the requirements of this obligation and proposes to maintain the current publication.

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.

Tariffs, including the initial connection charges, the periodic rental charges and other charges. Where tariffs are differentiated, this must be indicated.

- 12.163 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.
- 12.164 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 and consequent changes to their retail prices that they wish to make.
- 12.165 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 preliminary view is that the benefits of advance notification in supporting cost-orientation and non-discrimination obligations are likely to outweigh any potential disadvantages, but is particularly interested in respondents' views on this point.
- 12.166 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. The revised obligation would be as follows:

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

- 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.
- 12.167 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 other 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 regulation.
- 12.168 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.
- 12.169 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
- 12.170 ComReg also proposes that this obligation apply 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.
- 12.171 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.
- 12.172 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.

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.

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 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.*

12.173 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

12.174 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.

12.175 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 Commission⁹⁸.

12.176 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.

Q. 43. Do you agree 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.

⁹⁸ Please note that eircom does publish some statistics – but in respect of the OAO and retail markets – on <http://www.eircomwholesale.ie/pdfs/11statsissue26.pdf>

13 Regulatory Impact Assessment

- 13.1 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.”

- 13.2 ComReg is obliged under Regulation 9(6) of the Access Regulations to impose obligations ‘ based on the nature of problem identified, 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’
- 13.3 ComReg will conduct a Regulatory Impact Assessment which will form part of the decision making process and would invite comments on the proportionality of the remedies listed in section 12 of this consultation and the justification of the remedies listed.

Q. 44. Respondents are asked to provide views on whether the remedies in section 12 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.

14 Submitting Comments

- 14.1 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.
- 14.2 The consultation period will run from the 4th of June to the 16th of July during which ComReg welcomes written comments on any of the issues raised in this paper.
- 14.3 “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”.
- 14.4 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.
- 14.5 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 you agree with the methodology proposed by ComReg? Please detail your views.	18
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.	26
Q. 3. Do you believe that network termination points represent the boundary of a leased line? Please detail your reasoning.	26
Q. 4. Do you agree that there should be separate markets for trunk segments and terminating segments? Please detail your response with supporting evidence.	30
Q. 5. 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.	31
Q. 6. 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.	32
Q. 7. 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.	32
Q. 8. 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.	34
Q. 9. Do you agree with ComReg’s preliminary market analysis of the wholesale trunk segments? Please support your response with evidence.	43
Q. 10. Do you agree with the above preliminary conclusions regarding market analysis? Please provide evidence to support your response.	49
Q. 11. Do you believe VPNs should not be included in the market? Please provide evidence to support your response.	62
Q. 12. 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.	63
Q. 13. Do you believe that ATM services should not be included in the market? Please provide evidence to support your response.	64
Q. 14. Do you believe that Frame Relay should not be included in the market? Please provide evidence to support your response.	64
Q. 15. Do you believe that Ethernet should not be included in the market? Please provide evidence to support your response.	65
Q. 16. Do you believe that SDSL should not be included in the market? Please provide evidence to support your response.	66

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

- Q. 17. Do you believe that ADSL should not be included in the market? Please provide evidence to support your response..... 66
- Q. 18. 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. 69
- Q. 19. 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..... 71
- Q. 20. 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. 81
- 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? 95
- 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..... 97
- 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..... 97
- 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?..... 98
- 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 Operational Support Systems (OSS) or similar software necessary to ensure fair competition in the provision of services? Please detail your response..... 98
- Q. 26. Do you agree that eircom should be required to negotiate in good faith? Please detail your response. 99
- 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. 99
- 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 your response. 100
- 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. 101

- 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..... 102
- Q. 31. Do you agree that an obligation of transparency should be imposed on eircom? Please detail your response..... 102
- 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. 103
- 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..... 104
- 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. 107
- 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? 108
- Q. 36. Do you agree that obligations in respect of cost accounting systems should be imposed on eircom? Please detail your response..... 109
- Q. 37. Do you believe eircom should have an obligation of accounting separation? Please detail your response..... 110
- 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.111
- 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 to ComReg’s proposed implementation method. 112
- Q. 40. The legislation requires that ComReg impose an obligation of cost accounting systems on eircom. Do you agree with the approach set out? Please detail your response..... 113
- 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..... 114

Wholesale Terminating and Trunk Segments of Leased Lines and
Retail Leased Lines (National)

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. 116

Q. 43. Do you agree 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. 117

Q. 44. Respondents are asked to provide views on whether the remedies in section 6 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. 118

Annex B – 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

Wholesale Terminating and Trunk Segments of Leased Lines and
Retail Leased Lines (National)

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.

Wholesale Terminating and Trunk Segments of Leased Lines and Retail Leased Lines (National)

Appendix C – Progress Summary of MANs

Programme Summary

Region	Coverage Area	Construction Commencement Date	Total Length of New Works	Progress To Date	Estimated Completion Date
Cork	Cork City & County	February 2003	40 Km	40 Km & 252 Chambers	Q.1, 2004
Galway	Galway City & County	February 2003	44.5 Km	41 Km & 214 Chambers	Q.1, 2004
Mayo	Ballina	March 2003	19 Km	19 Km & 145 Chambers	Q.4, 2003
Midlands	Athlone, Mullingar, Portlaoise, Tullamore & Roscommon	May 2003	76.7 Km	76 Km & 266 Chambers	Q.1, 2004
Limerick	Limerick City & County	May 2003	41.3 Km	30 Km & 180 Chambers	Q.2, 2004
SERA	Carlow, Kilkenny, Wexford, Waterford, Dungarvan & Clonmel	September 2003	86 Km	9 Km & 108 Chambers	Q.2, 2004
Leitrim	Carrick-On-Shannon & Manorhamilton	July 2003	14.1 Km	15 Km & 125 Chambers	Q.1, 2004
Donegal	Letterkenny	November 2003	16.5 Km	2 Km & 19 Chambers	Q.2, 2004
	Gweedore	September 2003	4.5 Km	4.5 Km & 51 Chambers	Q.1, 2004