



Response to Consultation Paper

**Market review: Wholesale physical network  
infrastructure access (Market 4)**

**Response to ComReg Document 08/41 and Draft  
Decision**

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All responses to this consultation should be clearly marked:-  
“Reference: Submission re ComReg 08/104” as indicated above,  
and sent by post, facsimile, e-mail or on-line at [www.comreg.ie](http://www.comreg.ie)  
(current consultations), to arrive on or before 5pm, 13 February  
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## 1 Foreword

This market review is conducted by ComReg in accordance with a European Commission recommendation that national regulators review those wholesale broadband markets which it considers to be susceptible to *ex ante* regulation.<sup>1</sup> This paper addresses the market for Wholesale Physical Network Infrastructure Access (WPNIA). This, in simple terms, has traditionally represented the market for unbundled access over “last mile” copper loops between a telephone exchange and the end user or Local Loop Unbundling (LLU). This review however has had to consider that the prospect that at least some of these copper loops may be replaced by a fibre optic cable in the near future (these loops being generically known as Next Generation Access – or NGA). Accordingly it is not restricted to a review of the provision of access to metallic loops, but physical access more generally, regardless of the medium.

Since ComReg’s previous analysis of the wholesale unbundled access market in 2003, significant developments have taken place in the way that broadband can be delivered to consumers, in the capability of broadband products, and in the needs and wants of consumers. On one hand the Irish market has seen a notable growth in the up-take of broadband: on the other Ireland has lagged behind other countries in the use of LLU. Other countries have seen a move to provide very high capacity broadband while plans here are still nascent. There is a risk that Ireland may be left behind.

In this paper ComReg concludes that Eircom is dominant in the market for WPNIA. In addressing this fact ComReg proposes remedies that attempt to address what it views as current failings with regard to LLU. It also has tried to bring as much regulatory certainty to all parties so that unbundling operators can invest with confidence but also so that investment in new infrastructure such as fibre optic cable (commonly referred to as Next Generation Access of “NGA”) can also take place. Accordingly in this paper ComReg proposes that services provided over NGA should be regulated but also proposes that the precise form of these remedies and how they are implemented should be the subject of further consultation. This is because the economics of NGA are not yet fully understood and because the technical aspects of how access might be provided needs to be debated further. Despite the disappointing progress to date in independently chaired industry fora, ComReg at this stage has not ruled out the prospect that some or all of these negotiations between industry players as to how the new infrastructure might be funded and accessed might be largely negotiated between operators. ComReg may be prepared to apply the minimum direct regulatory obligations if it appeared to it that such an approach could work. Nevertheless it should also be understood that if it became apparent that such efforts were likely to be unsuccessful, and particularly if it seemed that there was a risk of the restoration of monopoly conditions to the access network, then ComReg intends to intervene promptly. ComReg will consult further on the detail of NGA remedies shortly.

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<sup>1</sup> European Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (2007/879/EC) (OJ L 344, 28.12.2007, p. 65–69)

## 2 Executive Summary

### Background

- 2.1 The first round national consultation on Wholesale Unbundled Access (including shared access) to metallic loops and sub-loops<sup>2</sup> was published on 11 December 2003. The response to consultation and draft decision were notified to the European Commission and published on 16 April 2004<sup>3</sup>, and the Decision Notice was published on 15 June 2004<sup>4</sup>. Since the publication of the Decision Notice, ComReg has been heavily involved in this market, and has been engaged in further consultation<sup>5</sup> and industry discussion.
- 2.2 An initial second round consultation was published on 11 June 2008 (ComReg document 08/41). This was published in the context of an updated European Commission recommendation on relevant markets (December 2007), which recommended a technology neutral definition of the market. ComReg has taken utmost account of the European Commission's recommendation, and the market is now defined as Wholesale Physical Network Infrastructure Access (including shared or fully unbundled access) at a fixed location (WPNIA).
- 2.3 Ten responses to the Consultation were received, from: Allen Technologies, BT, Colt Telecom, Eircom, Imagine, Magnet, Meteor, Smart Telecom, 3 Play Plus and Vodafone.
- 2.4 ComReg thanks all respondents for their input.

### Market Definition

#### Retail market

- 2.5 ComReg is not required to undertake a formal analysis of the retail broadband market, as the European Commission does not consider the retail broadband market to be susceptible to ex ante regulation. However, an understanding of the dynamics of the retail market is useful when considering the wholesale market.
- 2.6 ComReg maintains the view expressed in the Consultation that the retail broadband market includes all forms of access from fixed locations, because customers would be able, and likely, to switch to access via an alternative platform (where available) given a small but significant increase in price. The retail market does not include retail mobile broadband. Further analysis addressing issues raised by respondents indicated that, on balance, functional differences continue to render fixed and mobile retail broadband in separate markets, and this is supported by operator behaviour in the market.
- 2.7 The retail market is national in scope.

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<sup>2</sup> ComReg 03/146

<sup>3</sup> ComReg 04/40

<sup>4</sup> D8/04 ComReg 04/70

<sup>5</sup> For example, on line share 04/111 and 05/22

### Wholesale market

- 2.8 At present, Eircom provides certain wholesale physical access products as a requirement of existing legislation. Eircom is required to provide fully unbundled local metallic path (ULMP) and a combined Geographic Number Portability and Unbundled Local Metallic Path service (GLUMP); and line sharing, for both loops and sub-loops, and is required to facilitate collocation, and to provide associated facilities necessary to support the products (collectively ‘LLU products’).
- 2.9 While the WPNIA market has traditionally been associated with physical access to the local metallic loop, the deployment of Next Generation Networks (NGNs) may change the architecture and design of broadband networks, such that sections of the metallic local loop are overlaid (or replaced) by fibre.
- 2.10 ComReg’s approach is to consider a market for WPNIA, and to consider whether it is significant that the infrastructure may be fibre. The core concern therefore is with considering wholesale access as a means of overcoming a bottleneck. ComReg accepts that it may or may not be possible to unbundle fibre in the way that a copper loop can be unbundled. However, ComReg’s concern is to ensure that any new network provision recognises the requirement to provide WPNIA. ComReg recognised in the consultation that this could be achieved in different ways, and has, in its forward-looking analysis, considered whether this could be achieved, for instance, by specifically obliging access to ducts and/or to dark fibre.
- 2.11 ComReg is therefore establishing a set of principles which apply to the WPNIA market. The WPNIA market is not restricted to current products, nor to current technologies. In considering whether fibre would be included in this market, ComReg’s view, having considered all relevant inputs, is that where fibre is used to provide network infrastructure access, then a wholesale product should be made available. ComReg has not tried to specify what that wholesale product should be, because it recognises that the market is evolving. Rather, the intention is to ensure that a wholesale product is available subject to reasonable requests, and in compliance with any and all obligations which may be imposed following a finding of SMP.

### *Product market*

- 2.12 ComReg’s conclusion is that the WPNIA market comprises wholesale physical network infrastructure access, including shared and fully unbundled access, at a fixed location. An operator that currently owns Fixed Wireless Access (FWA), cable, fibre or mobile infrastructure would not consider building new infrastructure as an alternative to investing in WPNIA, because of the time and costs involved. Further, it would not be possible for an operator to buy a WPNIA product on another operator’s (other than the incumbent) infrastructure within a twelve month period.
- 2.13 At present, it is not technically possible to provide WPNIA on a cable, FWA or mobile network, and the time and costs involved in developing such a product means that it would not be likely within the timeframe of this review. Presently no alternative Fibre to the Home (FTTH) wholesale product is offered and ComReg

is of the view that no such product would be offered to a sufficient degree to exert a pricing constraint on the fixed access network. The functions and investment requirements for a virtual access product, such as bitstream, are sufficiently different to those associated with a physical access product, such that virtual access is in a separate product market.

2.14 The incumbent's self-supply forms part of the WPNIA market. Any indirect pricing constraint from the retail level is not sufficient to render alternative infrastructures in the WPNIA market.

#### *Wholesale geographic market*

2.15 Following further consideration of the geographic dimension, ComReg notes that while there is variation in conditions of demand and supply between different geographic areas, this is not sufficient to indicate that there are separate geographic markets. ComReg has therefore concluded that the WPNIA market is national in scope.

### **Competition and SMP Analysis**

2.16 The Competition and Significant Market Power (SMP) analysis demonstrate that there is not, nor will there be within the lifetime of this review, effective competition in the WPNIA market. This conclusion is based, inter alia, on the following:

- Eircom has a 100% share of the relevant market. It is the only operator which can and does (under regulation) offer a wholesale physical access product
- Existing competitors do not pose a significant competitive constraint
- Barriers to entry are high and non-transitory
- Potential competition is negligible
- Countervailing buyer power is negligible.

2.17 For these reasons, Eircom is proposed to be designated with SMP in the WPNIA market.

### **Remedies**

2.18 As a consequence of Eircom holding Significant Market Power, ComReg believes there would be significant scope for the following competition problems to arise in the WPNIA market:

- Exploitative practices, such as excessive pricing, inefficiency and denial of access
- Leverage, in particular vertical leverage from the WUA market to the downstream wholesale and retail markets

- Exclusionary practices aimed at defending the SMP position

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

#### Application of remedies in a Next Generation Access environment

2.20 The advent of Next Generation Access (NGA)<sup>6</sup> should not be allowed to lead to a restoration of monopoly conditions over the access network. Failing to impose some form of remedial obligations over NGA infrastructure would ultimately be contrary to ComReg's statutory responsibility to promote competition and the interests of end users. However, given the lack of certainty around the nature and the timing of any NGA investment, given the continuing evolution of some services, and given the diverse views expressed by respondents, ComReg believes that while it is important to establish the principles of regulatory remedies which would apply to the WPNIA market, and to establish how these remedies will be implemented in terms of the current generation of products and services, further consultation is required to consider how these obligations may best be implemented in a NGA environment.

2.21 For all WPNIA products and services which are addressed in an NGN/NGA environment, the following obligations shall apply:

- Pursuant to Regulation 13 of the Access Regulations, Eircom will be obliged to meet reasonable requests for access to, and use of, specific WPNIA network elements and associated facilities
- Pursuant to Regulation 10 of the Access Regulations, a transparency obligation shall be imposed on Eircom
- Pursuant to Regulation 11 of the Access Regulations, a non-discrimination obligation shall be imposed on Eircom

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<sup>6</sup> In this document the term "current generation products, services and associated facilities in the Market" refers to those products, services and associated facilities which are at present offered over copper using Digital Subscriber Line technology, including but not limited to those products, services, associated facilities and variants of those, which are specified in the current Version 1.21 of Eircom's Access Reference Offer.

Next generation access is considered to include access networks which permit very high speed access reaching from multi-functional access and aggregation nodes to the end-users. Such an NGA network can be made of fibre, coaxial cable, powerline communications, wireless technologies, or hybrid deployments of these technologies, such as combining fibre and copper. In the context of the WPNIA market in Ireland as defined this will mean that part of the access network that is composed of fibre optic cable although it might include other new infrastructure that permits very high speed access.



- The pricing of NGN/NGA-based WPNIA products and services shall be subject to further consultation
- Obligations concerning cost accounting and accounting separation shall be subject to further consultation, which ComReg intends to launch shortly.

2.22 By imposing a set of remedies in principle, ComReg is establishing its approach to NGN/NGA, and noting that the introduction of new types of access cannot be allowed to restore monopoly conditions. However, in recognition of uncertainty surrounding how and when NGA may be introduced, ComReg will consult shortly on the detail of the specific remedies associated with NGN/NGA. It should be noted that Eircom will be expected to ensure that sufficient transparency is brought to its NGA development plans immediately.

#### Application of remedies to the current generation of products and services

##### *Access to and use of specific network elements and associated facilities*

- 2.23 An access obligation shall be imposed on Eircom to provide access to all WPNIA products, services and associated facilities<sup>7</sup> on a technologically neutral basis in response to a reasonable request. The obligation would include, but would not be limited to, those products currently offered in Eircom's ARO and supporting LLU documentation. It would also apply to connectivity/backhaul between cabinet or exchange based equipment and handover points.
- 2.24 Eircom shall have, as part of its Access obligation, an obligation not to withdraw or reduce access to facilities already granted, except where this has been approved by ComReg. This relates to all aspects of the WPNIA product life cycle. It is proposed that no Eircom exchange or exchange dimension or access to exchange or exchange dimension, normally consumed as part of the WPNIA product set may be removed or access diminished with less than 5 years' notice, except where this withdrawal and associated timescales have been approved by ComReg.
- 2.25 Eircom shall be obliged to provide all necessary information which supports existing and future WPNIA services as part of its access obligation. This obligation applies to all information necessary for an undertaking to provide a retail service which is of the same quality and standard as Eircom's retail offering, or those of its subsidiaries or partners.
- 2.26 Eircom shall be obliged to provide information which must be as complete and to the same standard as that provided to Eircom's retail offering, or those of its subsidiaries or partners. The mechanism which is made available to undertakings to access this information must be as efficient and effective as that provided to Eircom's retail operation for the same purpose.

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<sup>7</sup> As defined in the Framework Regulations and also within the meaning contained in the definition of access in the Access Regulations. The European Communities (Electronic Communications Networks and Services) (Access) Regulations 2008. The European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003.

- 2.27 ComReg shall impose the obligation on Eircom to meet reasonable access requests as part of its Access obligation. Reasonable access will apply to the need for a scalable product, provided in a timely and non-discriminatory manner. ComReg considers that it is reasonable to expect that Eircom's resources will be managed efficiently in order to facilitate Other Alternative Operators (OAO) access. Reasonable access requests will include, but not be limited to, requests for variants of products, and requests to migrate customers between wholesale products and variants of these products, including between current generation wholesale products, such as the Sub Loop Unbundled product and NGN related products. A reasonable request to migrate from a virtual access product such as bitstream to a physical access product such as LLU or line share would be considered under the access obligation applied to the WPNIA market. The process by which Eircom considers requests from OAOs should mirror the process enjoyed by Eircom's retail arm in terms of number of process steps, timeliness, transparency, efficiency and coordination with Eircom's IT development process and timelines.
- 2.28 Eircom shall provide WPNIA on terms and conditions which are fair, reasonable and timely. These terms and conditions shall be supported by Service Level Agreements (SLAs) as part of its access obligation. The SLAs negotiated with undertakings should offer performance to a standard and quality which supports the delivery of a high quality, mass market retail offering. The provision of service credits must be timely and efficient. ComReg shall intervene should the SLA fail to meet its objectives
- 2.29 Performance metrics for WPNIA products will be defined by ComReg in consultation with industry, will be published, and will be subject to regular review. Eircom shall be obliged to comply with these Key Performance Indicators (KPIs) concerning WPNIA products and their implementation. Failure to achieve the performances targets may become a matter for regulatory compliance as this could be seen as an effective failure to supply.
- 2.30 Eircom should be obliged to develop an Internal Reference Offer (IRO) which demonstrates that its WPNIA offer allows OAOs to provide a retail offering of at least the same quality as Eircom's retail offering or those of its subsidiaries or partners.
- 2.31 Eircom shall be obliged to negotiate in good faith with undertakings requiring access and the duty rests with Eircom to demonstrate it has negotiated in good faith with the undertaking(s) requesting access.
- 2.32 Eircom shall be obliged to negotiate in good faith with undertakings in relation to the conclusion of a legally binding and fit-for-purpose SLA.
- 2.33 Eircom shall provide access to WPNIA services, associated facilities, information and all other relevant inputs under the same conditions and of the same quality as it provides as an input into its retail offering, or those of its subsidiaries or partners. Without prejudice to the generality of the foregoing, the obligation applies to infrastructure, associated facilities, delivery and assurance processes, supporting IT systems, product development processes, performance metrics and any other resource used by Eircom as an input in the supply of its retail offering, or those of its subsidiaries or partners.

- 2.34 Eircom shall grant all necessary access in a timely manner to technical interfaces, protocols, or other key technologies and should be required to provide such Operational Support Systems ('OSS') or similar software systems necessary to allow OAOs to efficiently order the product and manage all aspects of the product life cycle, and for the provision of related information in order to ensure fair competition in the provision of services as part of its Access obligation. OSS or similar interface access should be of a standard such that an undertaking availing of this functionality experiences the same standard and quality of service in terms of access to information, ability to input data, time taken to process requests, quality and completeness of output, and ease of use as Eircom retail or its partners and subsidiaries.
- 2.35 Eircom shall have an obligation to provide any relevant information and documentation on Operational Support Systems ('OSS') or similar software systems to undertakings and ComReg in a timely manner and to the same quality as it provides as an input into its retail offering, or to its subsidiaries or partners.

### *Transparency*

- 2.36 A transparency obligation shall be imposed on the SMP operator.
- 2.37 The implementation of the transparency obligation will include a requirement to publish and keep updated an Access Reference Offer (ARO) for all products in the WPNIA market, and to publish additional industry documentation as required. The ARO shall be sufficiently unbundled so as to ensure that other undertakings availing of such facilities are not required to pay for facilities which are not necessary for the service requested and the ARO shall include:
- (i) A description of the relevant offerings broken down into components according to market needs; and
  - (ii) A description of the associated terms and conditions, including prices.
- 2.38 The ARO shall contain at least the elements set out in the Schedule to the Access Regulations.<sup>8</sup>
- 2.39 Eircom shall publish at least two months in advance any proposed changes to the ARO and any proposed changes to wholesale prices and the application of such prices on its website for the purpose of notifying all interested parties of such changes. Eircom shall notify ComReg at least one month in advance of any such publication taking place. This period of one month may be varied from time to time with the agreement of ComReg.
- 2.40 ComReg may issue Directions to Eircom from time to time requiring it to publish specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices. As provided for by Regulation 10 (5) of the Access Regulations, ComReg may issue

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<sup>8</sup> Schedule to the Access Regulations entitled: Minimum list of terms to be included in a reference offer for unbundled access to the twisted metallic pair local loop to be published by notified operators.

Directions requiring Eircom to make changes to the ARO to give effect to obligations imposed in this Decision Instrument and to publish the ARO with such changes.

- 2.41 Eircom shall publish industry SLAs and any updates on its wholesale website.
- 2.42 The transparency obligation will apply to the publication of performance metrics regarding Eircom's delivery of services encompassed by this market and comparable services underlying Eircom's retail offering, or those of its subsidiaries or partners such that a meaningful comparison can be made between these sets of metrics. The metrics to be published will be as directed by ComReg.
- 2.43 Eircom shall be obliged to meet Key Performance Indicators (KPIs) defined by ComReg in consultation with industry. These KPIs will be published by Eircom and Eircom should be obliged to meet the service levels specified in those indicators. The implementation of this obligation will be subject to further consultation.
- 2.44 Eircom shall be obliged to develop and publish an IRO within 3 months of the date of publication of the final Decision Notice on this WPNIA review. This will then be subject to consultation before the final IRO is published.
- 2.45 Eircom shall be obliged to provide undertaking(s) with information, document(s), which they may reasonably require in order to be able to efficiently offer products and services in the market in a timely manner, based on Eircom's wholesale inputs. This shall include the provision on a timely basis of NGN plans.
- 2.46 Eircom shall be obliged to provide, on foot of a reasonable request from an undertaking or undertakings, appropriate performance metrics either requested over a short period to address a particular performance related issue or over an extended period in order to carry out trend analysis.
- 2.47 Where an access request is refused or not fully met, Eircom shall provide the reasoning for refusing access to both the undertaking requesting access and to ComReg.

*Non-discrimination*

- 2.48 The remedy of non-discrimination shall be imposed on Eircom. Eircom shall ensure that access provided to WPNIA services, associated facilities, information and all other relevant inputs shall be provided under the same conditions, of the same quality, and in the same timescales as it provides its own retail operation, or those of its subsidiaries or partners. Without prejudice to the generality of the foregoing, the obligation applies to infrastructure, associated facilities, delivery and assurance processes, supporting IT systems, product development processes, performance metrics and any other resource used by Eircom as an input in the supply of its retail offering or those of its subsidiaries or partners.
- 2.49 During the lifetime of this review, where Eircom has an obligation to offer certain wholesale products, services or associated facilities which have not yet been made available at the date of any Decision made on foot of this review, it may not offer these or functionally similar products, services or associated facilities to its retail arm until such time as wholesale elements are made available to OAOs.

*Price Control and Cost Accounting*

- 2.50 Eircom shall be obliged to ensure that the relationship between its wholesale and retail pricing, and between its wholesale products, does not constitute a price squeeze.
- 2.51 Eircom shall be obliged to offer WPNIA services at prices which are cost-oriented.
- 2.52 Eircom shall be obliged to maintain the current price control pending the outcome of further consultation
- 2.53 Cost accounting system obligations on Eircom will be continued until the detailed implementation consultations are complete.

*Accounting Separation*

- 2.54 Accounting separation obligations on Eircom will be continued until the detailed implementation consultations are complete.

Conclusion

- 2.55 The remedies proposed in this market review are based on the nature of the competition problems identified and are proportionate and justified in light of the objectives contained in the Communications Regulation Act, 2002 and under the Access Regulations<sup>9</sup>. The various relevant Ministerial Policy Directions were complied with<sup>10</sup>. The proposed remedies aim to address potential market failures, to protect consumers against the exercise of market power and to promote competition.
- 2.56 This Response to Consultation includes a Draft Decision Instrument, which is subject to further consultation.

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<sup>9</sup> S.I. No. 305 of 2003 the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003 ("Access Regulations") which transposes Directive 2002/19/EC of the European Parliament and the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities.

<sup>10</sup> Policy Directions made by Dermot Ahern T.D. (the then) Minister for Communications, Marine and Natural Resources on 21 February, 2003 and 26 March, 2004. Especially (but not limited to) Directions 5, 6 and 7.

### 3 Introduction

- 3.1 This Response to Consultation and Draft Decision Instrument is published in fulfilment of the Commission for Communications Regulation's (ComReg's) role as the body responsible for the regulation of the electronic communications sector in Ireland. The paper relates to a review being undertaken by ComReg of the Wholesale Physical Network Infrastructure Access (WPNIA) market.
- 3.2 ComReg published its preliminary analysis of the WPNIA market on 11 June 2008<sup>11</sup>. The preliminary analysis opened a public consultation. This current document has considered in detail all responses to the preliminary analysis, and represents ComReg's conclusions on the market analysis. The structure of this paper reflects the market analysis approach recommended by the European Commission. It begins by defining the relevant market, then analyses competition within the market. It proposes to find Significant Market Power (SMP). It assesses competition problems on the market and examines regulatory options and their impacts. It then considers appropriate regulatory remedies to be imposed on the SMP operator.

#### The Regulatory Framework

- 3.3 The market review is being undertaken by ComReg in accordance with the European Commission Recommendation<sup>12</sup> that National Regulatory Authorities (NRAs) should analyse the wholesale market for physical network infrastructure access<sup>13</sup>. It is the EC's view that barriers to entry into this market remain high and non-transitory, that there is no tendency towards effective competition behind the barriers to entry, and that competition law would be insufficient to address market failure.<sup>14</sup> Accordingly, the European Commission has identified the WPNIA market, as described below in Section 3, as being a market in which *ex ante* regulation may be warranted.

#### Legal Basis

- 3.4 Regulation 26 of the Framework Regulations<sup>15</sup> requires that ComReg, taking utmost account of the Recommendation<sup>16</sup> and of the EC's Guidelines on Market

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<sup>11</sup> ComReg 08/41 Market Analysis : Wholesale Unbundled Access. ComReg has amended the name of the market to better reflect its technology neutral approach

<sup>12</sup> European Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services OJ L 344,

<sup>13</sup> *ibid*

<sup>14</sup> *ibid* Paragraph 4.2.2

<sup>15</sup> The European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 (S.I. No. 307 of 2003), ('the Framework Regulations');

<sup>16</sup> European Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (second edition) notified under document number C(2007) 5406 (Text with EEA relevance) (2007/879/EC) (OJ L 344, 28.12.2007, p. 65–69)

Analysis and Significant Market Power<sup>17</sup> (SMP Guidelines), defines relevant markets appropriate to national circumstances, in accordance with the market definition procedure outlined in Regulation 26 of the Framework Regulations.

3.5 In its updated Recommendation, the European Commission recently revised its recommendation on the relevant market (formerly market 11) as follows:<sup>18</sup>

*Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location.*

3.6 This revised market definition has moved away from the European Commission's previous definition of the Wholesale Unbundled Access (WUA) market, which referred specifically to metallic loops and sub-loops, in favour of a broader technology-neutral definition. The revised definition takes into account the potential impact of Next Generation Network (NGN) deployment, which may result in Other Authorised Operators (OAOs) requiring access to non-metallic physical elements of a network in order to reach retail customers. The revised definition allows for the inclusion of non-metallic elements of the physical network infrastructure (such as fibre or duct access) in the relevant market.

3.7 Regulation 27 of the Framework Regulations requires ComReg to conduct an analysis of the relevant markets to decide whether they are effectively competitive. Pursuant to Regulation 25 in conjunction with Regulation 27(4), where ComReg concludes that the relevant market is not effectively competitive (i.e., where there is an undertaking with SMP), ComReg must identify the undertakings with SMP in that market and impose on such undertakings such specific regulatory obligations as it considers appropriate.

3.8 Where an operator is designated as having SMP in a relevant market ComReg is obliged, under Regulation 9(1) of the Access Regulations, to impose on such an operator one or more some of the obligations or remedies set out in Regulations 10 to 14 of the Access Regulations. Regulation 14 of the Universal Service Regulations<sup>19</sup> also allows ComReg, where it concludes that obligations imposed under the Access Regulations and/or Regulation 16 of the Universal Service Regulations would not result in the achievement of the objectives set out in section 12 of the Communications Regulation Act, 2002, to impose such obligations as it considers appropriate to achieve those objectives.<sup>20</sup>

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<sup>17</sup> European Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services, (2002/C

165/03).

<sup>18</sup> European Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (second edition) notified under document number C(2007) 5406 (Text with EEA relevance) (2007/879/EC) (OJ L 344, 28.12.2007, p. 65–69)

<sup>19</sup> Which transposes Article 17 of the Universal Service Directive into national law.

<sup>20</sup> The SMP Guidelines state at paragraph 17 that "NRAs must impose at least one regulatory obligation on an undertaking that has been designated as having SMP".

3.9 In preparing this paper, ComReg has taken account of its functions under the Framework Regulations and the Access Regulations.<sup>21</sup> ComReg has taken the utmost account of the European Commission's Recommendation and its Explanatory Memorandum on relevant product and service markets within the electronic communications sector<sup>22</sup> ('the Recommendation' and 'the Explanatory Memorandum') as well as the SMP Guidelines. It has also had regard to sections 10<sup>23</sup>, 12<sup>24</sup> and 13<sup>25</sup> of the Communications Regulation Act 2002.

### **Background to Wholesale Physical Network Infrastructure Access market review**

3.10 The market is concerned with a physical wholesale input used in the provision of a range of retail products, which are used by consumers to access the internet, for voice telephony, and potentially for television services. The focus of this review is on wholesale physical network infrastructure access as an upstream input to retail internet services. Competition in the retail broadband market plays an important role in enhancing the speeds, prices, and availability of retail broadband products. Competition in the retail market depends on the ability of Internet Service Providers (ISPs) to secure a transmission channel to end-users. ComReg therefore considers that competition in the wholesale physical network infrastructure access market will assist in driving the development and growth of the retail broadband market.

#### Previous Review

3.11 On 11 December 2003 ComReg published a national consultation on **Wholesale Unbundled Access** (including shared access) to metallic loops and sub-loops.<sup>26</sup> The response to consultation and draft decision were notified to the European Commission and published on 16 April 2004<sup>27</sup>. The Decision Notice was published on 15 June 2004<sup>28</sup>

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<sup>21</sup> European Communities (Electronic Communications) Access Regulations 2003 (S.I. No. 305 of 2003) ('the Access Regulations')

<sup>22</sup> European Commission Recommendation on relevant product and service markets, Commission for European Communities, 17 December 2007.

<sup>23</sup> Section 10 sets out the functions of ComReg under the Communications Regulation Act, 2002

<sup>24</sup> Section 12 sets out the objectives of ComReg as defined by the 2002 Act. 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:

(i) promote competition;

(ii) contribute to the development of the internal market; and

(iii) promote the interests of users within the European Union

<sup>25</sup> Section 13 of the 2002 Act requires that ComReg comply with relevant Ministerial Policy Directions made by Dermot Ahern T.D. Minister for Communications, Marine and Natural Resources on 21 February, 2003 and 26 March, 2004

<sup>26</sup> ComReg 03/146

<sup>27</sup> ComReg 04/40

<sup>28</sup> D8/04 ComReg 04/70



3.12 The notified Wholesale Unbundled Access (WUA) market included the following products:

- Fully unbundled local metallic path (ULMP)
- Shared loops (line sharing)
- Fully unbundled sub-loops
- Shared sub-loops
- Co-location
- Associated facilities

3.13 ComReg proposed in 2004 that WUA and wholesale broadband access (WBA) were distinct product markets, due to differences in functionality and pricing. An operator using unbundled local loops (LLU) would not normally consider WBA to be a substitute, even if the service provided by the WBA provider allowed the supply of the same retail services. This is because an operator that has invested in LLU would have sunk costs. Equally, ComReg considered an operator using WBA to offer retail broadband could not easily switch to using unbundled local loops in response to a small yet significant non-transitory price increase because of the level of investment and time involved<sup>29</sup>.

3.14 The original review also proposed that access via alternative technologies such as Fixed Wireless Access (FWA) and cable were unlikely to pose a competitive constraint in the lifetime of the review. Eircom had 100% share of the WUA market, and the market analysis concluded that this was unlikely to change over the lifetime of the review. Eircom was designated with SMP.

3.15 ComReg imposed a full suite of remedies under the Access Regulations in relation to access, transparency, non-discrimination, price controls, accounting separation and cost accounting. Since the publication of the Decision Notice in June 2004, ComReg has been heavily involved in this market, and has been engaged in further consultation<sup>30</sup> and industry discussion. Work has continued on the implementation of WUA remedies established following the last market review. In common with other markets, ComReg carries out periodic reviews of price controls. A review of the methodology associated with the unbundled access price controls is currently being undertaken by ComReg.

#### Current review

3.16 Because of the time that has elapsed since ComReg's previous WUA market analysis, ComReg decided to undertake a new review of the market for WPNIA. This review is conducted in light of the EC's recent review of the WPNIA market definition.

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<sup>29</sup> WUA is upstream from WBA (ladder investment)

<sup>30</sup> For example, on line share ComReg 04/111 and ComReg 05/22; and Consultation on the Rental price for Shared Access to the Unbundled Local Loop (ComReg Document Number 08/23).

- 3.17 As part of this current review, ComReg obtained qualitative and quantitative information from relevant operators through a data direction issued to operators on 30 November 2007, and through a series of meetings with operators. This material supplements information which is provided to ComReg in the course of the performance of its regular operations.
- 3.18 Following the publication of the preliminary analysis in June 2008, and having considered the responses to the public consultation, ComReg issued a further data direction to operators in September 2008. ComReg has carefully analysed all this information before arriving at its view in this document.
- 3.19 ComReg has consulted with the Competition Authority in relation to its findings on the WPNIA market, further to Regulation 27(1) of the Framework Regulations<sup>31</sup>.
- 3.20 Annex A of this Response to Consultation contains ComReg's Draft Decision Instrument. ComReg welcomes comment on this Draft Decision Instrument, and indeed on any of the issues raised in this document. The consultation period on the Draft Decision Instrument will remain open until 13 February 2009.

### **Structure of Consultation Document**

3.21 This document is structured as follows:

Section 1: Executive Summary

Section 2: Introduction

Section 3: Market Definition

Section 4: Competition and SMP Analysis

Section 5: SMP Designation

Section 6: Competition problems

Section 7: Regulatory Impact Assessment

Section 8: Remedies

Annex A: Draft Decision Instrument

Annex B: Consultation Questions

Annex C: Glossary

**Q. 1. Do you have any comments on the Draft Decision Instrument? If so, please provide a written response.**

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<sup>31</sup> SI 307, 2003

**Q. 2. Do you have any other comments in relation to this document? If so,  
please provide a written response.**

## 4 Market Definition

- 4.1 The purpose of market definition is to identify the competitive constraints that undertakings face. The market definition is not an end in itself but rather is a means of assessing effective competition for the purpose of determining whether *ex ante* regulation is required. This involves assessing demand and supply for other products, which could be considered to be substitutes for wholesale network infrastructure access.
- 4.2 ComReg takes the utmost account of guidance given by the European Commission (EC)<sup>32</sup> in defining relevant markets. Such guidance is set out in its Explanatory Memorandum on relevant product and service markets within the electronic communications sector<sup>33</sup> (“the Recommendation” and “the Explanatory Note”), the EC’s Notice on Market Definition<sup>34</sup>, the EC’s Guidelines on Market Analysis and Significant Market Power<sup>35</sup> (“the SMP Guidelines”). ComReg also considers guidance given by any relevant competition case law or decisions.
- 4.3 The definition of the relevant market is established by the combination of the relevant product and geographic dimensions. The process of defining these dimensions is outlined below. The market definition and analysis considers both current market conditions and any potential developments that may take place over the next two to three years.

### **The European Commission recommendation on market 4 (formerly market 11)**

- 4.4 In the Consultation, ComReg stated that the starting point for the product market definition is the market identified by the EC as being susceptible to *ex ante* regulation.<sup>36</sup>
- 4.5 In accordance with the EC Recommendation on Relevant Markets<sup>37</sup>, ComReg proposes to define and analyse the market for:

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<sup>32</sup> Paragraph 17 of the Commission’s Notice on Market Definition states - “The question to be asked is whether the parties’ customers would switch to readily available substitutes or to suppliers located elsewhere in response to a hypothetical small (in the range of 5% to 10%) but permanent relative price increase in the products and areas being considered. If substitution were enough to make the price increase unprofitable because of the resulting loss of sales, additional substitutes and areas are included in the relevant market”.

<sup>33</sup> Commission Recommendation on relevant product and service markets, Commission of the European Communities, 17 December 2007.

<sup>34</sup> European Commission, Notice on the Definition of the Relevant Market for the Purposes of Community Competition Law, OJ [1997] C372/5.

<sup>35</sup> European Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services, (2002/C 165/03).

<sup>36</sup> Regulation 26 of the Framework Regulations specifically states: “As soon as possible after the adoption by the European Commission of a recommendation referred to in Article 15(1) of the Framework Directive, the Regulator shall... define relevant markets for the purposes of these Regulations and the Specific Regulations, including the geographical area within the State of such markets”.

<sup>37</sup> Commission Recommendation on relevant product and service markets, Commission of the European Communities, 17 December 2007

*Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location.*

- 4.6 The EC recommends *ex ante* regulation on the basis that in the absence of wholesale regulation at this level, competition problems are likely to prevail in this market, leading to associated competition problems in downstream markets such as the retail broadband market. *Ex ante* regulation in this market is ultimately intended to encourage efficient infrastructure based competition (traditionally this has occurred through LLU), which then leads to more competitive downstream markets - in particular the retail broadband market.
- 4.7 The definition of the market has been revised since the time of the last review to take into account changes in the market, in particular technological changes. Previously the market was referred to as the WUA market, and was defined in terms of access to metallic loops and sub-loops. The new definition focuses clearly on the problem being addressed; namely the need to ensure that competition problems do not impede the connection of end-user premises to the wider communications networks, regardless of the technology currently in use. This technologically neutral product description is sufficiently broad that it may include network elements such as ducts and fibre within the market.

#### Views of respondents

- 4.8 In the consultation paper D08/41, ComReg requested feedback from interested parties on whether the relevant product market is that for wholesale unbundled access, as defined above. One respondent proposed that the market under consideration should now be defined as “wholesale network infrastructure access” (WNIA) in recognition of the EC’s recommendation. The respondent’s view is that WUA is self-defined as “unbundled” access only, whereas WNIA would encompass the possibility of other forms of wholesale physical infrastructure access.

#### ComReg’s views and analysis

- 4.9 ComReg considers that it is desirable that the name of the market better reflects the analysis which was carried out in the original Consultation<sup>38</sup>, and will therefore call the market Wholesale Physical Network Infrastructure Access (WPNIA). This follows from ComReg’s technology neutral approach, and incorporates all of the European Commission’s terminology in the market name. The issue here is one of labelling and not of substance. It is ComReg’s view that the actual analysis which was carried out in the review considered a market which was broader than would be suggested using the WUA terminology, and that the alternative name better reflects the defined market. The emphasis is clearly on physical as opposed to virtual access.
- 4.10 ComReg’s proposal to identify the WPNIA market as the relevant market, and its determination of the scope of the market, is consistent with the European Commission’s Recommendation of 17 December 2007, and with the EC’s Explanatory Note of 13 November 2007. National regulators are required to

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<sup>38</sup> ComReg 08/41

follow this approach, and the requirement on ComReg to adopt the EC's definition in the Recommendation is clearly expressed as follows:

*...in defining relevant markets appropriate to national circumstances... national regulatory authorities should analyse the product and service markets identified in the Annex"[Article1]*

- 4.11 As the Explanatory Note describes, the Recommendation serves an important role in achieving the EC's objective of ensuring harmonisation across the single market and guaranteeing legal certainty. The European Commission seeks to ensure that, unless national circumstances justify departure from its recommended approach, the same product and service markets will be subject to a market analysis in all Member States<sup>39</sup>. It is ComReg's view that national circumstances do not justify departure from the European Commission's approach, and that the arguments made by one respondent against the adoption of the European standard for market definition are not of sufficient strength to justify such a radical move.
- 4.12 At present, WPNIA is typically provided by unbundled local loops (LLU), using a twisted metallic pair, i.e. a local loop connection. This runs from the network termination point at an end-user's premises to a main distribution frame (MDF) at an MDF site, or equivalent facility. An individual loop is connected to an operator's equipment, such as a Digital Subscriber Line Access Multiplexer (DSLAM) or concentrator equipment, within the MDF site, using flexible jumpers and tie cables. The LLU product would therefore include the loop, jumpers and tie cables, together with any supplementary services associated with providing the connection (for example, backhaul between cabinet or exchange based equipment (co-location point) and the OAO's required handover point).
- 4.13 ComReg noted in the Consultation that it is possible to use different means of connecting the end-user premises to the communications network, and it is possible that there may be further changes over the lifetime of this review. For example, the local loop need not necessarily be provided over a twisted metallic pair, as the connection to the end-user could be provided over, for example, fibre or wireless. By adopting a technology neutral approach, it is ComReg's view that the focus of this review should be on addressing potential competition problems in the local access connection, irrespective of what technologies may be used to provide that connection. This means that, while the product description will use the current provision as an illustration, the products covered in this review are not limited to the current technology. Rather, the products are all of those which are necessary to ensure wholesale physical network infrastructure access at a fixed location.

### **General approach to market definition**

- 4.14 In line with the Recommendation and SMP Guidelines, ComReg takes the recommended set of products/services to form the starting point of its relevant product market analysis. It then considers whether, from a demand and supply side perspective, the market should be expanded or narrowed.
- 4.15 The analysis of demand-side considerations involves an assessment of all those products or services that are viewed as sufficiently close substitutes by consumers

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<sup>39</sup> Page 4, Explanatory Note

to be included within the same relevant product market. For two products to be effective demand side substitutes, it is not necessary that all consumers switch to a competing product, but that enough switching takes place to render a relative price increase unprofitable<sup>40</sup>. In some cases the **Small but Significant Non-transitory Increase in Price** (“SSNIP”) test provides a useful conceptual framework within which to identify the existence of close demand substitutes<sup>41</sup>. However, ComReg notes that the SSNIP test is not specifically designed to give a clear-cut result, but instead acts as a helpful heuristic tool that in some instances assists decision-making along with other relevant factors. Therefore, the SSNIP test may not always be necessary or useful. It allows the identification of the main price constraints on the product in question.

- 4.16 In carrying out the SSNIP test, the point at which a market should be expanded to include additional products/services is where a hypothetical monopolist of the goods/services in question would not be able to sustain a small but significant (5-10%) price increase above the competitive level because enough customers would switch to alternative products/services so as to render that price increase unprofitable. Where the price of a service is regulated, it is important to consider how the price relates to a competitive price, as if it is significantly different, the findings of the SSNIP may be misleading. If it is not possible for the hypothetical monopolist to profitably sustain a 5-10% price increase, this implies that suppliers of other products/services impose important competitive constraints and should be included as part of the relevant market.
- 4.17 The SSNIP test is also considered from the supply side perspective as a means to establish whether suppliers are able to switch production to the relevant products or services and market them in the short term in response to a small yet significant increase in the price of those products. For the products of a firm to be regarded as effective supply-side substitutes, it is not only necessary for the production, marketing and distribution of the relevant products to be possible without the need for significant new investments; it must also be possible within a reasonable timeframe.<sup>42</sup> Accordingly, ComReg considers any possible costs, risks or time delays associated with suppliers switching between supplying the products under consideration and whether they are likely to do so in practice.
- 4.18 The EC notes that supply-side substitutability may also be taken into account where.<sup>43</sup>

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<sup>40</sup> European Commission Guidelines on market analysis and the assessment of significant market power under the Community Regulatory Framework for electronic communications networks and services 2002/C 165/03 11 July 2002

<sup>41</sup> Paragraph 17 of the Commission’s Notice on Market Definition (Official Journal C 372) states - *“The question to be asked is whether the parties’ customers would switch to readily available substitutes or to suppliers located elsewhere in response to a hypothetical small (in the range of 5% to 10%) but permanent relative price increase in the products and areas being considered. If substitution were enough to make the price increase unprofitable because of the resulting loss of sales, additional substitutes and areas are included in the relevant market”*.

<sup>42</sup> According to competition law principles, only short-term entry (i.e. less than one year) is taken into account for the purpose of market definition, explanatory note, page 12

<sup>43</sup> European Commission Recommendation on relevant product and service markets, Commission for European Communities, 17 December 2007, Paragraph 20.

*Its effects are equivalent to those of demand substitution in terms of effectiveness and immediacy.*

And where:

*Suppliers are able to switch production to the relevant products and market them in the short term without incurring significant additional costs or risks in response to small and permanent changes in relative prices.*

- 4.19 Once the relevant product market is identified, the next step in defining the market is concerned with the geographical dimension. ComReg has approached the definition of the relevant geographic market by identifying “*a clearly defined geographic area in which [the product] is marketed and where the conditions are sufficiently homogeneous for the effect of the economic power of the undertaking concerned to be able to be evaluated*”<sup>44</sup> and “*which can be distinguished from neighbouring areas because the conditions of competition are appreciably different in those areas*”<sup>45</sup>.
- 4.20 In that regard, ComReg has considered whether a small price increase by a hypothetical monopolist in a narrowly defined area would induce customers to switch to suppliers located outside the relevant area or if providers located elsewhere could easily switch to supplying customers in the relevant area.
- 4.21 The EC’s notice on Market Definition<sup>46</sup> further outlines the its approach to geographic market definition where it states that the EC “*will take a preliminary view of the scope of the geographic market on the basis of broad indications as to the distribution of market shares between the parties and their competitors, as well as a preliminary analysis of pricing and price differences at national and Community or EEA level*”<sup>47</sup>.

#### Relationship between the WPNIA market and retail internet markets

- 4.22 ComReg’s ultimate concern in analysing the WPNIA market is to provide choice and competitive prices for consumers of retail broadband (although WPNIA can be used to provide a range of retail products). The WPNIA market and the retail broadband market are intrinsically linked since demand for WPNIA is ultimately derived from demand for downstream retail products such as retail broadband.
- 4.23 At present, customers can access retail internet services at a fixed location or using a mobile connection. Fixed access can be achieved using a number of different technologies (depending on that customer’s location), which will to a varying degree each offer a different user experience. These technologies include, for example, fixed line networks such as DSL or cable modem, a Fixed Wireless

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<sup>44</sup> Case 27/76 United Brands v. European Commission, [1978] ECR 207, [1987] 1 CMLR 429, paras 10 and 11

<sup>45</sup> European Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03), Paragraph 8.

<sup>46</sup> European Commission Notice on the definition of relevant market for the purposes of Community competition law (97/C 372/03), paragraphs 28-31.

<sup>47</sup> The EC’s notice on Market Definition further outlines that it will also need to be established whether companies in different areas constitute an alternative source of supply for customers and whether companies located in different areas would face impediments to developing their sales on competitive terms throughout the whole geographic market.



link, a leased line, or a data-card or modem connected to a mobile broadband provider.

- 4.24 Consumer behaviour in the retail market (e.g. willingness of consumers to switch between technologies) will strongly influence the commercial decisions of broadband providers when considering how best to provide retail broadband. For this reason, the substitutability of different technology platforms in the WPNIA market is linked to consumer behaviour in the retail market. Observing retail market trends and consumer behaviour in relevant downstream retail markets therefore informs, but does not necessarily determine, the definition of a wholesale physical network infrastructure access market. ComReg is mindful also that it must take utmost account of the EC Recommendations, which define the wholesale physical network infrastructure market as being susceptible to *ex ante* regulation.
- 4.25 ComReg notes that the analysis of the retail broadband market is not required in order to justify *ex ante* regulation in the WPNIA market, since the market has already been identified by the EC as being susceptible to *ex ante* regulation. This means that ComReg does not have to consider whether or not the market for WPNIA should be susceptible to *ex ante* regulation, as that analysis has already been carried out by the European Commission. The discussion of the retail market is intended to inform the analysis of the WPNIA market through exploring the dynamics of the downstream market.
- 4.26 The first steps involved in analysing the WPNIA market are to review trends in the provision of retail internet services, and then to describe and define the retail market for access to retail broadband.<sup>48</sup>

## Review of retail internet trends

### Overview

- 4.27 The Consultation reviewed recent trends observed by ComReg in retail internet provision. This provides a useful context for a review of the WPNIA market, since demand for WPNIA is ultimately derived from demand for retail broadband products. The review is informed by general industry analysis undertaken by ComReg, and draws on information contained in ComReg's Quarterly Report. It should be noted that this general discussion of internet trends considers a wide range of internet services, not all of which may be considered substitutes in the context of the market analysis. The assessment of trends in retail internet provision has been updated in preparing this Response to Consultation.
- 4.28 The diagram below illustrates the share of broadband subscribers split between Eircom and Other Authorised Operators (OAOs). At the end of the third quarter of 2008, Eircom DSL products made up approximately 39% of all broadband subscriptions. Eircom's share of broadband subscriptions has been steadily declining over the last two years.<sup>49</sup> Whilst the share of DSL retailed by OAOs has

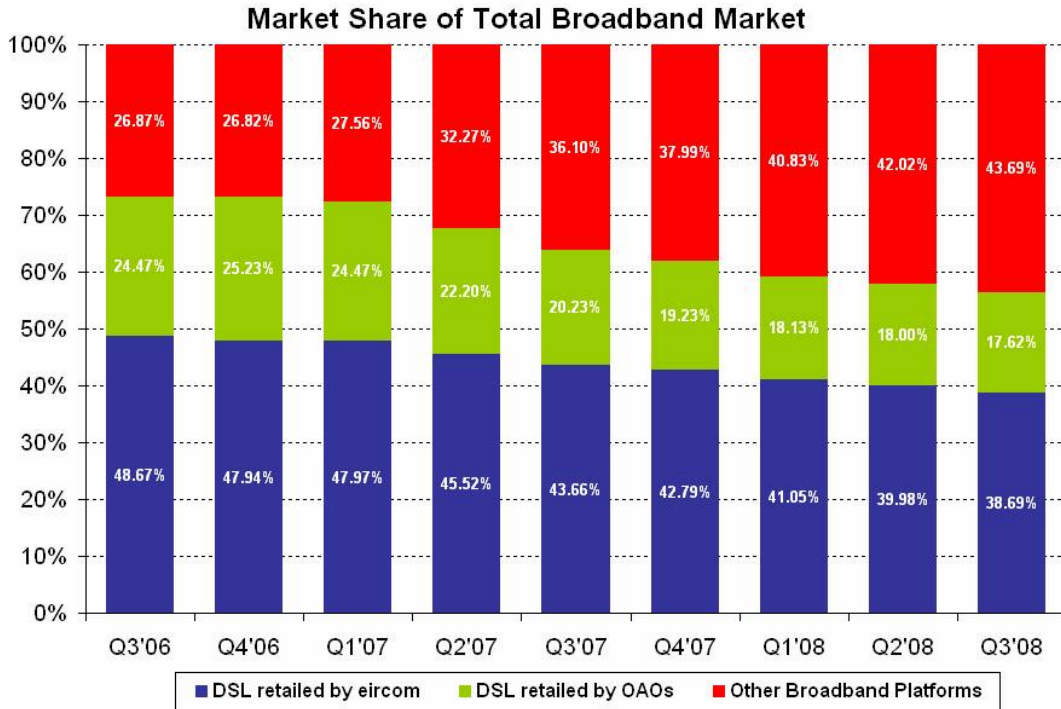
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<sup>48</sup> Note that because the retail market is not considered to be susceptible to *ex ante* regulation, ComReg is not required to carry out a formal market analysis.

<sup>49</sup> It should be noted that data on mobile broadband has been included in this figure only since Q2 2007.

fallen slightly; the share of other broadband platforms has increased from 27% to 44% of total broadband subscriptions over the 2 year period ending in the third quarter of 2008.

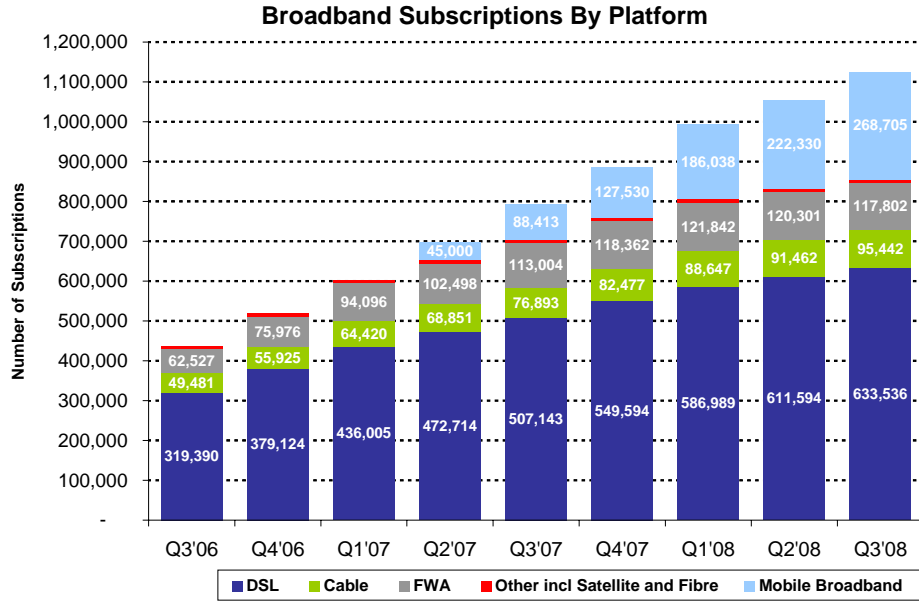
**Share of broadband subscriptions by technology platform<sup>50</sup>**



Source: Quarterly Key Data Questionnaire

4.29 Broadband is available over various technology platforms. However, as is demonstrated by the following graph, over the past two years DSL has consistently been the predominant technology. While the absolute number of DSL subscriptions is increasing, the share of total broadband subscribers using DSL is decreasing. This is largely due to the recent launch and significant growth of mobile broadband. Similarly, the number of cable subscribers has increased steadily in the past 24 months, such that it has almost doubled over that period. FWA has also grown steadily, and at a similar rate, over the past 24 months, although FWA subscriber numbers have fallen slightly in the last quarter (the first time this has occurred over that period). Broadband provided via Fibre to the Home (FTTH) and satellite networks remain at low levels of uptake.

<sup>50</sup> Irish Communications Market Quarterly Key Data Report – December 2008, Commission for Communications Regulation

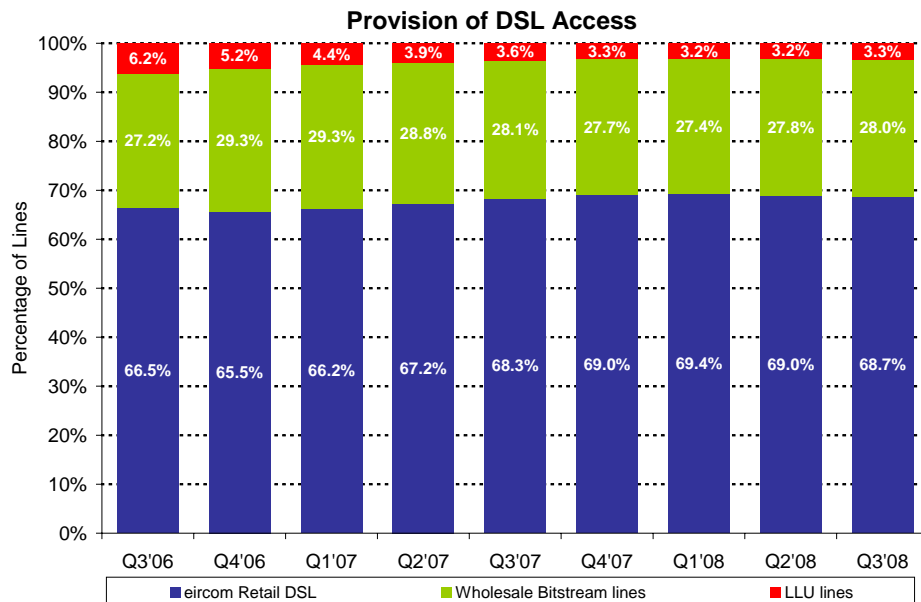


4.30 The following section considers the trends for each technology platform:

DSL

4.31 At the end of the third quarter of 2008 there were 633,536 subscribers to DSL broadband. DSL remains the largest broadband access platform in terms of subscriptions, accounting for 56% of all broadband subscriptions at the end of the third quarter of 2008.

4.32 Eircom provides retail services directly to customers over its DSL network, and to wholesale customers in the form of bitstream, unbundled local loops and shared access to lines. Those wholesale customers can then use the wholesale input as a means of providing retail internet services. The following graph illustrates the split of DSL retail subscriptions between Eircom, LLU based subscriptions, and those DSL subscriptions provided using a bitstream service.



4.33 Eircom's share of the DSL market has remained fairly stable at approximately 69% over the last year. This compares with an EU average incumbent share of retail DSL of 56.1% in July 2007.<sup>51</sup>

4.34 BT, Smart, Access Telecom, and Magnet are the other major DSL operators. In addition to these larger OAOs, there are a number of other smaller operators providing broadband access via DSL. Examples of unbundled operation include Magnet, which has unbundled 39 exchanges to date in Dublin, Cork, Limerick, Galway, Waterford and Portlaoise<sup>52</sup> and BT, which is offering a product with a download speed of 24 Mega-bits per second (Mbps) out of 22 exchanges.<sup>53</sup> Smart has a full next generation network and uses 37 unbundled exchanges in key population centres to provide triple play offers with a download speed of 4 Mbps.<sup>54</sup>

#### Cable

4.35 At the end of the third quarter of 2008, there were 95,442 subscribers to cable broadband. This amounts to 8.5% of all broadband subscriptions.

4.36 Of the cable operators, NTL and Chorus are part of UPC Ireland, and have complementary rather than overlapping coverage areas. In addition, there are a few small geographically-specific operators. These cable networks were initially designed to provide television services, but some parts of the network have been upgraded to also provide broadband. Therefore, while the cable footprint covers

<sup>51</sup> Based on a report by the European Commission in October 2007 titled 'Broadband access in the EU: Situation at 1 July 2007', available at:

[http://ec.europa.eu/information\\_society/policy/ecomms/doc/implementation\\_enforcement/broadband\\_access/Broadband\\_data\\_july07\\_final.pdf](http://ec.europa.eu/information_society/policy/ecomms/doc/implementation_enforcement/broadband_access/Broadband_data_july07_final.pdf)

<sup>52</sup> <http://www.magnetbusiness.ie/about/index.htm>

<sup>53</sup> [http://www.btireland.ie/AtHome\\_bb\\_8mb.shtml](http://www.btireland.ie/AtHome_bb_8mb.shtml)

<sup>54</sup> [http://smarttelecom.ie/smartngn\\_coverage.html](http://smarttelecom.ie/smartngn_coverage.html)

more than 850,000 households, only part of that network is capable of being used to provide telephony and/or internet access. At present, cable broadband networks reach approximately 450,000 households in Ireland.

#### Fixed Wireless Access (FWA)

- 4.37 At the end of the third quarter of 2008 there were 117,802 FWA broadband subscribers, which amounts to 10.5% of all broadband subscribers.
- 4.38 ComReg has issued 207 FWALA licences to 15 different operators in the 3.5 GHz, 10.5 GHz and 26 GHz bands. The coverage of FWALA is large in terms of territory, and also in terms of population (fixed wireless broadband is available in all major metropolitan areas).
- 4.39 There are also a number of FWA operators providing retail broadband over unlicensed networks. FWA operators have mainly deployed their networks in dense urban areas, indicating that they are directly competing with wired infrastructures<sup>55</sup>, or filling the gaps not served by wired infrastructure e.g. splitters on line.
- 4.40 Recent and upcoming developments in the technology used to provide broadband over FWA, in particular the development of WiMAX, are expected to enhance the ability of FWA operators to compete with DSL and cable operators. For example, the price of WiMAX customer premises equipment is expected to fall significantly within the period of this review. The development of the WiMAX standard will offer higher data throughputs and increased functionality (such as mobility).

#### Mobile

- 4.41 Mobile broadband access via High Speed Downlink Packet Access (HSDPA) has been available in Ireland since the beginning of 2007. By the third quarter of 2008 there were 268,705 mobile broadband subscriptions, which (if included in the broadband market share figures) amounted to 24% of the market<sup>56</sup>.
- 4.42 All current 3G network operators (O2, Hutchison 3G, and Vodafone) provide HSDPA mobile broadband access services in Ireland, with theoretical speeds of up to 3.6 or 7.2 Mbps on the downlink. ComReg anticipates the entry of Meteor as a mobile broadband provider within the period of this market review. Future developments in mobile broadband standards will provide greater data throughput. Upgrades to HSDPA can increase the downlink speed to 14.4 Mbps, while 28 Mbps is available with HSPA+ (evolution). Looking further into the future, the Long Term Evolution (LTE) standard claims that it can provide 100 Mbps downlink on a 20 MHz channel.

#### Fibre access network

- 4.43 At the end of the fourth quarter of 2007 there were 6,322 broadband subscribers served over a fibre connection. This includes a range of fibre access installations such as fibre to the home (FTTH), fibre to the curb (FTTC) and fibre to the premises (FTTP). This is equivalent to than 0.56% of total broadband subscriptions.

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<sup>55</sup> Source: ComReg Fixed Wireless Access coverage maps

<sup>56</sup> Irish Communications Market Quarterly Key Data Report - December 2008, Commission for Communications Regulation ComReg 08/101

4.44 The fibre broadband subscriptions are primarily provided by Smart Telecom and Magnet.

#### Satellite

4.45 At the end of the fourth quarter of 2007 there were approximately 3,273 subscribers to satellite broadband in Ireland. This figure represents less than 0.29% of broadband subscriptions.

4.46 There are a number of operators providing broadband via satellite, including Digiweb, Eircom, Hughes Networks, Smart Telecom and Pure Telecom.

#### **Defining a retail broadband market**

4.47 The last section outlined broad key trends in retail internet services, and described the main options available to retail customers. The Consultation then went on to consider the extent to which products may be seen as substitutes in market analysis terms. Generally, the functionality and price of each option varies, and this will affect the extent to which customers will consider products to be suitable substitutes. For example, an end-user that values high speed access would be unlikely to choose dial-up internet access, while an end-user that values mobility would prefer a mobile rather than fixed broadband connection. This means that broadband products vary in terms of functionality, and different types of broadband may not be considered by consumers to be substitutable for one another.

4.48 The starting point for defining the boundaries of a product market is to consider whether the products in question are considered by customers to be sufficiently similar such that customers are willing to substitute one product for the other (the test is described in further detail below). The willingness of a given customer to switch between different products depends on what functions are valued by customers, and to what extent the functional characteristics are similar between the products.

4.49 The importance that retail consumers place on various features is evident in the marketing strategies employed by broadband providers, through consumer complaints made to operators or to the regulator, or in consumer research.

4.50 The way in which broadband is advertised in Ireland suggests that broadband operators place significant emphasis on speed as a selling point for their broadband products. For example, broadband products are generally catalogued by speed on operator websites, and speed is typically a headline in broadband advertisements. This indicates that broadband operators recognise the importance that their potential customers place on throughput / speed. This is confirmed by research conducted by Ofcom in the UK, which found that 75% of respondents consider speed to be one of the most important features of an internet connection.<sup>57</sup>

4.51 The importance that internet users place on speed of service is also evident in the incidence of consumer complaints made to ComReg relating to dissatisfaction with speed of service.

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<sup>57</sup> Ofcom (2006) Review of the wholesale broadband access markets 2006/07: Identification of relevant markets, assessment of market power and proposed remedies, page 18

- 4.52 The research conducted by Ofcom found that 95% of residential customers cited the reliability of service as an important characteristic of an internet connection, and that 73% of those customers cited the always on connection as being important.
- 4.53 A current Eircom marketing campaign offers all customers a free wireless modem to all customers who order online.<sup>58</sup> Eircom notes on the web page that wireless connectivity *'allows up to 4 users to surf at the same time anywhere in the house'*. This campaign indicates that Eircom recognises a demand on the part of potential customers for wireless connectivity within the premises, which is likely to be used by customers to facilitate multiple device connectivity and mobility within the premises. It is therefore implied that Eircom considers that a significant portion of their target customers value these features.
- 4.54 ComReg considers that consumers of broadband value the following functional characteristics:
- Speed / throughput – ComReg considers that the speed of broadband connections is likely to be important for many users. Broadband advertising campaigns typically place significant weight on the speed of the products offered, thus suggesting that broadband providers recognise the value placed on download and upload speeds by consumers. ComReg considers that consumers will also value the ability to upgrade if their requirements change over time.
  - Variability of throughput – consistency and reliability of throughput is likely to be valued by consumers, since variability may adversely affect the user's experience of the product. It can be presumed that consumers select a speed of broadband service that suits their needs, and therefore place importance on receiving a product that can be relied upon to deliver the offered speeds on a consistent basis.
  - Latency – Latency is likely to be important for certain groups of consumers, particularly those that use online services such as Voice Over Internet Protocol (VOIP), gaming, or live online audio and video conferencing. These user groups rely on low latency products to meet their broadband needs.
- 4.55 In addition to these general functional characteristics, some features are specific to particular types of customer. For example:
- Multiple-terminal simultaneous connectivity – Fixed broadband users typically share the broadband connection with co-habitants, or colleagues in the case of businesses, and often operate more than one computer or terminal. Therefore fixed broadband customers (typically households rather than individuals) may value the ability for multiple users to connect to a connection simultaneously.

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<sup>58</sup><http://www.eircom.ie>

- Mobility: mobile broadband users value the ability to access broadband while on the move.

4.56 ComReg will assess the boundaries of the relevant product market with these functional attributes in mind.

4.57 For the purpose of this market review, the market definition exercise is conducted in accordance with an established market definition methodology that is specified in the EC's SMP Guidelines. In this regard, the conclusions in applying this methodology do not prejudice, or are not prejudiced by, analysis undertaken by ComReg for a different purpose.

Do all forms of fixed broadband access belong in the same market?

4.58 In the Consultation, ComReg proposed that retail broadband products offered over alternative forms of fixed network are sufficiently similar to DSL retail broadband products in functionality and price, such that a significant number of customers would switch in response to a small but significant price increase. This led ComReg to consider that other fixed retail broadband products are in the same market as DSL retail broadband products.

4.59 ComReg noted that this is consistent with guidance recently given by the EC, which notes that where alternative means of access are available, the functionality of fixed broadband access services are likely to be comparable, and where prices are also comparable, then a customer is likely to be indifferent to the technology used.<sup>59</sup>

4.60 The analysis put forward in the Consultation compared product specifications and pricing for retail broadband services offered by different forms of fixed access.

4.61 The analysis showed, for example, that the pricing of the cable and DSL products are similar, while the FWA products are priced on average approximately 30% higher than cable and DSL. However, DSL customers are required to purchase telephone line rental in addition to the broadband product. The perception of pricing equivalence will therefore depend to some extent on the customer's requirement for fixed line telephony. For example, customers that require a fixed telephone line may be less willing to switch away from their DSL based retail internet provider. However, other customers may consider cancelling their fixed telephone line and switching to DigiWeb's wireless broadband/voice bundle at a price that is lower than the comparable Eircom product.

*Views of respondents*

4.62 All respondents who commented on this issue agreed with ComReg's view that retail broadband products offered over alternative fixed networks should be included in the retail broadband market.

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<sup>59</sup> Commission Recommendation on relevant product and service markets, Commission for European Communities, 17 December 2007, pg 30.



*ComReg's views and analysis*

4.63 ComReg has reviewed the pricing and features of various fixed broadband products available in Ireland. The table below summarises a selection of mainstream fixed broadband products currently available:

<b>Operator</b>	<b>Product name / technology platform</b>	<b>Product speed</b>	<b>Set-up price</b>	<b>Monthly Price</b>	<b>Conditions</b>
Eircom <sup>60</sup>	Broadband Home Plus / DSL	3Mb	Free	€30.09	30Gb download limit, free wireless modem, free Setanta Online subscription.
	Broadband Home Starter / DSL	1Mb	Free	€25.09	10Gb download limit, free wireless modem, free Setanta online subscription.
UPC <sup>61</sup>	Broadband Express/ Cable	10Mb	Free	€30.00	Unlimited download, voice not included.
	Broadband Value / Cable	3Mb	Free	€20.00	20Gb download limit, voice not included.
ClearWire <sup>62</sup>	ClearPerformer / FWA	2Mb	Free	€39.95	10GB download limit, voice not included.
	ClearFreedom / FWA	1Mb	Free	€29.95	10GB download limit, voice not included.

<sup>60</sup> [www.eircom.ie](http://www.eircom.ie)

<sup>61</sup> <http://www.upc.ie/internet/>

<sup>62</sup> <http://www.clearwire.ie/Clear-Options-34.html>

Irish Broadband <sup>63</sup>	Breeze 2Mb / FWA	2Mb	€0.00	€35.99	No download limit, not including voice, requires installation of external antenna.
	Ripwave 1Mb / FWA	1Mb	€7.50	€26.95	No download limit.
	Imagine up to 3 Mb / DSL	2Mb	Free	€25.00	20Gb download limit.
	Imagine up to 1Mb / DSL	1Mb	Free	€15.00	10Gb download limit
Digiweb <sup>64</sup>	Metro Value / FWA	5 Mb	€9	€34.95	20Gb download limit applies, includes voice, requires installation of external antenna.

4.64 ComReg maintains the view that retail broadband products offered over alternative fixed networks offer a sufficiently similar customer experience to DSL retail broadband products, such that a significant number of customers would switch in response to a small but significant price increase. ComReg considers it sufficient to rely

4.65 ComReg has also considered whether retail services offered over fibre access products such as FTTH, FTTC or FTTP would form part of the same retail market. While noting that retail services offered over fibre make up a very small part of the overall retail broadband market, it is ComReg's view that the retail service over fibre is functionally similar to the retail service offered over other forms of fixed network, and that, where available, a customer of DSL retail broadband would switch to purchase a fibre-based retail product in the event of a SSNIP.

<sup>63</sup> <http://www.irishbroadband.ie/products.php?cbo=1>

<sup>64</sup> [www.digiweb.ie](http://www.digiweb.ie)

*ComReg's position*

4.66 ComReg considers that retail broadband products provided over cable, fibre, and FWA networks are in the same market as DSL retail broadband products, and so that all forms of fixed broadband access belong in the same market.

Is dial-up internet access in the same product market as broadband internet access?

4.67 In the Consultation, ComReg proposed that dial-up narrowband access is not in the same product market as broadband access. This is primarily because of functional differences between the two products. The key functional differences are as follows:

4.68 Broadband internet access offers significantly higher speeds than narrowband access, which allows the user access to a greater range of internet based services (including video streaming and Internet Protocol (IP) telephony), typically at a higher quality of service.

4.69 A broadband connection allows the retail customer to use voice and data services simultaneously, whereas a narrowband user is not able to make or receive a voice call while accessing the internet.

4.70 ComReg proposed that consumers value the additional features associated with broadband internet access. For this reason, broadband providers tend to highlight these characteristics when marketing broadband access products. This view is consistent with consumer research conducted in other jurisdictions, for instance by Ofcom in the UK, which shows that consumers consider these features to be important.<sup>65</sup>

4.71 When broadband was first launched as a retail product in Ireland, the entry level service was priced at a premium compared with the typical dial-up internet service. Despite the higher price of broadband, a considerable number of consumers were willing to pay the premium, thus demonstrating the value associated with these features from the outset. Over time the pricing of broadband and dial-up internet has converged, and greater numbers of customers have switched from dial-up internet to broadband. The one-way movement of consumers towards broadband access suggests that broadband access has superseded dial-up internet access as a means of accessing the internet.

4.72 For example, at the time of the last review of the market for Wholesale Broadband Access, there were 693,058 retail internet subscribers, of which 21,560 were retail broadband subscribers (third quarter of 2003).<sup>66</sup> By the end of the fourth quarter 2007 there were a total of 1.21 million active internet subscriptions in Ireland, of which 886,000 customers subscribed to broadband.<sup>67</sup> The trend suggests that the market for internet access has grown overall, and that narrowband internet is being superseded by broadband access. ComReg expects that this trend will continue, as the price of retail broadband continues to fall

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<sup>65</sup> Ofcom Review of the wholesale broadband access markets 2006/07, Identification of relevant markets, assessment of market power and proposed remedies, Explanatory Statement and Notification, 15 November 2007.

<sup>66</sup> ComReg 03/144b

<sup>67</sup> Broadband figures include ADSL, Cable, Fibre, FWA, Mobile, and Satellite.

relative to dial-up access, and the functionality and quality of broadband services advances.

- 4.73 In the Consultation, ComReg considered that dial-up internet is in a separate product market from broadband access. None of the respondents voiced concerns with this proposal. Therefore, ComReg maintains the view proposed in its Consultation paper.

Is broadband internet access in the same product market as internet access via leased lines?

- 4.74 In the Consultation, ComReg considered the extent to which customers using broadband internet access via a high speed link such as DSL or cable modem would switch to internet access provided over a leased line, in response to a small but significant price increase in the high speed variant.
- 4.75 The functionality and pricing of leased line products differ considerably from retail broadband internet access products. Leased lines offer dedicated, transparent transmission capacity between two points, providing bandwidth that is always available.
- 4.76 Leased lines tend to offer a high capacity symmetric link, and this may be an important feature for customers who have requirements for high upload volumes (such as businesses that require connectivity between separate business branches). For these reasons, leased lines are more expensive than a standard broadband access connection, and are typically targeted at large corporate customers.
- 4.77 Given the distinct pricing and functional differences between retail broadband and leased line connections, these products would not (in the majority of cases) be considered to be suitable substitutes. Therefore, ComReg considered that internet access via leased lines is in a separate market.
- 4.78 This view was accepted by all respondents, and is maintained.

Are fixed and mobile retail broadband access in the same market?

- 4.79 In the Consultation, ComReg noted that two forms of internet access are offered by mobile operators. Customers can access the internet from a mobile phone, or alternatively, can attach a mobile data-card or modem to a computer.
- 4.80 ComReg proposed that broadband access on a mobile phone is not functionally equivalent to that provided over a fixed high speed link to a computer. The functionality of mobile phone internet access is limited in terms of screen size, resolution, and availability of applications. For these reasons, ComReg considered that broadband internet provided via a mobile phone is unlikely to be considered a substitute for fixed broadband access, and therefore is in a separate retail market.
- 4.81 ComReg considered specifically whether mobile broadband products provided using a data-card or a wireless modem are similar enough in terms of functionality and price to fixed broadband access products to be defined as a suitable substitute.
- 4.82 ComReg noted that the price of mobile broadband is similar to fixed broadband prices (when the up-front cost of the modem is averaged out over a 12 month subscription period), and that the high growth rate of mobile broadband compared

to the growth of fixed broadband (particularly fixed wireless broadband) suggests that some degree of substitutability may be occurring between fixed and mobile broadband.

- 4.83 ComReg proposed that there are functional differences that may limit the extent to which mobile broadband is substitutable for fixed retail broadband. At present, mobile broadband customers are less able to upgrade the quality or speed of their service (for example, if the needs of the customer change). For this reason, mobile broadband services may be less capable of supporting applications that require high speeds and quality of service (for example, triple-play applications, gaming, VOIP). Furthermore, more restrictive monthly data caps placed on mobile broadband products would limit the value of mobile broadband for heavy internet users.
- 4.84 ComReg noted that typically mobile broadband products are targeted at individuals, rather than households or offices. While mobile broadband products can be connected to wireless routers, the standard mobile broadband modems are designed to connect to one computer at a time through the USB or Data-Card port in a computer. Fixed broadband services, however, usually include a multiple port modem or a wireless router, thereby suggesting that fixed broadband services are better suited to households or offices where multiple users may require simultaneous connectivity.
- 4.85 ComReg considered that for households and offices that already have a fixed telephone line, the incremental cost of purchasing DSL broadband to that customer is lower. Further, DSL broadband can be purchased as an 'add-on' to the customer's monthly telecommunications package, and attached to a single bill (assuming the same service provider is used for the telephone and broadband services).
- 4.86 ComReg considered that mobile broadband products would hold appeal (as a substitute for fixed broadband) for a specific group of customers that fit the following profile:
- Do not require a fixed telephone line
  - Value mobility
  - Do not require a high-end broadband service (in terms of speed and quality of service).
  - Are not heavy internet users
- 4.87 ComReg's preliminary view was that this group of customers is not of sufficient size such that a hypothetical monopolist fixed broadband provider would be prevented from imposing a profitable SSNIP of fixed broadband within the period of this review.
- 4.88 ComReg referred to the diversification of some mobile operators into the provision of DSL broadband. This suggests that mobile broadband is not considered by operators to be a close supply side substitute for fixed broadband. For example, Vodafone (a mobile broadband network operator) purchased Perlico (a DSL broadband provider) and now offers a range of fixed and mobile products.

Similar patterns have been observed in other jurisdictions. In the UK both O2 and Vodafone offer mobile broadband as well as DSL broadband services. ComReg proposed that the effective overlaying of fixed and mobile networks by an individual operator would not be commercially or economically justified if the respective networks were providing substitutable products.

- 4.89 Overall, ComReg considered that while there is likely to be some substitutability on the edges of the market, the majority of fixed broadband access retail customers would be unlikely to switch to mobile broadband access in response to a SSNIP of fixed broadband. In addition, practice in the supply of broadband services suggests that operators are not likely to consider fixed and mobile as substitutes. On balance, then, ComReg proposed that retail mobile broadband access is in a separate market from retail fixed broadband internet access.

#### *Views of respondents*

- 4.90 It is noted that the assessment of the retail market was undertaken as a preliminary step to analysing the wholesale market, and the retail broadband market was not considered susceptible to *ex ante* regulation. For this reason, most respondents did not comment directly on ComReg's discussion of the retail broadband market.

- 4.91 One respondent presented a detailed analysis outlining its view of the substitutability of 3G broadband services and fixed broadband solutions. The respondent proposed that:

- There is little functional difference in terms of upload and download speeds for the majority of broadband users.
- There is little or no difference in download volume limits for the majority of broadband users.
- Both technologies offer comparable pricing, and significant savings are possible when switching from DSL to mobile broadband.
- There is evidence that mobile providers are marketing 3G broadband as a substitute for DSL and cable.

- 4.92 This respondent also submitted an external consultancy report which noted the ongoing evolution of 3G wireless (utilising HSPA) alongside the development of WiMax and FWA. The report noted that these developments would allow wireless to offer higher maximum download and upload speeds than DSL. HSPA Evolved – also known as HSPA+ - is the next step enabling speeds of up to 42Mb/s in the downlink and 11Mb/s in the uplink. The report suggested that HSPA Evolved will be available globally in late 2008 to early 2009. However, the report proposed that as maximum speeds increase, not all users will benefit without additional base stations and/or spectrum.

- 4.93 The respondent also referenced an article claiming that many Irish retail customers use mobile broadband as their primary means of internet access; strong competition is leading to aggressive price cuts; and the percentage of mobile-only homes is continuing to increase. The article drew on growth rates of 3G

broadband in Ireland to argue that 3G mobile broadband was a strong competitor to fixed line services.

- 4.94 The same respondent characterised the WPNIA market as consisting of a number of vertically-integrated operators, able to offer WPNIA, and able to expand. This led to the respondent's view that a 10% increase in the price of WPNIA would result in large numbers of customers switching away from various downstream retail products to competing networks such as 3G mobile, FWA, and cable.
- 4.95 In addition to the points noted above, the respondent raised some specific issues around ComReg's analysis. The respondent maintained that the number of users fitting the profile of users who would potentially consider mobile broadband to be a substitute for fixed broadband is increasing. In the respondent's view, over 80% of current DSL users could find their present speed requirements comfortably met by mobile broadband offers. The respondent argued that ComReg has applied the SSNIP test in an inconsistent manner between its assessment of FWA and mobile broadband access.
- 4.96 The respondent argued that ComReg's own publication concerning the use of ICT by consumers<sup>68</sup> indicates that mobile broadband is a viable substitute for fixed broadband, since customers are using it as a primary access technology rather than a complementary or additional access technology. The respondent referred to a point made in the Consumer ICT Survey for ComReg published in June 2008 that "mobile broadband has increased to 8% this quarter, and is the second most utilised broadband platform. Residential consumers seem to be using this as a primary access method, with only 2% using mobile broadband as an additional access technology".
- 4.97 A second respondent believed that 3G mobile broadband should be included in the retail market, and that a failure to do so leads to a flawed view of the wholesale market. This respondent disagreed with several elements of ComReg's analysis. The respondent's view is that the functional differences outlined by ComReg are not significant, and that the ability to upgrade to higher speeds is not an issue. The respondent argued that mobile broadband provided by a data card, USB dongle, or a mobile phone is likely to be substitutable for fixed broadband, particularly for light broadband users who value mobility, emphasised by the fact that modern smart phones have larger screens. The respondent suggests that the similarity of pricing between fixed and mobile broadband also indicates that they are substitutes.

*ComReg's views and analysis*

- 4.98 ComReg has carefully considered the views expressed by respondents. In order to properly evaluate their comments, ComReg has carried out further analysis on the extent to which retail fixed broadband and retail mobile broadband can be seen as substitutes. This has included the following:

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<sup>68</sup> ComReg 08/49, Consumer ICT Survey – a review of findings by Millward Brown IMS, ComReg, June 2008.

- issuing an updated Data Direction to mobile and fixed operators with specific questions concerning actual and potential substitutability of fixed and mobile broadband<sup>69</sup>;
- analysis of new data provided by operators;
- reviewing relevant research published after the original WPNIA Consultation;
- reviewing recent decisions of other NRAs; and
- further technical review carried out within ComReg.

4.99 Two forms of retail internet access are offered by mobile operators. Customers can access the internet from a mobile phone, or alternatively, can attach a mobile data-card or modem to a computer. ComReg will begin by assessing whether mobile broadband delivered over a modem or data card is a substitute for fixed broadband.

4.100 The willingness of consumers to switch between different products will depend on the relative price and functionality of those products. In response to respondents' comments, and in order to further test the likely extent of substitutability between fixed and mobile broadband, ComReg has investigated and assessed the functional and price characteristics of retail fixed and mobile broadband products. ComReg has also further considered the commercial strategies that are employed by fixed and mobile broadband providers, in particular the trend towards operators providing both fixed and mobile broadband (overlapping network coverage and broadband service provision).

4.101 Finally, ComReg has assessed whether or not mobile broadband is sufficiently substitutable such that it prevents retail fixed broadband providers from imposing a successful SSNIP of retail fixed broadband.

### **The functional characteristics of fixed and mobile broadband**

#### **Broadband actual average speed and variability**

4.102 While the maximum theoretical speeds of mobile broadband are comparable with current fixed broadband speeds, the average throughput on mobile networks tends to be lower. A recently published expert report<sup>70</sup> suggests that mobile broadband is unlikely to be able to provide comparable speeds as fixed broadband in the foreseeable future. "It will be several years before it [mobile broadband] reaches the speeds where fixed is now". The report notes that certain services will remain impossible to provide (or at least unsuitable for provision) over mobile broadband, at least until LTE is commercially available (first adopters 2009, mass markets 2011).

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<sup>69</sup> Requirement and direction to provide information, 10 September 2008.

<sup>70</sup> Mobile Broadband: another substitution threat for fixed operators?, Analysys Mason, August 2008, page viii



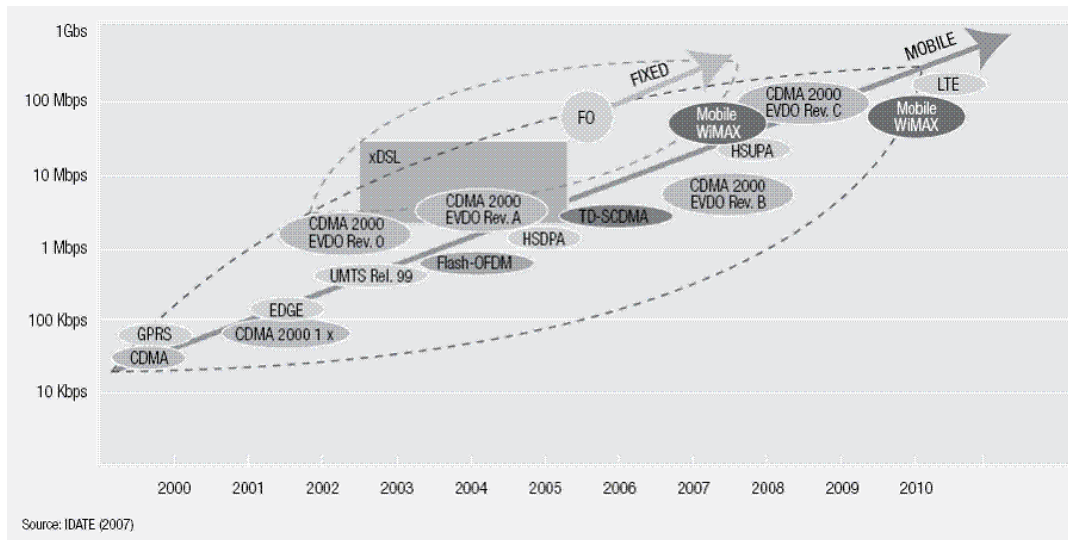
- 4.103 Testing conducted by ComReg, and information provided by mobile operators, suggests that current mobile broadband average speeds range between 800 Kbps and 1.9 Mbps, despite being advertised at maximum theoretical speeds of 3.6 and 7.2 Mb. Therefore, mobile broadband users are on average experiencing speeds well below the advertised theoretical maximum. ComReg understands that the gap is due to capacity constraints in the backhaul circuit (the link between 3G cell sites and the core network) and contention in the access network.
- 4.104 ComReg reviewed the results of testing conducted by one mobile broadband operator of its “up to 3.6Mb” product in a number of Ireland’s major cities. The test found that the network achieved an average throughput of 1.9Mb, varying between a minimum of 84kbps to a maximum of 3.22mbps. The testing also revealed an average uplink throughput of 480kbps. This varied from a minimum of 62kbps to a maximum of 968kbbps.
- 4.105 Another mobile operator advised ComReg that while its maximum network throughput is 3.6 Mbps, the network achieves an average of 1.15 Mbps at a standard deviation of 343 Kbps. The operator noted that managing backhaul and contention on a mobile network is more difficult than doing so on a fixed network, since it can be difficult to predict the movements of mobile customers between base stations. For example, congestion may occur when a large number of mobile broadband customers unexpectedly converge within the reach of a single base station and require broadband access. In that case contention and congestion may adversely affect the user experience of those accessing that base station, e.g. by slowing down the connection considerably for all customers being served by that particular base station at that point in time.
- 4.106 Mobile operators noted that the download and upload speed that customers experience on a 3G mobile network can be affected by a number of factors, including:
- The availability of sufficient backhaul to support the traffic load (a primary challenge, according to one operator).
  - The number of simultaneous users on the network (which is at its highest during the busy period from about 6pm to 10pm during weekday evenings).
  - The distance that the customer is located from the nearest 3G mast.
  - The thickness of the walls in the premises where the customer is located and on other network conditions.
  - The modem that the customer is using can also affect the speed experienced.
- 4.107 One mobile operator advised ComReg that providing mobility, specifically the ability for a customer to move between cells, can make it difficult for mobile operators to predict capacity requirements for a base station at a given point in time. Therefore mobile networks are more difficult to plan and manage than are fixed networks. Building excess capacity into the network to the extent required

to achieve consistent throughput (even through peak times) on a mobile network is likely to raise costs by a considerably amount, which may then be passed onto broadband customers through increased retail prices.

- 4.108 In the case of fixed broadband speeds, one operator advised ComReg that on average its DSL customers experience the advertised speed less an “ATM overhead” of 20%. Therefore, customers on a 1Mb broadband package would on average receive 800Kb, and a customer purchasing a 3Mb broadband product would be likely to receive approximately 2.4Mb. Another operator reported that it offers broadband packages at speeds of 1Mb, 6Mb, 7.6Mb and 24Mb using LLU and Eircom Bitstream. A similar ATM overhead can be assumed in order to determine actual speeds being achieved.
- 4.109 For an operator using ADSL2+ technology, a maximum speed (depending on quality and length of line) of 24Mbps can be achieved. Each DSLAM is served with a minimum 2.5Gbps and therefore runs at zero contention. As such, throughput is guaranteed and directly related to the speed of pipe purchased.
- 4.110 Retail broadband offered over a cable network or via FWA is available in Ireland at speeds ranging from 1Mb to 20Mb download. If a cable network is upgraded to a EuroDocsis 3.0 platform, speeds of up to 150Mbit/sec can be achieved. In general, latency and drop-outs do not occur on a well maintained Docsis network.
- 4.111 Variance of throughput differentiates the fixed broadband user experience from the mobile broadband user experience. ComReg’s analysis shows that the variance associated with mobile broadband throughput is significantly higher than that of fixed networks, due to higher contention in the network, and difficulties in managing networks where the users are mobile (moving between base stations). Variance will affect a large number of customers. For example, congestion may cause throughput to reduce at peak times during the day, when a large number of customers are using their broadband connections. This means that a large group of users will be adversely affected by congestion on the network during peak-usage times.
- 4.112 The figure below illustrates recent research into the time lag between fixed and mobile broadband. The graph shows that fixed networks are on an order of magnitude (up to 10 times) faster than mobile networks, and that mobile speeds lag behind fixed speeds by three to four years.<sup>71</sup>

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<sup>71</sup> CEDA research report, December 2008- Growth 60: Australia's Broadband Future, page 17



## Latency

4.113 ComReg understands that the latency experienced on mobile networks is significantly higher than that experienced by end-users on fixed networks. For example, DSL broadband connections typically experience between 15 and 45 milliseconds, while mobile network connections experience approximately 1.4 seconds of latency. High latency presents a problem for some broadband users, particularly VoIP users and gamers. While latency is expected to improve in future generations of mobile broadband technology, the gap remains wide, and the timing of such upgrades appears uncertain.

## Multiple-terminal simultaneous connectivity

4.114 Fixed broadband products are more suited to households (with cohabitants) and businesses, where the ability for multiple-user connectivity may be required. As noted previously, fixed broadband products are often offered with a multiple port modem or a wireless router, thereby suggesting that fixed broadband services are targeted towards, and suited to households or offices where multiple users may require simultaneous connectivity within the premises. The ability of fixed broadband to be used effectively in a shared environment is dependent on the consistency of throughput available on fixed networks, and the availability of sufficient capacity on the network to support multiple users per broadband connection.

4.115 In contrast, mobile broadband is generally targeted at individuals. While mobile broadband products can be connected to wireless routers, the standard mobile broadband modems are designed to connect to one computer at a time through the USB or data-card port in a computer. In fact, mobile operators in Ireland have not widely promoted the use of wireless routers or made them available to customers, which suggests that mobile broadband is targeted at a different type of customer.

## The relative pricing of fixed and mobile broadband

4.116 The price of retail mobile broadband is similar to retail fixed broadband, when the up-front cost of the modem is averaged out over a 12 month subscription period. However, ComReg notes that the price of fixed broadband is

more likely to be spread over a household, whereas the price of mobile broadband is likely to be borne by a single user. Therefore the price of broadband per user is likely to be lower for fixed broadband.

- 4.117 Comparable pricing does not in itself indicate substitutability between products. The products may be priced similarly, but provide different features that appeal to different types of customers. For example, customers that require low latency broadband may see mobile broadband as an unsuitable product, and would not be willing to switch from fixed to mobile broadband irregardless of price comparisons. In contrast, individual customers that place importance on mobility may in some cases be willing to pay a premium for mobile broadband. In each case, these customers may not switch from their preferred type of access to their less preferred type in response to a SSNIP, regardless of whether the prices of the respective products are similar in the first place.
- 4.118 An expert report indicates that below cost price has been common at the product development phase of 3G mobile broadband, since the products have to some extent piggy-backed on existing mobile network infrastructure. The report considers that as the products mature, mobile broadband operators will be required to upgrade infrastructure, including backhaul networks, in order to cope with increased usage and proposed throughput offerings. The report's view is that over time mobile operators will look to recover the full costs of providing mobile broadband, and as such below cost pricing is not sustainable in the medium to long term. The implication is that the aggressive pricing of mobile broadband products would have to be tempered.
- 4.119 ComReg has observed that despite the launch of mobile broadband by a number of operators in Ireland at prices that are comparable with fixed broadband prices, there does not appear to have been a significant number of customers switching from fixed to mobile broadband. Declining market shares of fixed wireless operators suggest that some switching may be occurring between fixed wireless and mobile broadband. ComReg considers that this substitution may be occurring because customers of FWA retail broadband and mobile broadband share similar profiles to a degree in contrast with traditional fixed and mobile broadband customers. However, in ComReg's view this is not occurring to an extent which would render a SSNIP profitable, particularly as DSL broadband is continuing to grow.

#### **Do broadband providers view 3G broadband as a substitute for DSL and cable?**

- 4.120 In the Consultation, ComReg considered that there is a certain group of customers that will consider mobile and fixed broadband to be substitutes. As such, it would be rational for mobile operators to target such fixed broadband customers that would consider switching to mobile on the retail market.
- 4.121 ComReg notes however that mobile broadband operators such as Vodafone Ireland and 02 have recognised that a separate customer demand exists for fixed and mobile broadband products. Based on this understanding, these operators have diversified their product offerings to include DSL broadband.
- 4.122 ComReg notes that Meteor (which is a subsidiary of Eircom), is currently deploying a 3G mobile broadband network. The deployment of a 3G mobile network by Meteor indicates a recognition by Eircom (which has a near-

ubiquitous fixed broadband network in Ireland) that mobile broadband offers a different value proposition to fixed broadband, and thus would not in many cases be seen as a direct substitute for fixed broadband.

- 4.123 This trend is also evident in other countries. In several jurisdictions, fixed operators have recently launched mobile broadband products which are add-ons to their fixed retail broadband offers. Examples include Sonera in Finland, Telekom Austria, Telia in Sweden and O2 in the UK, all of which offer a mobile service with advantageous tariffs bundled with a core fixed retail broadband service. Such diversification between fixed and mobile broadband would not appear to be rational if mobile and fixed broadband were close substitutes.
- 4.124 In particular, if a high degree of substitutability existed between fixed and mobile retail broadband products, then the use of DSL by mobile broadband network operators would amount to unnecessary network duplication, and would presumably lead to cannibalisation of revenues associated with an operator's existing network, thus undermining the commercial rationale behind this strategy.
- 4.125 ComReg notes further that the consideration of mobile operator strategies is indicative of these operators' views of market demand characteristics, as well as of the operators' own supply characteristics. ComReg asked operators in the Data Direction the extent to which they perceived fixed and mobile broadband to be substitutes, and ComReg notes that most operators did not believe that fixed and mobile are substitutes. While care must be taken in interpreting views about the future direction of the market, ComReg notes that these views are supported by actual market behaviour.

#### **Testing the willingness of consumers to switch between fixed and mobile broadband**

- 4.126 In response to comments from respondents, ComReg has reviewed the application of the SSNIP test in its assessment of the retail broadband market.
- 4.127 ComReg applied the SSNIP test according to the European Commission SMP Guidelines. ComReg considered what would be the likely response by customers to a small but significant (5-10%), lasting increase in the price of a given product or service, assuming that the prices of all other products or services remained constant. If consumers would switch from one product to another in response to a 5-10% increase in price to the extent of rendering such a price increase unprofitable, this would suggest that the products fall within the same market. If the loss of sales resulting from the increase in price would not be sufficient to offset the increased profits that would otherwise be made from sales after the price increase, then the products would be said to fall within separate markets.
- 4.128 ComReg has extended its analysis by considering the application of the SSNIP using the critical loss test. The critical loss is the percentage reduction in demand for which the SSNIP leaves profits unaffected. Therefore, a larger loss of demand than the critical loss makes the SSNIP unprofitable. In other words, the critical loss margin can be used as a measuring stick when applying the SSNIP test in the retail broadband market. The critical loss is calculated in this case for the purpose of assessing whether mobile broadband is sufficiently substitutable for fixed broadband such that a fixed broadband provider would be prevented

from imposing a profitable SSNIP on the price of fixed broadband. If the likely substitution from fixed broadband to mobile broadband exceeds the critical loss margin then mobile broadband would be considered to fall within the relevant market.

- 4.129 The change in profit equals the change in revenue less the incremental costs saved (assuming constant marginal cost, c):

$$\text{Critical loss} = X / X+M$$

- 4.130 This formula shows that for a given price increase of X percent, the critical loss is smaller the larger is the margin. Intuitively, the larger the margin, the greater the profit lost from a given reduction in quantity, so the smaller the reduction in quantity required for a given price increase to be unprofitable.

For example: If the margin is 60%, the critical loss from a 5 percent price increase =  $.05 / .05 + .6 = .077$

Example from Ofcom's analysis of critical loss<sup>72</sup>

- 4.131 Ofcom currently estimates that the marginal cost of supplying retail broadband Internet access services is in the range £14 to £19 per calendar month (inc. VAT), whereas the current weighted average retail price before the SSNIP is £25 per calendar month (inc. VAT). Given these latest estimates, a 10% SSNIP would give rise to a critical loss in the range 18.5% to 29.4%. The result implies that a very large number of customers would have to switch away in order to render a 10% price increase as unprofitable.

Determining the profit margin

- 4.132 *What is the appropriate price to use?* ComReg considers it appropriate for the purpose of this analysis to use a weighted average price of Eircom's broadband products, which amounts to €27.38 per month (inc. VAT). This reflects the fact that the average consumer of fixed broadband already pays for a fixed line, and therefore only faces the incremental price of the broadband (not the line rental) when considering whether to purchase broadband. In other words, this is the additional price of broadband over and above the price of line rental.
- 4.133 *What is the incremental cost of providing retail broadband?* ComReg considers it appropriate to include an allocation of fixed and variable common costs in the incremental cost figure used for this analysis. This reflects the lumpy nature of investments made in the provision of fixed broadband, and avoids overstating the margin available to operators investing in fixed broadband. The incremental cost figures used for the purpose of this analysis represent the additional cost of providing a retail broadband service over a copper network, on a per subscriber/per calendar month basis. Analysis conducted by ComReg reveals an incremental cost range of between €12.10 and €19.36<sup>73</sup> (inc. VAT) we get the following result for the contribution margin.

$$\text{Initial Price} = P$$

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<sup>72</sup> <http://www.ofcom.org.uk/consult/condocs/wbamp/wholesalebroadbandreview/annexa/>

<sup>73</sup> The range given is an estimate of the incremental cost of providing fixed broadband, based on information available to ComReg.

Incremental cost = C

Pre Monopolisation gross margin:  $M = (P-C)/P$

Applying this formula to the lower and upper bound estimates referred to above gives the following:

$$M = (27.38 - 12.10) / 27.38 = 56\%$$

$$M = (27.38 - 19.36) / 27.38 = 29\%$$

- 4.134 Using the formula for critical loss and the margins calculated above, at a 10% SSNIP of retail broadband, the critical loss would be between 15.15% and 25.64%. At a 5% SSNIP, the critical loss would be between 8.20% and 14.71%.
- 4.135 This result implies that between 15.15% and 25.64% of fixed broadband customers would have to switch away from fixed networks to alternative networks in order to render a SSNIP (of 10%) unprofitable. When applying this critical loss specifically to the question of whether mobile broadband should be considered in the market, ComReg would need to be satisfied that the stated number of fixed broadband customers would switch to mobile broadband in response to the SSNIP.
- 4.136 Due to functional differences described above between fixed and mobile broadband (described in this paper), ComReg considers that the *actual* loss of customers from fixed to mobile broadband in response to a SSNIP would be lower than the estimated critical loss i.e. ComReg estimates that fewer than 15.15% – 25.64% of fixed broadband customers would switch to mobile broadband in response to a 10% relative increase in the price of fixed broadband.
- 4.137 The application of the SSNIP test, when informed by the above critical loss estimate, supports ComReg’s preliminary view expressed in the Consultation that the loss of sales from fixed to mobile broadband would not be sufficient to prevent a successful SSNIP of fixed broadband.
- 4.138 ComReg has applied the SSNIP test consistently across all retail broadband platforms. The application of a SSNIP test does not often produce a clear cut result, and in considering the potential switching between broadband products in response to a SSNIP, ComReg has taken a balanced view of a range of factors, and has been informed by broad inputs from industry as well as specific responses to the consultation.

*Overall conclusion on further analysis of fixed/ mobile broadband in the retail market*

- 4.139 ComReg has considered comments made by respondents regarding the substitutability of fixed and mobile retail broadband, and has augmented this by undertaking further research.
- 4.140 ComReg recognises that subscriber numbers for retail mobile broadband have grown rapidly in Ireland, and that pricing is comparable between fixed and mobile retail broadband services. However, there has been no evidence of this impacting on fixed broadband pricing.
- 4.141 In terms of functionality, there is a marked difference between marketing claims, information provided by operators in response to ComReg’s Data

Direction, and the results of tests carried out and reported by mobile operators, and carried out by ComReg.

4.142 ComReg considers that, on balance, the functional differences between retail fixed and retail mobile broadband continue to render them in separate markets, and that this is not likely to change within the lifetime of this review (i.e. the next 2-3 years). ComReg has reached this conclusion by carefully reviewing and extending its previous analysis published in the Consultation, and by taking into account responses to the Consultation and to data directions. ComReg's view is based on the following key findings:

4.143 The evidence indicates that the actual performance of retail mobile broadband differs significantly from that of retail fixed broadband, specifically in terms of speeds achieved, consistency of service, variability of service and latency. While ComReg expects the theoretical maximum throughput on mobile networks in Ireland to increase over the next 3 years, it expects that the broadband packages available over fixed networks will also increase, and will continue to be of a higher specification than mobile broadband products.

4.144 ComReg considers that the multi-user characteristic of retail fixed broadband is an important differentiating factor. A fixed connection enables several users to share a fixed retail broadband supply in a way which is not considered possible at present for retail mobile broadband users in the Irish market. This is important for households, and also for businesses, and the underlying rationale is similar to that which found that retail fixed calls and access were in a separate market to mobile fixed calls and access. The bottom line is that fixed services and mobile services remain sufficiently distinct in terms of functional characteristics and user perceptions to place them in separate markets.

4.145 Operator behaviour in the market supports views expressed in responses to the Consultation and Data Directions that offering retail fixed broadband alongside retail mobile broadband is a sensible strategy both from a demand and a supply perspective. That is, operators see distinct demand for retail fixed broadband products and retail mobile broadband products, and intend to continue to supply separate and distinct fixed and mobile products.

4.146 ComReg's views in this regard are consistent with that expressed in a recently published Analysys Mason report<sup>74</sup>, which suggests that mobile broadband is unlikely to be able to provide comparable speeds as fixed broadband in the foreseeable future.

*It will be several years before it [mobile broadband] reaches the speeds where fixed is now". The report notes that certain services will remain impossible to provide (or at least unsuitable for provision) over mobile broadband, at least until LTE is commercially available (first adopters 2009, mass markets 2011).*

4.147 In addition, ComReg's analysis is also consistent with the following view published by the OECD:<sup>75</sup>

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<sup>74</sup> Mobile Broadband: another substitution threat for fixed operators?, Analysys Mason, August 2008, page viii

<sup>75</sup> Developments in Fibre Technologies and investments, OECD April 3 2008, DSTI/ICCP/CISP(2007)4/FINAL available at <http://www.oecd.org/dataoecd/49/8/40390735.pdf>



*Wireless networks have some good characteristics with respect to cost for the last meters, mobility and flexibility. They are however not capable of sending large amounts of data over larger distances and to provide service to many users simultaneously. These limitations are for the most part inherent to wireless technologies. It is therefore expected that wireless networks will be mostly used in and around the end users premises to bridge the last meter from the device to the physical network or for users who do not want or need access to high bandwidth. They will also be in use for mobile applications. As a first mile technology it cannot compete with hybrid networks on either bandwidth or cost. However, wireless may be the only viable choice for the first mile in certain geographical situations where population is extremely dispersed and remote and where spectrum scarcity and sharing does not pose problems.*

4.148 Taking all of these factors into account, ComReg believes that, on balance, fixed and mobile retail broadband services are not substitutes. ComReg notes this conclusion is consistent with that of the European Commission. In the EC's initial Recommendation<sup>76</sup> a general division was made between services provided over fixed and mobile networks. In the Explanatory Note which accompanies the current Recommendation, the EC states that "overwhelmingly, despite some moves towards hybrid or converged offerings, this distinction is considered to be still valid"<sup>77</sup>

4.149 For the reasons described above, ComReg considers that broadband access on a mobile phone is also not functionally equivalent to that provided over a fixed high speed link to a computer. As noted previously, the functionality of mobile phone internet has additional functional limitations compared with regular mobile broadband in terms of screen size, resolution, and availability of applications. For these reasons, broadband internet provided via a mobile phone is not likely to be considered a substitute for fixed broadband access, and therefore falls within a separate market.

What is the significance of bundling in defining the retail broadband market?

4.150 In the Consultation, ComReg noted that retail broadband services are often bundled together with other products, such as fixed or mobile voice calls, and/or cable television in order to benefit from economies of scope in the supply of those services. Customers often benefit from discounts when they purchase services in a bundle, and may prefer a single point of contact and single bill for services supplied together.

4.151 From the supply side, bundling products into one service offering is likely to achieve savings in production, distribution and transaction costs. Bundling may offer suppliers the possibility of reducing churn in a market which is characterised by high customer acquisition costs, and may increase the revenue per customer even when the price of individual services is decreasing.

4.152 On the matter of how bundles should be treated within a market analysis, the EC states that service elements constitute markets in their own right if a sufficient number of customers would 'unpick' the bundle if a SSNIP were introduced.<sup>78</sup>

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<sup>76</sup> Commission Recommendation 2003/311/EC OJ L 114, 8 May 2003, p45

<sup>77</sup> Page 20, Explanatory Note

<sup>78</sup> European Commission explanatory note on the relevant markets, Section 3.3, page.16

- 4.153 ComReg has considered whether it is appropriate to define a market that combines broadband access with other retail services. In Ireland there are various types of broadband bundles, and most operators offering retail broadband have optional bundles. There are also operators focused on providing retail broadband access that are independent of a bundle. Therefore, customers in Ireland may buy broadband on its own, or combined with voice, or with cable TV, or all three.
- 4.154 ComReg considers that in this fluid environment, if there were to be a small but significant non-transitory increase in the price of a bundle, customers would (and do) choose to purchase the service elements separately, or would be able to switch between different bundles. This indicates that the service elements constitute relevant markets in their own right, and that the various bundles available do not constitute relevant markets.
- 4.155 For the purposes of defining the retail broadband market, then, ComReg's preliminary conclusion was that broadband access should be considered as a relevant product market in itself, not as part of a bundled product.
- 4.156 This view was accepted by all of the respondents who commented, and is maintained.

#### Geographical scope of the retail market<sup>79</sup>

- 4.157 In the Consultation, ComReg observed some degree of geographical variation in demand and supply of retail broadband across Ireland.
- 4.158 .At this point in time ComReg understands that approximately ten percent of Ireland is not served by terrestrial broadband networks. At the end of 2007 Eircom stated that *"[we] anticipate that 96% of the working telephone lines in Ireland will be connected to a broadband exchange by the end of 2009"*<sup>80</sup>.
- 4.159 In order to ensure that affordable broadband services are available throughout all of Ireland, the Government has introduced the National Broadband Scheme (NBS), which will support the provision of broadband access to households that currently fall outside the reach of existing broadband networks. ComReg expects that the implementation of the NBS will see the provision of broadband access to all households in Ireland within the period of this review.
- 4.160 Even with the NBS in place, the availability of competing broadband access providers will still vary depending on location. Information provided to ComReg by industry participants suggested that the availability of alternative forms of broadband access in Ireland is geographically limited. Therefore the broadband options available to a given retail customer will depend on the location of the customer. In general, the availability of alternative platforms is positively correlated with the population density of a given area (i.e. customers in metropolitan areas are more likely to have alternatives than customers in rural areas).
- 4.161 Despite the geographic variation in network coverage, retail broadband providers generally offer uniform prices across the country. These prices are not

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<sup>79</sup> It is not necessary for ComReg to conclude on the precise geographic scope of the retail market, because this analysis is intended only to inform the analysis of the wholesale market.

<sup>80</sup><http://home.Eircom.net/about/press/2007/December/11819201?view=Standard&main=yes>

subject to regulation, which suggests the existence of a national pricing constraint. As such, there is no clear evidence of sub-national retail markets.

#### *Views of respondents*

- 4.162 Respondents did not comment specifically on ComReg's analysis of the retail geographic market.

#### *ComReg's position*

- 4.163 ComReg's assessment of the geographical scope of the retail broadband market has been carried out in order to inform the discussion of the wholesale market, as the retail market is not considered susceptible to *ex ante* regulation. It is therefore not necessary for ComReg to conclude on the precise scope of the retail geographic market. A detailed analysis of possible geographical variation in demand and supply is carried out in the following assessment of the wholesale market.

#### Conclusion on retail market definition

- 4.164 ComReg's considers that the retail market for broadband internet access is distinct from retail internet access via a narrowband connection, from access via leased lines, and from mobile broadband access. All forms of broadband access from fixed locations form part of the same market because customers would be able, and likely, to switch to access via an alternative platform (where available) given a small but significant increase in price. This would include, for example, retail broadband provided over cable, FWA and direct fibre. The geographic scope of the retail broadband market is national. In coming to this conclusion, ComReg has considered the views of all respondents, and has carried out further analysis on issues which respondents have raised.

### **Defining the WPNIA market**

#### Does the WPNIA market include current and next generation networks?

- 4.165 At present, Eircom provides WPNIA products as a requirement of existing legislation. The current products are made available as wholesale unbundled access products. Eircom is required to provide the unbundled local metallic path (ULMP), as well as a combined Geographic number portability and unbundled metallic path (GLUMP) and a line share product, for both loops and sub-loops. Eircom is also required to facilitate co-location, and to provide associated facilities necessary to support the products.
- 4.166 OAOs use LLU products to provide a range of retail products, primarily retail broadband and/or narrowband voice. Some OAOs may use LLU products to access customers that are not in reach of their own network. Others may use LLU products as their sole means of reaching the retail market. The control and flexibility offered by wholesale access products means that OAOs can differentiate their retail offerings, and can bundle them in various combinations.
- 4.167 As noted previously, the WPNIA market is traditionally associated with physical access to the local metallic loop, which is generally considered to be the least replicable component of a fixed broadband network. The 'local loop' is often

referred to as the access component of a broadband network. The access network is the infrastructure (including for example, wires, cables and equipment) lying between a consumer/business premises (the point at which a connection reaches the customer) and the local exchange. In order to access this infrastructure, OAOs typically require facilities associated with LLU. This would include, for example, backhaul between cabinet or exchange based equipment (co-location point) and the OAO's required handover point.

4.168 However, the deployment of NGNs may change the architecture and design of broadband networks, such that sections of the metallic local loop are overlaid (or replaced) by fibre. For example, fibre may be deployed between the local exchange and the street cabinet (a metallic loop would still exist between the street cabinet and end-customer premises).

4.169 In considering the scope of the WPNIA market in an NGN environment, ComReg noted in the Consultation that the provision of WPNIA is intended to address actual and potential competition problems in wholesale and ultimately retail broadband markets. Accordingly, ComReg considered that taking a technologically neutral approach will ensure that the WPNIA market is sufficiently broad in its scope to address competition issues in an NGN environment.

#### *Views of respondents*

4.170 Seven respondents commented on the proposed inclusion of NGN/NGA in the WPNIA market. Of these, six believed that NGN/NGA should be included in the market, and one believed that it should not.

4.171 One respondent argued that it is premature, arbitrary and counter-productive to place fibre access in the same market as LLU based on the claim of technological neutrality. In the respondent's view, a market for fibre unbundling may not even emerge. The respondent suggested that the features, pricing, speeds and applications available in the case of FTTx<sup>81</sup> solutions – as yet still under development – would determine whether they are in the same relevant market for competition purposes as the current generation of broadband services.

4.172 The respondent continued by arguing that ComReg did not have enough information about NGN to judge whether it is in the same market, or how regulation might impact on investment incentives. In the respondent's opinion, ComReg has failed to consider key questions such as:

- Whether, when and to what extent fibre will be deployed at the network distribution level in Ireland.
- By which operators
- Whether fibre will be susceptible to physical unbundling as a technical or commercial matter, and

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<sup>81</sup> Either Fibre to the Home (FTTH) or Fibre to the Node (FTTN).

- What impact the proposed regulatory regime will have on Next Generation Access (NGA) investment decisions and investments in other alternative platforms.

4.173 The respondent believes that it is essential that any regulatory actions taken at this time be taken with a clear understanding of their potential impact on NGA investment decisions. A decision to include NGA in the WPNIA market may, in turn, impact roll-out or upgrade decisions by providers of cable and wireless broadband solutions.

4.174 In the respondent's view, NGN access in Ireland may be better placed in the wholesale broadband access market along with bitstream access, or alternatively may constitute a distinct relevant wholesale market.

4.175 The same respondent submitted an external expert report in support of its views. The key conclusions of the expert report submitted by the respondent who argued that NGN/NGA should not be defined in the WPNIA market can be summarised as follows: The report argues that the extension of the status quo approach to regulation of NGA will prove incompatible with achieving Government objectives. Consequently, ComReg should engage in dialogue with Eircom rather than relying on formal consultation to identify and resolve issues relating to NGA. This should be initiated in parallel with the process of the Government consultation on next generation broadband. A willingness to rethink orthodox regulation established to regulate networks that already exist is necessary.

4.176 The report cites Ofcom's approach to regulating fibre in the UK as a positive step. The report suggests that ComReg should focus on achieving investment and innovation, and that ComReg and potential investors should develop a policy and regulatory framework which provides for:

- A credible regulatory framework for next generation broadband which provides potential investors with a reasonable assurance that the rewards from investment will be commensurate with the risks.
- A swift and orderly processes for copper network phase-out alongside next generation broadband investment to avoid the need to run legacy and next generation networks side by side.
- The development of a flexible end-to-end bitstream access product compatible with next generation broadband to foster innovation, and prevent fragmentation and Balkanisation of the access market which would hamper development of new applications and services.

4.177 All other respondents who commented on this issue believe that NGN/NGA forms part of the WPNIA market, with one respondent remarking that it was both appropriate and necessary to come to this conclusion.

#### *ComReg's views and analysis*

4.178 In considering the views of WPNIA respondents, ComReg has carried out further detailed research. This has included reviewing the following material:

- Responses to consultation – including a supplementary report included in one respondent’s submission and responses to ComReg’s Data Directions
- EC policy development on NGN/NGA, including the Draft Recommendation on regulated access to NGA<sup>82</sup>
- European Regulators Group (ERG) policy development
- other NRA approaches to NGN/NGA regulation
- ongoing work carried out in the NGN Industry Steering Group
- ComReg publications
- Other relevant publications.

4.179 ComReg’s assessment is summarised below.

#### **Responses to consultation and Data Directions**

4.180 ComReg notes that the expert report submitted by one respondent provides interesting background material on possible approaches to the regulation of NGN/NGA. The report is generally concerned with how fibre may best be regulated, rather than with what constitutes the WPNIA market, so is addressing a different question.

4.181 In considering the responses to the Consultation, the key concerns expressed by one respondent are that, firstly, it is premature to consider whether or not fibre can be defined as part of the WPNIA market, and, secondly, that any decision may jeopardise investment in NGN/NGA and so adversely affect market development.

4.182 ComReg’s approach recognises the uncertainty around how, when and indeed if NGN/NGA will be implemented in Ireland. In this market review, the concern is with addressing the bottleneck constituted by the access network, rather than developing a broad overall approach to fibre. In that regard, ComReg believes that it is essential to establish a set of principles as to how it intends to address any potential competition problems in the wholesale infrastructure access network. This market definition is necessarily *ex ante* or forward looking, and accordingly it is considered appropriate to include fibre, which may be rolled-out in Ireland. This is also consistent with the European Commission Recommendation.

4.183 In order to address concerns in more detail, ComReg has gone on to consider other approaches.

#### **European Commission Draft Recommendation**

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<sup>82</sup> Draft Commission Recommendation on Regulated Access to Next Generation Access Networks, 2008

4.184 The EC is currently consulting on recommended approaches to regulating NGA, and has published a draft Recommendation.<sup>83</sup> ComReg notes that the consultation is still underway, and that the eventual Recommendation has therefore not been finalised. However, the draft version provides an indication of the likely direction of EC proposals on NGA. The key points relevant for market definition are:

- NGAs are access networks which have been substantially upgraded either wholly or in part, using existing local access infrastructures and technologies and/or using new optical fibre infrastructures, and which are capable of delivering broadband access services with bandwidths significantly above those currently widely available.
- The current expectation is that the services potentially offered over fibre-based networks will comprise a far greater (and higher) range in terms of bi-directional bandwidth.
- Where NRAs find that one or more operators have SMP in market 4 (WPNIA), they should mandate access to new and existing ducts (with associated measures and processes necessary to ensure access is effective), civil engineering works and other elements which are not active, necessary for the rollout of competing infrastructure, and in particular of fibre, street cabinets or an optical equivalent.
- SMP operators should be required to ensure that when they roll out new ducts and other passive elements, sufficient space is allowed as appropriate for other operators to make use of these facilities.

4.185 The EC then goes on to discuss in some detail issues which the NRA should take into account when designing remedies for a WPNIA market, mindful of a potential investment in NGA. This discussion includes specific remedies designed to ensure that the access bottleneck continues to be addressed, and also remedies aiming to ensure migration to new forms of network. Of most relevance here is the way in which the EC proposes to consider new NGA infrastructure within the definition of Market 4 (WPNIA).

### **Review of European Regulators Group (ERG) policy development**

4.186 The ERG provides the following guidance on how NGA should be treated by national regulatory authorities (NRAs). The ERG emphasises that it is services and products delivered via the network newly rolled-out that are regulated, and not the underlying infrastructure. The ERG's position is that the WPNIA market should include fibre, for the reasons explained below.

- As operators move to NGA networks, different technologies may be deployed in different geographic areas in order to deliver end-services to customers. It is likely that the most effective strategy for NGA deployment will utilise a mixture of technologies to deliver these services depending on specific local characteristics, including:

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<sup>83</sup> Draft Commission Recommendation on Regulated Access to Next Generation Access Networks, 2008

- copper local loop and sub-loop lengths;
- customer density and dispersion;
- presence of multi-dwelling units, and
- the quality and topology of existing network architecture, in particular the number of street cabinets per MDF (Main Distribution Frame) and available capacity of facilities such as ducts.

4.187 The ERG considers that NGA networks may be likely to, at least, provide the same competition challenges to regulators as current generation wireline access networks. The ERG considers that NRAs should focus on predictability, and that transparency is important for ensuring certainty and predictability

4.188 The ERG notes stranding problems with regard to traditional LLU at the MDF may occur in view of changing infrastructure which may include reconfiguration or phasing out of MDFs: a balance has to be found between the commercial freedom of the SMP operator to develop its networks and services and the objectives of the NRAs to promote competition, e.g. by setting conditions under which the SMP operator is allowed to phase out its MDFs.

4.189 The ERG proposes that before the current access network is replaced by a NGA, it should be clear whether all the regulated services can continue to be delivered in the NGA. If this is not the case (e.g. phase-out of MDF access), an equivalent alternative should be determined. This equivalent alternative should be developed and implemented.

4.190 In the ERG's view, unbundling the shortened local loop ending at the street cabinet implies the need for co-location at the street cabinet. Furthermore unbundling the shortened local loop ending at the street cabinet implies the need for backhaul service in the middle mile from the cabinet to the operator's node and/or duct sharing. Duct sharing and backhaul could be imposed as ancillary services in the WPNIA market

4.191 The ERG has suggested that possible consequences for wholesale products include:

- Fibre must be included in the WPNIA market. If SMP is found, unbundling of the optical local loop could be imposed as an obligation; and
- Duct sharing could be imposed as a complementary remedy on the WPNIA market, encompassing both copper and fibre loops;

### **WIK Consultation Report – The economics of next generation access**

4.192 In September 2008 WIK-Consult published the findings of a study regarding the 'Economics of Next Generation Access'<sup>84</sup>. The study, commissioned by the European Competitive Telecommunications Association (ECTA), assessed the viability of next generation access business models and the

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<sup>84</sup> WIK-Consult report – The Economics of Next Generation Access



significance of regulation in terms of facilitating the replication of infrastructure and ensuring a competitive environment.

4.193 The study focused primarily on the analysis of the business case for fibre deployment in six European countries (Germany, Spain, France, Italy, Portugal and Sweden). Each country was assessed on the basis of the different technologies proposed for fibre deployment: Fibre to the Home (FTTH) via Point-to-Point (P2P) or Point-to-Multipoint (GPON); or Fibre to the Cabinet/Building (FTTC/B) using VDSL.

4.194 The conclusions reached can be assessed in four key areas: profitability; costs; incumbent advantages; and benefits of infrastructure sharing:

**Profitability:** The high costs associated with rolling out fibre would make such projects not economically viable across each of the six countries.

**Costs:** It was found that the roll-out of FTTC/VDSL is five times cheaper than FTTH, while the roll-out of FTTH using Point to Point technology requires 10% more investment than FTTH via GPON technology.

**Incumbent advantages:** The study found that incumbent operators are in an advantageous position when it comes to fibre deployment. These advantages stem from the reduced risk derived from ownership of existing infrastructure, ability to raise capital and current high retail market shares. First mover advantages are also considerable as the ability of OAOs to replicate the network infrastructure is very limited.

**Infrastructure sharing:** The profitability of NGA roll-out can be increased through cost reductions achieved by infrastructure sharing. Infrastructure sharing (the provision of wholesale services) would allow the incumbent to earn profits with a lower critical retail market share. The revenues earned from wholesale services would offset any potential reduction in retail revenues.

4.195 The main recommendations offered by WIK-Consult are as listed below:

- NRAs are encouraged to promote a competitive NGA environment through a range of access products. Such products would include duct and dark fibre access, fibre full LLU and fibre SLU, and bitstream access where LLU is not viable. It is recommended that NRAs adopt a technologically neutral approach to LLU/SLU, i.e. maintenance of current (copper) unbundling strategies for fibre.
- Where appropriate, operators should be entitled to increased rates of return (WACC) based on the risky nature of NGA investments. It is important allowed returns provide operators with sufficient incentives to invest, whilst ensuring that it does not damage competition as a consequence.

### **Review of other NRA approaches to NGN/NGA regulation**

4.196 ComReg has reviewed recent work carried out on NGN/NGA by other NRAs. Key findings can be summarised as follows:

#### CMT (Spain)<sup>85</sup>

- 4.197 The Spanish Regulator has emphasised that its goal is to eliminate unnecessary barriers for efficient investment in new networks, and at the same time encourage investment to take place and mature in an environment of effective and sustainable competitiveness. It is also necessary to protect users' interests.
- 4.198 CMT considers that there is a high degree of uncertainty around the rate and way in which NGA deployment will occur. The extent to which NGA will substitute existing copper networks is unknown, and so copper network access obligations should be maintained.
- 4.199 In CMT's view, it is very likely that NGA networks will eventually give rise to products and services exclusive to these networks that could belong to new expanding or emerging markets. However, in the time of CMT's market analysis, the most likely case is that the services supported on the new networks are either a replica of the current services, or higher quality versions or functions that can be exchanged with the current ones. CMT considers that a prospective analysis regarding the new definition of Market 4 of the Recommendation could include access to civil work infrastructures that allow the deployment of networks between local exchanges and buildings or homes, and specifically to trenches, chambers, ducts, posts or conduits and if applicable, to the dark fibre of the incumbent.
- 4.200 Access to civil works infrastructure (posts, manholes, handholes and ducts) is seen as important, regardless of whether these are copper or fibre based. CMT proposes to institute an obligation of access to physical networks infrastructure. This would include the infrastructure that allows for the roll-out of wire between exchanges and buildings, and also the end ducts and/or infrastructure of entry to buildings.
- 4.201 Regarding the duct infrastructure between the exchange and the buildings, it seems evident that as a consequence of the analysis of the new market 4, it would be feasible to impose on the operator identified as having SMP, in addition to the obligations already included in the RUO for the copper loop unbundling, other specific obligations related to the transparency and access to such civil works infrastructures, including the obligation to meet reasonable requests for duct sharing from competitors.

#### ARCEP (France)<sup>86</sup>

- 4.202 ARCEP has defined a single wholesale market for (physical) network infrastructure access including:
- The high- speed broadband market. This covers full and shared access to copper local loops and sub-loops (exclusion of cable networks, WiMAX or other alternative technologies).

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<sup>85</sup> Report on "Principles and Main Outlines of the Future Regulation of the Next Generation Access Networks (NGA)", (Results of Public Consultation on NGA), CMT, 17 January 2008

<sup>86</sup> Cullen International, Big 5 update, EU Telecom Flash 76/2008i

- The very high-speed broadband market. This market covers access to civil engineering infrastructures used for electronic communications and built by either telecommunications operators or local authorities. The market also includes access to dark fibre from the optical node to the customer premises. As civil engineering is the main cost for building NGA networks, ARCEP considered that the operator owning a network of ducts can easily roll out a fibre network and provide dark fibre services. On the demand-side, ARCEP considered that an operator providing very high-speed broadband services could easily switch between renting ducts and using dark fibre in case of a price increase of one or the other product.

4.203 ARCEP excluded from the latter segment access to sewer systems, electricity poles or any other civil engineering infrastructure not used for electronic communications as they would require specific additional measures and costs to be operational.

4.204 ARCEP considers that the high speed broadband market and the very high speed broadband market both fall within a single WPNIA market. This is because:<sup>87</sup>

- Retail services delivered over these networks can be considered as equivalent, at least during the timeframe of the review. ARCEP referred to the ‘Appingedam state aid case’ where the Commission considered that the level of substitutability between services provided over next generation networks and those provided over current networks is high.
- Demand-side substitutability: operators using local loop unbundling would request access to ducts to roll out optic fibre in case of a price increase and vice versa.
- Same competitive constraints are present: for example, civil engineering is the main cost for the roll-out of high-speed and very high-speed access networks.

4.205 The ARCEP approach therefore excludes access to fibre networks from the market definition, but includes:

- access to ducts from the local exchange to the border of the customer’s premises;
- the provision of co-location services and access to fibre backhaul; and
- dark fibre from the optical node to the customer’s premises.

OPTA (Netherlands)<sup>88</sup>

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<sup>87</sup> ARCEP however acknowledges that under longer term perspectives, the two segments may constitute distinct product markets.

<sup>88</sup> Regulation of NGN access: The Dutch Case, Presentation to Cullen international seminar on the European Commission’s Draft Recommendation on NGA, 9 October, Brussels. Presentation available at:

- LLU has been a key to the growth of broadband in the Netherlands
- NGA poses risks to LLU - LLU becomes threatened since LLU operators may lose access.
- OPTA wants to promote infrastructure competition, because it considers that cable and KPN are not enough. OPTA are still in favour of infrastructure competition, where possible, even in an NGA environment. This may include LLU, Sub Loop Unbundling (SLU), unlit fibre (shows strong potential).
- SLU has only limited potential, according to research conducted by OPTA, Analysys Mason, and Ofcom.
- LLU will become less effective, and will vanish. The question is where will LLU operators go? OPTA want LLU operators to stay on the same rung of the ladder of investment, or step up, but OPTA recognises that this may not be likely. In OPTA's view there is a need to create an effective passive NGA option, and ODF access will be included in the WPNIA market.

4.206 OPTA published the report - 'Start of consultations on policy rules governing access tariffs for fibre networks' contained the draft policy measures in relation to tariffs for access to fibre networks from KPN-Reggefiber. The paper assumes that the specified NGA elements fall within the WPNIA market.

4.207 The key points from the consultation are as follows:

- Assuming a technologically neutral approach, existing regulation for copper networks would remain intact with a revised approach to the allowable rate of return, which can be increased to promote efficient and innovative investments. Additionally, OPTA intends to allow volume discounts for unbundling of fibre. This is expected to stimulate greater take-up of fibre lines.
- OPTA suggests that a 'wholesale tariff ceiling' be put in place. This inflation-indexed (CPI) tariff would be derived from a cost model (the operator/investor's business model and internal rate of return) and would be reviewed on an annual basis for a period of three years.
- OPTA recommends the use of an All-Risk WACC which would adequately reward operators/investors for the risks associated with investment in NGA. This uplift would be on top of the existing rate of return applicable to copper networks and would reflect the risks centred around take-up of NGA services/access and potential future regulation.

- In the event of the investor's rate of return matching or exceeding the All-Risk WACC, the regulator may adopt one of the following approaches: impose a price cap on wholesale unbundling; insist on the offering of further discounts for wholesale unbundling; or allow the investor to extend its network to less profitable areas which would allow the investor to be exempt from further regulation.

#### APEK (Slovenia)<sup>89</sup>

4.208 APEK's approach notes that FttH has become ubiquitous in some parts of Slovenia.

4.209 The WPNIA product market includes ducts, fibre, backhaul (including Ethernet), and it is expected that fibre and copper will be defined in a single market. The WPNIA market does not include cable because it is not ubiquitous.

#### Conclusion on analysis of other NRA approaches

4.210 ComReg has summarised above some of the approaches taken by other NRAs. Since the publication of the EC's latest Recommendation on Relevant Markets, France and Spain have notified Market 4.

4.211 Clearly, different approaches reflect differences in national circumstances. However, there are common themes around the need to consider the extent to which the WPNIA market would include different underlying technologies such as fibre and copper, and would include access to ducts and/or dark fibre. The NRAs which have been reviewed have tended to include fibre in the WPNIA market, and where they have not, they have gone into some detail about how the access bottleneck should be overcome.

4.212 For example, in the case of ARCEP in France, while the market excludes access to France Telecom's fibre, it is explicit and detailed in facilitating access to ducts and dark fibre, and this is carried through in the obligations. ARCEP has imposed specific obligations regarding the publication of information on ducts, including maps, availability and specifications, and obligations covering what happens if a duct space is "saturated".

#### *Conclusion on whether the WPNIA market includes current and next generation networks*

4.213 ComReg has undertaken further analysis in response to respondents' comments on whether or not fibre should be included in the WPNIA market.

4.214 In ComReg's view, the approach in this market review considers how the access bottleneck may best be addressed. This is a different perspective from that of the respondent who has concerns with ComReg's approach, where its focus is on investment in a NGN/NGA network. Thus, the respondent raises questions

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<sup>89</sup> Regulation of NGA in Slovenia, APEK, Presentation to Cullen international seminar on the European Commission's Draft Recommendation on NGA, 9 October, Brussels. Presentation available at: [http://www.cullen-international.com/documents/cullen/cipublic/presentations/3\\_bostjan\\_makarovic\\_regulating\\_ng\\_a\\_in\\_slovenia.pdf](http://www.cullen-international.com/documents/cullen/cipublic/presentations/3_bostjan_makarovic_regulating_ng_a_in_slovenia.pdf)

about Government policy on NGN, and its expert report proposes solutions which are actually outside the scope of this review.

- 4.215 ComReg agrees with the respondent on several central points. It is not clear how, when, or even if, in the lifetime of this review, NGN/NGA will be implemented in Ireland. It is not clear whether fibre would be technically amenable to unbundling, or to any other form of sharing. It is not clear what services may be delivered, what the demand may be, nor what the potential supply strategies may be. ComReg is also aware of evolving Government policy in this area, and of the need to provide incentives to invest in new network provision.
- 4.216 ComReg notes that the European Commission requires NRAs to undertake an *ex ante* exercise and that “the market analyses carried out by NRAs have to be forward-looking” and “take account of expected or foreseeable technological or economic developments”<sup>90</sup>. As fibre access is an expected and foreseeable development, in order to comply with the *ex ante* approach advocated by the European Commission, ComReg is obliged to consider the WPNIA market in the NGN environment.
- 4.217 One respondent claims that regulation of NGA based services is premature and disproportionate since these services have not yet been rolled out. However, it is ComReg’s view that the advent of NGA should not be allowed to lead to a restoration of monopoly conditions over the access network, given that the conditions of competition are expected to be the same where Eircom overlays or replicates its existing access network with fibre and NGA equipment. Failing to address the implications of NGA would ultimately be contrary to ComReg’s statutory responsibility to promote competition and the interests of end users.
- 4.218 ComReg’s approach is to consider a WPNIA market, and to consider whether it is significant that the infrastructure may be fibre. The core concern therefore is with considering wholesale access as a means of overcoming a bottleneck. ComReg accepts that it may or may not be possible to unbundle fibre in the way that a copper loop can be unbundled. However, ComReg’s concern is to ensure that any new network provision recognises the requirement to provide WPNIA. ComReg recognised in the Consultation that this could be achieved in different ways, and has, in its forward-looking analysis, considered whether this could be achieved, for instance, by specifically obliging access to ducts and/or to dark fibre.
- 4.219 ComReg is therefore establishing a set of principles which apply to the WPNIA market. The WPNIA market is not restricted to current products, nor to current technologies. In considering whether fibre would be included in this market, ComReg’s view, having considered all relevant inputs, is that where fibre is used to provide network infrastructure access, then a wholesale product should be made available. ComReg has not tried to specify what that wholesale product should be, because it recognises that the market is evolving. Rather, the intention is to ensure that a wholesale product is available subject to reasonable requests, and in compliance with any and all obligations which may be imposed following a finding of Significant Market Power (SMP).

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<sup>90</sup> Page 6, Explanatory Note

4.220 ComReg notes that its approach to, and conclusions on, the scope of the WPNIA market are consistent with those of the European Commission.

#### Product market

4.221 The starting point for the market definition exercise is to hypothesise a narrow interpretation of the WPNIA market defined by the EC, and then to assess whether this should be broadened to include close substitutes. As noted above, the EC defines the market as:<sup>91</sup>

*Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location.*

4.222 ComReg noted in the Consultation that the analysis is forward-looking (i.e. taking into account developments over the next 2-3 years), so is not bound by the current situation (existing products and technologies). Accordingly, the current set of LLU products, which provide access to the metallic loop, are not a suitable starting point for consideration of the analysis. Rather, the WPNIA market identified by the EC in its Recommendation suggests that a technology neutral approach should be taken in determining the boundaries of the market. Therefore, ComReg considers the appropriate starting point to be access to wholesale (physical) infrastructure (including shared and unbundled access) at a fixed location.

4.223 From that starting point, in the Consultation, ComReg considered whether the WPNIA market should also include the following potential substitutes:

- Building a competitive access network
- Purchasing physical access to another operator's access network
- Purchasing Wholesale Broadband Access products (e.g. bitstream)
- Self-supply

4.224 Based on its preliminary conclusions on the relevant product market, ComReg then examined the geographic scope of the market. Each of these possibilities is discussed in turn below.

#### *Building an access network*

4.225 In the Consultation, ComReg considered whether an operator would consider investing in its own infrastructure as an alternative to purchasing WPNIA.

4.226 Evidence in the market suggests that there are circumstances where this may be possible. For example, an operator may choose to build fibre out to a new housing development, or may choose to use a mix of platforms to supplement its own network, or its existing use of WPNIA. The analysis must consider the extent to which an operator would find building new infrastructure to be a good

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<sup>91</sup> Commission Recommendation on relevant product and service markets, Commission for European Communities, 17 December 2007

substitute for purchasing WPNIA, and must consider if this would happen to the extent that it constrained the hypothetical monopolist supplier of WPNIA.

4.227 In the Consultation, ComReg's view was that it is unlikely that an operator would replicate the incumbent's fixed network in response to a SSNIP of WPNIA. In particular, the high investment costs and the time requirements associated with building the network would mean that such a deployment would not be commercially viable.

4.228 Based on its analysis of the retail market, ComReg identified four possible types of alternative network which should be examined as potential substitutes for WPNIA. These are:

- Cable
- Fixed Wireless Access (FWA)
- Direct fibre connection to the home (FTTH)
- Mobile

#### **Cable**

4.229 In the Consultation, ComReg considered whether a cable operator that is currently purchasing a product or service in the WPNIA market (for example as in-fill for its cable network) would switch to build new cable infrastructure in response to a small yet significant non-transitory increase in the price of WPNIA. This could include extending the cable infrastructure, or upgrading existing infrastructure to allow the offer of retail broadband. The preliminary view was that it would be unlikely that a cable operator would extend the cable infrastructure in response to a small yet significant increase in the price of WPNIA because of the high cost involved.

4.230 ComReg also considered the extent to which a cable operator would upgrade existing cable infrastructure to enable it to carry retail broadband in response to a small yet significant increase in the price of WPNIA. While there has been recent investment in upgrading cable infrastructure in Ireland, the coverage remains limited, and the investment costs are high. The preliminary view was therefore that a switch from WPNIA to upgrading cable network infrastructure would not be likely to an extent which would constrain a hypothetical monopolist of WPNIA.

#### **FWA**

4.231 In the Consultation, ComReg considered whether an FWA operator that is using wholesale access would switch to investing in new FWA infrastructure in response to a SSNIP of WPNIA. There are examples already in the market of operators which use a mix of FWA and other technologies to deliver retail broadband.

4.232 ComReg's preliminary view was that the investment costs associated with Fixed Wireless networks are lower than those associated with a wire-line network (such as cable, copper or fibre). However, the investment costs are still considerable. For example, the operation of FWA requires a licence, and requires



spectrum which may not necessarily be available on demand. The process of securing spectrum, gaining planning permission, and deploying FWA infrastructure would be costly and would take considerable time. As such, this option would be less feasible for OAOs that do not already have access to spectrum and infrastructure in place.

- 4.233 In undertaking analysis for the Consultation, ComReg asked OAOs the extent to which they would find the deployment of a FWA network to be a substitute for wholesale access. The response indicated that there is some degree of substitutability in specific circumstances, for example, in sparsely populated areas, and where operators use FWA for in-fill. However, operators would generally not consider FWA investment to be a close substitute for WPNIA, and would not switch to the extent that would prevent a WPNIA operator from imposing a successful SSNIP of WPNIA.

### **FTTH**

- 4.234 In the Consultation, ComReg considered the extent to which an operator would consider building direct fibre connection to the home (FTTH) in response to a SSNIP in WPNIA. The use of FTTH is generally associated with supply to new housing developments, or to Greenfield business sites, because the cost of supplying and building market share in an existing customer base would be prohibitive.
- 4.235 There are examples in the Irish market of operators using FTTH. FTTH tends to be used for a very specific purpose in a specific location, and is not likely to be viable in the mass market. ComReg notes that for those operators using this technology, it is a small part of their overall business, and they tend to have more customers on services delivered using wholesale inputs than they do on FTTH. Because of the limited scale of FTTH, and the specificity in how it is used, ComReg's preliminary view is that switching from WPNIA to FTTH deployment would not be likely to occur to an extent that would prevent a WPNIA operator from imposing a profitable SSNIP.

### **Mobile**

- 4.236 In the Consultation, ComReg considered whether an operator would be likely to switch to building a mobile network in response to a small but significant non-transitory increase in the price of WPNIA products. In the analysis of the retail market, ComReg noted that mobile broadband access is growing rapidly. However, differences in functional characteristics and in pricing led ComReg to propose that retail fixed and mobile broadband were not part of the same product market.
- 4.237 ComReg proposed that these differences are apparent also at a wholesale level. An operator would not be likely to find that they could offer a similar range of products over a mobile network as they could using WPNIA. ComReg does not consider that an operator would consider new mobile infrastructure to be a good substitute for WPNIA.
- 4.238 ComReg's preliminary conclusion was that an operator would not switch to invest in any new network in response to a SSNIP of WPNIA to the extent that would constrain a WPNIA operator.

#### Views of respondents

- 4.239 One respondent did not agree with ComReg's proposal. In this respondent's view, other platforms already provide competition in the WPNIA market.
- 4.240 Another respondent considered that ComReg's approach is too narrow, and that alternative platforms such as bitstream, cable, FWA and mobile broadband represent a range of substitutes to the provision of access services that enable broadband services in the downstream market.
- 4.241 All other respondents agreed that alternative infrastructures to that of the fixed incumbent are not deployed on a sufficiently widespread basis currently to represent an effective substitute. One of these respondents noted that building new infrastructure is unlikely to be a feasible option for competitors in response to a SSNIP for WPNIA products given the long lead times and major investment costs that would be required. This respondent also noted that market conditions should be kept under continuous review by ComReg as the implementation of recent government proposals, such as those contained in the Department of Communications, Energy and Natural Resources Consultation Paper on Next Generation broadband in mid-2008, may increase the competitive potential of alternative platforms in at least some areas going forward.

#### ComReg's views and analysis

- 4.242 In order to respond to the points made, ComReg needs to restate the methodology followed in assessing the WPNIA market.
- 4.243 In assessing the WPNIA market, ComReg worked through a sequence of questions in order to determine the boundaries of the market. The first step, as discussed above, was to ask whether an operator would be likely either to build new network or upgrade its existing network in response to a SSNIP of WPNIA. The next step was to consider whether an operator which currently had a network would be likely to purchase a wholesale infrastructure access product offered by another operator in response to a SSNIP. Next, ComReg considered whether an operator would be likely to switch to the purchase of a downstream product, namely a non-physical infrastructure access product such as Bitstream, in response to a SSNIP of WPNIA. Finally ComReg considered whether self-supply would form part of the WPNIA market.
- 4.244 In considering the first question, ComReg assessed whether a small but significant price increase in WPNIA products would lead purchasers of WPNIA to invest in extending or upgrading their current networks, to the extent that a price increase would be rendered unprofitable for the WPNIA supplier. ComReg's preliminary view as expressed in the Consultation was that the costs and time associated with investing in infrastructure would be significant, and that an operator would not be likely to switch to investing in its own infrastructure in response to a SSNIP of WPNIA.
- 4.245 In order to review this assessment, ComReg asked operators in the Data Direction issued at the beginning of the Consultation process, and again in the Data Direction following receipt of responses to Consultation, if they would consider switching to own infrastructure investment in response to a SSNIP. All operators who currently purchase WPNIA products said that they would not. While ComReg recognises that the expression of a view is not always the same as

actual market behaviour, ComReg believes that its original analysis was correct, and that the views of operators active in the market supports this view.

4.246 ComReg notes that its conclusions are consistent with the European Commission's findings as detailed in the Explanatory Note. In relation to cable networks, for example, the EC notes that "*where cable networks exist, their geographical coverage is often limited and wholesale access to such networks does not constitute a direct substitute for DSL-based wholesale access products form the demand or the supply side, so the inclusion in the same market is not justified*"<sup>92</sup>.

4.247 In relation to other access platforms, the EC notes that "*other access technologies including wireless local loops.....are starting to become available, but only on a scale that imposes little if any constraint on the local loop operators*"<sup>93</sup>.

#### *Purchase access to another operator's access network*

4.248 Having proposed that an operator would not build new infrastructure or upgrade existing infrastructure in response to a SSNIP of WPNIA, ComReg then considered whether an operator would seek to purchase a wholesale input from another operator with an alternative network to that of the incumbent in response to a small price increase in WPNIA.

4.249 ComReg proposed in its discussion of the retail broadband market that an end-user would find retail broadband services provided over all fixed access networks to be sufficiently close substitutes. This is because functional characteristics and pricing are sufficiently similar to allow customers to switch between products in response to a small but significant price increase.

4.250 ComReg considered whether a purchaser of WPNIA would consider switching to purchase a wholesale product offered over an alternative network. The preliminary view was that it would not, because of constraints on supply-side substitution. There is currently no product available which would allow an operator of, for example, a cable, mobile or FWA network to offer a service which was functionally similar to current WPNIA products. The development of a WPNIA product on alternative networks would require significant investments in time and money, and would not be possible within a reasonable timeframe.

4.251 This suggests that an OAO could not readily switch to purchasing WPNIA on another access network in response to a SSNIP of WPNIA by a hypothetical monopolist. Therefore, wholesale access on alternative platforms would not form part of the same product market as WPNIA.

#### **Views of respondents**

4.252 Most respondents agreed with ComReg's preliminary view as expressed in the Consultation. One of these respondents, while broadly agreeing, noted that in its view, alternative infrastructure providers offering end-to-end service had significantly contributed to the increase in retail broadband penetration. The respondent argued that UPC intends to upgrade its cable network such that cable broadband will become widely available throughout Ireland within the period of this review.

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<sup>92</sup> Page 34, Explanatory Note

<sup>93</sup> Page 31, Explanatory Note

- 4.253 One respondent who disagreed suggested that there is no reason why WPNIA couldn't be provided by cable or mobile operators within 2 or 3 years if the operator had the incentive or was obliged to do so. This respondent also took issue with ComReg's view of capacity constraints, suggesting that FWA, mobile, and cable providers do in fact have spare capacity. The respondent cited the FWA and mobile operator's bids for the NBS (which has a wholesale requirement) and UPC's planned network upgrade as reasons why it can be assumed that there is spare capacity.
- 4.254 The same respondent believes that it is false to define the market based on the question of what options are available for existing LLU customers. The market is characterised by a number of vertically integrated operators, all of whom have access to WPNIA and are able to expand.
- 4.255 The respondent proposes that, in light of its view that there are several well-financed, vertically integrated infrastructure-based operators that are providing competing broadband solutions to consumers, self supply by these and other competing broadband platforms should be considered as being within the same wholesale market as ULMP on Eircom's copper local loop. In the respondent's view, the WPNIA market should thus include cable, FWA and 3G broadband infrastructure self-provided and/or offered to third parties.

#### **ComReg's views and analysis**

- 4.256 In the Consultation, ComReg noted that there are currently very limited wholesale physical access products and services available on networks other than that of the incumbent, provided under regulation<sup>94</sup>. ComReg also sought additional input from operators in Ireland<sup>95</sup> regarding their likely responses to a SSNIP of WPNIA.
- 4.257 In considering cable networks, ComReg understands that it is not technically possible to provide physical access to cable networks in a way that would be considered to fall within the WPNIA market. For example, a cable operator could not allow a third party to install equipment in a hub and physically attach that equipment to the cable network for the purpose of providing a physical link to a select group of customers. This is because cable networks operate in a ring structure, with a large number of households connected to one cable link.
- 4.258 ComReg notes that one respondent indicated that, in its view, there is no reason why an operator using an alternative platform (citing cable or mobile) could not make a wholesale product available within 2 or 3 years, and the respondent provided an example from the UK of BT requesting wholesale access to Virgin Media's cable network.
- 4.259 It should be noted that the example from the UK concerns a virtual, bitstream type service, and not a WPNIA service. Further, in methodological

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<sup>94</sup> The Netherlands has some unbundled access to local fibre loops offered by OAOs, which OPTA considers accounts for 0.01% of the market (Cullen International "Commission comments on Dutch market analysis notifications" 17.12.08)

<sup>95</sup> Although mobile retail broadband is not considered to be a substitute for fixed retail broadband, and this should correctly exclude mobile from consideration at the wholesale level, in the interests of completeness, ComReg has considered the possibility of a mobile wholesale offer.

terms, an ability to make a product available within a 2 or 3 year time frame would be considered in the SMP analysis, but not in the market definition.<sup>96</sup> This is because an assessment of potential supply-side substitution concerns an ability to respond promptly (i.e. within one year) to a small but significant price increase, involving no additional significant costs, whereas potential entrants may need more time before starting to supply the market. The respondent's view would therefore be considered in the SMP analysis, as an example of potential competition, but not in the market definition.

4.260 ComReg is not aware of any wholesale physical service (as opposed to virtual) which is made available on other access networks such as fixed wireless or mobile. Based on ComReg's investigations and information provided by operators, it is not clear that a form of physical access is technically or commercially viable over alternative network infrastructure. Therefore it is unlikely that a mobile or fixed wireless operator would launch a WPNIA product within 12 months.

4.261 In the market definition, ComReg's assessment is that an operator would not be able to switch to purchase WPNIA from an alternative network operator because such a product, even if it were technically feasible, could not be developed and brought to the market within a reasonable timeframe.

*Should wholesale virtual access be considered part of the same product market as wholesale physical network infrastructure access?*

4.262 In the Consultation, ComReg considered whether a retail provider of broadband services based on WPNIA would switch to purchase non-physical access (for example, wholesale broadband access such as bitstream) in response to a SSNIP of WPNIA products. ComReg notes that currently, OAOs may use a mix of LLU and bitstream to deliver retail services. ComReg has explored the functional and cost characteristics of WPNIA compared with those of non-physical access in order to understand on what basis OAOs might switch from WPNIA to wholesale non-physical access.

4.263 From the perspective of the retail market, it is often possible to supply the same retail broadband services using unbundled local loop products and bitstream. However, an operator would typically see unbundled loops as offering greater control and flexibility over the retail offering. For example, an unbundled loop can be used to offer a broader range of retail products compared with Wholesale Broadband Access (WBA), including for example narrowband voice, and can also be used to offer a bitstream product. WBA can therefore be considered to be downstream from WPNIA.

4.264 WPNIA and WBA differ functionally, in that WPNIA provides greater scope for the differentiation of retail products compared with WBA, where the operator is more restricted by the incumbent's offering. To use currently available products as an illustration, by installing its own broadband equipment in an exchange, an operator can use the unbundled loop to offer services over

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<sup>96</sup> Commission Guidelines on market analysis and the assessment of SMP under the Community regulatory Framework for electronic communications networks and services, 2002/C 165/03 paragraph 38

alternative DSL standards that offer higher data speeds and lower contention than allowed by the incumbent's bitstream products.

4.265 ComReg has also considered the investment costs associated with using a physical access product compared with using a virtual access product. Physical access requires investment in infrastructure, along with access to associated services such as backhaul. Therefore the WPNIA product would typically appeal to operators that are confident that sufficient economies of scale can be achieved. This investment represents a sunk cost for operators, which would not be recovered if the operator were to switch back to a virtual access product.

4.266 Submissions provided by industry participants to ComReg suggest that, in the current market, the relative pricing of LLU against bitstream is a major factor for operators when deciding on how to reach retail customers.

4.267 ComReg's preliminary view was that an operator would not switch from purchasing wholesale physical access to purchasing wholesale virtual access in response to a SSNIP of physical access products, firstly because the functional characteristics of the products are not sufficiently similar, and secondly because the investment costs for physical access are significantly higher than those for virtual access, and these costs would not be recovered on exit from the market.

#### **Views of respondents**

4.268 Most respondents agreed that wholesale virtual access is not in the same product market as wholesale physical access. One of those respondents noted that, in its view, wholesale virtual access is not flexible, offers no quality of service control, is highly contended and is second rate. The respondent indicated that a physical access product is better for consumers, the economy, competition and investment in infrastructure. A physical access product can be controlled at a port level, access level and backhaul level, while a virtual access product offers none of this flexibility.

4.269 Another respondent which agreed that virtual and physical access were not in the same product market stated that, in its view, a physical access product allowed it to offer faster data rates (up to 24Mbit/s) and provided it with the ability for remote management of the network and the customer's equipment to aid customer provision and fault resolution.

4.270 A third respondent believes that virtual access restricts OAOs from developing new retail products and services, due to the lack of configuration control and pricing of the virtual product set. The respondent stated that virtual access on its own would not meet its requirements.

4.271 A fourth respondent, while agreeing with ComReg's conclusion, suggested that it is not appropriate to consider sunk costs in the analysis, because costs which were incurred in the past are not relevant to a forward-looking analysis.

4.272 Two respondents did not agree. The first of these proposed that the definition and analysis of the physical and virtual access markets are linked and should be carried out together. This respondent noted observation from the EC that, depending on the way market conditions evolve, the wholesale markets (ie WPNIA and WBA) may conceivably merge into one market. The respondent's perception of the strength of platform competition in Ireland indicates that the

markets are already, or soon will be, one. The respondent notes that some operators who have unbundled continue to use bitstream, and that in the respondent's view this indicates a high degree of substitutability. The respondent also cited two-way migration processes between bitstream and LLU, developed at the request of industry. The respondent proposed that ComReg's view of WPNIA as offering greater flexibility than WBA is incorrect, because the SMP operator is obliged to meet any reasonable request for a variation of a WBA product, and so OAOs have flexibility on request. Finally, the respondent believes that as NGA is deployed, the case for merging bitstream and LLU into a single product market will become even stronger.

- 4.273 The second respondent who did not agree that WPNIA and WBA are in separate product markets believes that there is sufficient evidence of demand side substitution to outweigh any limitations on supply side substitution.

### **ComReg's views and analysis**

- 4.274 ComReg's proposed differentiation between physical and virtual access was based on two key reasons. The first reason is that functional differences between the two types of product would render them in separate markets. The second reason is that investment costs associated with their implementation would mean that a purchaser would not consider them to be good demand substitutes.
- 4.275 ComReg notes that one respondent has suggested that the WPNIA market should have been analysed together with the WBA market, because they serve the same ultimate retail market, and because, in this respondent's view, the products are merging.
- 4.276 The respondent quoted guidance from the EC. However, ComReg notes that within the Explanatory Note, paragraph 2.5 recommends that the WPNIA market should be analysed first, while paragraph 4.2.2 recommends that the markets should be analysed together.
- 4.277 ComReg considered how best to approach the analysis in Ireland. The aim was to be able to capture both the obvious linkages between a potential WPNIA and WBA market in supplying the retail broadband market, while at the same time recognising that WPNIA products are used as inputs to WBA, so that there is a vertical relationship between the markets.
- 4.278 In order to reconcile these aims, ComReg issued a single data direction, which included detailed questions on the purchase and supply of both physical and non-physical inputs, and questions on the strategies which operators use to potentially switch between these types of product. Responses to this data direction informed ComReg's decision on how best to proceed with the market analysis. ComReg began by carrying out an assessment of the retail market, which is a common market addressed by both WPNIA and WBA. ComReg then began its analysis of the wholesale markets, and decided at this point that it was more appropriate, given the national circumstances prevailing in Ireland, to analyse the WPNIA and WBA markets sequentially. This is primarily to allow ComReg to eventually consider the market for virtual access after coming to a finding on the market for physical access. A decision not to analyse the markets sequentially would mean that the wholesale broadband access market would be

analysed in the presence of regulation established in the first round market review.

4.279 ComReg notes one respondent's view that the WPNIA and WBA markets may eventually merge, particularly through the deployment of NGA. Depending on how NGA is implemented, it is possible that the requirement for a regulated physical access option may diminish in favour of some form of enhanced virtual access option. However, in Ireland the physical and virtual access markets are currently distinct, and are likely to remain so for the lifetime of this review. One respondent indicated the trial of Active Line Access in the UK as an example of a product which appears to blur the boundaries between WPNIA and WBA. ComReg notes that this product is still being trialled, in a different jurisdiction, and ComReg is not aware of plans to trial a similar product in Ireland. It is difficult to see how the situation in Ireland could change from a position where there is not even a plan to trial a product, to one where the product is in the market and has been taken up to the extent that it would significantly change the market dynamics within the lifetime of this review. In ComReg's view, therefore, the physical and virtual access markets in Ireland are distinct, and are likely to remain so for the lifetime of this review.

4.280 The evidence which has been presented to ComReg indicates that, while purchasers may use either or both a wholesale physical access product and a wholesale virtual access product to offer a retail broadband service, they do not view the physical and the virtual products as substitutes. While ComReg agrees with the respondent who pointed out that already-incurred sunk costs should not be taken into account in the analysis, it is important to note that there are significant differences in investment associated with a physical access product and a virtual access product, and that this would affect an operator's decision-making.

4.281 ComReg's approach has been to begin the analysis by assessing a single overall retail broadband market, and then to consider in sequence the impact of regulated physical infrastructure-based access, then regulated (non-physical) network-based access, on any significant market power which is identified. ComReg notes that, in analysing the WPNIA market, the consideration of virtual access as a substitute is in terms of a potential commercially available product, not as a product mandated under another market analysis. ComReg believes that this is a practical approach which allows ComReg and respondents to consider first of all the extent to which physical access can address any competition problems in the retail broadband market, before then going on to consider whether there is a need for further non-physical infrastructure access. To have published a single end-to-end review covering WPNIA and WBA could be seen as prejudging the outcome of the WPNIA analysis when considering WBA, and ComReg has therefore preferred to approach the markets sequentially.

*Should self-supply of wholesale access be considered part of the same market?*

4.282 In the Consultation, ComReg considered whether self-supply of wholesale access should be considered as part of the WPNIA market. The issue of self-supply arises where a vertically integrated firm that currently supplies a product or service to its own retail arm would be likely to switch to supplying external



wholesale customers, given a small but significant price increase. If it is likely to switch to external supply, then its present self-supply should be considered part of the market. This is because, in this circumstance, the ability to switch supply may act as a constraint on the pricing of existing wholesale products.

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

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

- Where the operator already has spare capacity available which could be offered in the wholesale market. This means that the networks must be sufficiently rolled out and of sufficient capacity and coverage so as to comprise a viable alternative for wholesale customers.
- Where offering new or additional wholesale capacity does not incur significant investment costs, either in infrastructure or in services such as billing or account management.
- Where it is likely and probable that a vertically integrated operator would act in this way.
- Where a customer could switch relatively easily to purchase a new supplier's product or service, without incurring significant costs (for example, in connecting to the alternative suppliers' networks).

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

*rival firm's self provided inputs could be included in the same relevant wholesale market together with incumbent's wholesale offerings".<sup>97</sup>*

4.286 ComReg proposed that the reasoning above applies to self-supply in the WPNIA market. The incumbent's wholesale offerings would therefore form part of the market, as this meets the criteria established above. ComReg considered the extent to which any other operators would also meet the criteria.

4.287 In the case of all other network operators, ComReg considered that none of the criteria are met. Operators do not have existing spare capacity, and network coverage is limited. The provision of new or additional capacity would incur significant investment costs. It is not likely that a vertically-integrated alternative operator would choose to offer a wholesale product on a scale which would constrain the incumbent operator.

### **Views of respondents**

4.288 Five respondents agreed that Eircom's self-supply would form part of the WPNIA market, and that OAO self-supply would not. One of these respondents noted that it considers that the various LLU services form the input components to the incumbent's own downstream wholesale products such as bitstream and PSTN voice services. That is, for bitstream, WPNIA is an input component towards the creation of products in the WBA market. Another respondent suggested that OAOs would have to undertake significant investment to increase network reach and/or provide spare capacity in order to meet the self-supply criteria.

4.289 Two respondents proposed that all operators' self-supply should be considered to form part of the WPNIA market. In these respondents' views, platforms are becoming increasingly ubiquitous. One of these respondents believes that ComReg has no evidence for its view that cable, mobile and FWA operators do not have excess capacity.

### **ComReg's views and analysis**

4.290 ComReg notes that all respondents agree that Eircom's self-supply forms part of the WPNIA market. The issue to be addressed is therefore the extent to which other operators' networks could also be considered to form part of the WPNIA market. This issue is an examination of supply substitution, with a view to considering whether the self-supply of other operators should be included in the relevant market.

4.291 In its Data Directions, ComReg asked operators for information which could be used to assess the respondent's point on the need for evidence of a lack of excess capacity, and of the extent of network coverage.

4.292 One operator, responding to the Data Direction, corrected the Consultation statement regarding the extent of cable network coverage in Ireland. The respondent provided commercially confidential evidence that the reach of the

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<sup>97</sup> Martin Cave, Ulrich Stumpf and Tommaso Valletti, July 2006, "A review of certain markets included in the Commission's Recommendation on Relevant Markets subject to ex ante Regulation", available from: [http://ec.europa.eu/information\\_society/policy/ecomms/info\\_centre/documentation/studies\\_ext\\_consult/index\\_en.htm](http://ec.europa.eu/information_society/policy/ecomms/info_centre/documentation/studies_ext_consult/index_en.htm), p. 17.

cable network was not as extensive as implied in the Consultation, and that the total number of homes passed was significantly less than had been suggested.

4.293 On the issue of capacity, ComReg notes that several operators provided information in response to the Data Direction. One operator, for example, stated that their network had no additional capacity which could be made available in a wholesale merchant market, particularly as their focus was on ensuring that they could cope with growth in subscriber numbers, and improved quality of service for existing customers. This view was reflected in submissions from operators of different platforms.

4.294 ComReg has therefore collected further detailed information on both network coverage and on excess capacity, which confirms its conclusion that Eircom's self-supply would form part of the WPNIA market, but that self-supply by other operators would not.

#### *Analysis of indirect constraints*

4.295 In the Consultation, ComReg considered the extent to which a degree of competition in the downstream retail broadband market could act as an indirect constraint on Eircom's ability to act independently in the WPNIA market. The potential for retail competition to exert an indirect pricing constraint was taken into account in the competition analysis, where ComReg considered whether indirect pricing constraints would mitigate any market power.

#### **Views of respondents**

4.296 The last section on self-supply considered the extent to which other suppliers would be likely to enter the wholesale market in response to a SSNIP of WPNIA. One respondent proposed that ComReg should also consider within the market definition the ability of other operators to self-supply. That is, that ComReg should consider whether competition at the retail level from vertically integrated undertakings may be such as to exert an indirect constraint on the market for wholesale physical network infrastructure access services.

#### **ComReg's views and analysis**

4.297 The notion of indirect pricing constraints is that even when there are no close product substitutes in an upstream market, the price elasticity of demand can be high. This would be the case if it were shown that an increase in the wholesale price caused downstream customers to switch to another product, so that not only demand for the downstream product fell, but also demand for the wholesale input. In the case of WPNIA, the downstream products could include a range of retail products delivered over WPNIA, and could include a wholesale virtual access (e.g. bitstream) product.

4.298 ComReg notes that some other NRAs (notably Ofcom in its WBA market analysis) have considered sources of indirect constraint when defining wholesale markets. That is, they have considered indirect pricing constraints in the market definition exercise rather than in the competition analysis. Their reason for this is primarily a concern that there is a risk of market power being overstated if indirect constraints are not included in the relevant market. However, as the

European Commission has noted in its comments to Ofcom<sup>98</sup>, if weak constraints are automatically taken into account at the market definition stage, there is a risk of prejudging the SMP assessment, and of understating the real extent of market power at the wholesale level if the analysis includes self-supplied market shares for all vertically-integrated competitors, irrespective of whether they are actually constraining the market behaviour of the incumbent.

4.299 The Commission suggests that the strength of any constraint imposed by a vertically-integrated operator should be carefully estimated, and that it should be shown that, in response to a SSNIP:

- ISPs would be forced to pass a hypothetical wholesale price increase on to their consumers at the retail level based on the wholesale/retail price ratio;
- there would be sufficient demand substitution at the retail level to retail services based on indirect constraints such as to render the wholesale price increase unprofitable; and
- the customers of the ISPs would not switch to a significant extent to the retail arm of the integrated hypothetical monopolist, in particular if the latter does not raise its own retail prices.

4.300 ComReg has taken on board the respondent's comments, and has followed the European Commission's suggested methodology in considering the following:

- Would a downstream operator be forced to pass on any increase in the price of WPNIA, and if so, what proportion of increase would be passed on?

For the purpose of this analysis, ComReg considers it appropriate to use LLU as a relevant pricing point. The cost of LLU makes up approximately 30% of the total retail broadband price. This is based on the current LLU price of €16.43 and the average price paid by a consumer of €2.38 for broadband plus line rental.<sup>99</sup> Therefore, any increase in the WPNIA price would be diluted by a multiple of 0.3 when passed through to the retail level. As such, an increase in the price of WPNIA by 5-10%, if passed on to the retail customer, would amount to a 1.5 - 3% increase in the price of the downstream retail broadband product. ComReg therefore applies a SSNIP test based on the diluted (smaller) increase in the retail price.

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<sup>98</sup> UK/2007/0733: Wholesale Broadband Access in the UK : Comments pursuant to Article 7(3) of Directive 2002/21/EC1 14.02.08

<sup>99</sup> For the purpose of this assessment of indirect constraint posed by retail competition in the WPNIA market, ComReg considers it appropriate to apply the SSNIP to the total price of broadband including line rental. This is because consumers that switch to an alternative fixed platform for the provision of broadband it would most likely forego their existing line rental as well as the broadband product.

- Following a price increase of this order, would there be sufficient demand substitution at a retail level to render the wholesale price increase unprofitable?

In its assessment of the retail broadband market, ComReg proposed that all forms of retail broadband from fixed locations form part of the same product market because there are broadly common product characteristics and pricing across platforms. However, the test applied in determining indirect pricing constraints is different, because the SSNIP test is applied to the pricing of the wholesale input rather than the retail price. Therefore, while the SSNIP test was satisfied for cable and FWA networks in defining the retail market, there is likely to be less substitutability when the hypothetical price increase takes place in the WPNIA market. In analysing the indirect pricing constraints, ComReg has to consider whether there is likely to be sufficient cross-platform substitution in the retail market to render a wholesale price increase unprofitable in the wholesale market.

ComReg considers that only a small number of customers of retail broadband provided via LLU would switch to retail broadband provided over cable or FWA in response to a 1.5% - 3% in the price of retail broadband. The same elasticity applies as in a SSNIP test applied to retail prices, however the smaller price increase in this case (since it is diluted) means a lesser amount of customers will switch – If elasticity equals 1, then 30% of the customers that would switch under a retail market SSNIP would switch in response to a SSNIP of WPNIA. The retail price increase is so small that many customers would not bother switching away from DSL broadband. Further, ComReg notes that cable networks only have approximately 50% coverage, which would further reduce the number of customers that could actually switch to cable by half.

As such, ComReg considers that the ability of retail customers to switch to retail broadband provided on an alternative fixed platform would not prevent a hypothetical monopolist WPNIA provider from imposing a profitable SSNIP of WPNIA. As such, the indirect constraint posed by alternative platforms is not strong enough to justify their inclusion in the WPNIA market.

- Would retail customers of a vertically-integrated hypothetical monopolist be able to switch to the integrated operator's retail arm, particularly if it did not raise its retail prices?

In ComReg's view, if an integrated hypothetical monopolist raised its wholesale prices, but sustained its retail prices below that offered by wholesale purchasers, it would be able to gain retail customers from competitors which relied on the purchase of wholesale inputs. This would make a wholesale price increase profitable for the vertically-integrated operator, and would by and large mitigate any indirect constraint.

- 4.301 Overall, ComReg's view is that competition from other broadband platforms in the retail market may pose a limited degree of indirect pricing constraint on the WPNIA market, but not to the extent that justifies their inclusion in the market.

*Summary conclusion on product market definition*

ComReg has considered all views expressed in the responses to Consultation, and has carried out further research as described above, in order to re-examine the definition of the market for wholesale network infrastructure access.

**ComReg's conclusion is that the WPNIA market comprises wholesale physical network infrastructure access, including shared and fully unbundled access at a fixed location.**

An operator that currently owns FWA, cable or fibre infrastructure would not consider building new infrastructure as an alternative to investing in WPNIA, because of the time and costs involved.

It would not be possible for an operator to buy a WPNIA product on another operator's (other than the incumbent's) infrastructure. At present there are no such products available, nor an intention on the part of alternative network operators to launch such a product. Further, the time and costs involved in developing such a product means that it would not be likely to occur within a 12 month period.

Indirect pricing constraints have been considered within the market definition exercise and are not seen as sufficient to justify the inclusion of alternative platforms within the WPNIA market.

As such, ComReg considers that the WPNIA market does not include alternative network infrastructure.

ComReg's view is that the functions and investment requirements for WBA are sufficiently different to those associated with WPNIA, such that WBA is in a separate product market. It is ComReg's view that the incumbent's self-supply would form part of the WPNIA market.

Geographic Market Definition

- 4.302 Having defined the relevant WPNIA product market, ComReg is then required to consider the geographic boundaries of the relevant product markets. In the Consultation, ComReg considered whether the WPNIA market is national in scope, or whether there is evidence suggesting the existence of sub-national markets for WPNIA. This involved examining whether there are distinct supply and/or demand conditions associated with varied competitive pressures in different areas.

- 4.303 ComReg notes that there are no functional differences in the WPNIA products offered across Ireland. However, the roll-out of WPNIA has not been uniform across the country, and demand tends to be associated with areas of higher population density. This indicates variation in demand conditions, such that some areas are economically more attractive for unbundling access than

others. ComReg considered whether this variation would lead towards the definition of separate geographic markets. ComReg proposed that due to uncertainty around likely demand for WPNIA, it is not possible to clearly delineate separate geographic markets on the basis of varied demand.

4.304 In the Consultation, ComReg recognised that Eircom's WPNIA prices are currently set by regulation, and that there is a uniform price at a national level. It cannot be assumed that, absent regulation, a common price would be applied. However Eircom applies a uniform price throughout the country in the downstream retail broadband market, despite there being no regulation of regulation prices. OAO pricing in the retail broadband market, which again is not subject to regulation, is also uniform throughout the country. This suggests that it is not necessarily the case that an absence of price regulation in WPNIA would inevitably lead to geographical pricing differences.

4.305 ComReg's preliminary conclusion was that the relevant geographic market is national in scope.

#### *Views of respondents*

4.306 Five respondents agreed with ComReg's proposal that the WPNIA market is national in scope. Another respondent suggested that local markets should be considered, but that for practical purposes the market should be considered to be national.

4.307 Two respondents did not agree with the proposed national market. One of these noted that the population density varies across exchange locations, which means that, in the respondent's view, in some regions there is no business case for LLU. This respondent also proposed that loop length and copper characteristics vary dramatically on a national basis; that OAOs may want to target specific geographic regions; and that co-location may not be workable in some exchanges.

4.308 The other argued that there is strong evidence of different pricing constraints in urban and rural areas, and that ComReg should analyse these areas separately when evaluating the need for *ex ante* remedies. The same respondent also proposed that national pricing does not evidence a national market. In the respondent's view, pricing may be national for unrelated reasons, such as administrative simplicity, and competition varies significantly throughout Ireland. The respondent concluded that ComReg cannot on the one hand decide that there is one national market deserving of a full range of remedies, and on the other hand, in Document 08/56, propose cost-based LLU prices based on costs incurred within a sub-set of the market.

#### *ComReg's views and analysis*

4.309 In order to deepen its analysis of the geographic dimension of the WPNIA market, ComReg has carried out further research including the following:

- Issued and analysed responses to further Data Directions
- Reviewed policy guidelines, in particular from the EC and the ERG
- Reviewed the approaches of other NRAs

4.310 According to established EC case-law, and as stated in paragraph 56 of the SMP Guidelines<sup>100</sup>:

*the relevant geographic market comprises an area in which the undertakings concerned are involved in the supply and demand of the relevant products or services, in which area the conditions of competition are similar or sufficiently homogeneous and which can be distinguished from neighbouring areas in which the prevailing conditions of competition are appreciably different.*

4.311 Further, the Explanatory Note states that the network and scope of application of legal and other regulatory instruments:

*corresponds generally to the territory of the Member State concerned since the consideration centres on the scope of the potential SMP Operator's network and whether that potential SMP operator acts uniformly across its network area or whether it faces such different conditions of competition that its activity is constrained in some areas but not in others*<sup>101</sup>.

4.312 According to the Commission notice ([97/C 372/03](#)) on 'the definition of relevant market for the purposes of Community competition law', the market definition exercise consists of identifying the effective alternative sources of supply for the customers of the undertakings involved, in terms of both products/services (relevant product market) and geographic location of suppliers (relevant geographic market).

4.313 Therefore, as with the product market definition, the limits of a geographic market should be defined based on a demand-side and supply-side substitution analysis using the 'hypothetical monopolist test' to see whether undertakings in different areas constitute an actual alternative source of supply for consumers.

4.314 This test assesses whether the customers of the undertakings concerned would switch their orders to companies located elsewhere in the short term and at a negligible cost if there was a small but significant, lasting increase in the price (5-10%) of a given product or service, assuming that the prices of all other products or services remain constant ('relative price increase'). If they did, those 'outside companies' should be included in the scope of the relevant market.

4.315 The Commission's SMP Guidelines identify two criteria which have traditionally been used in the communications sector to determine the geographical scope of a relevant market:

- the area covered by a network; and
- the existence of legal and other regulatory instruments.

4.316 In addition, The European Regulators' Group (ERG) published a draft common position this year in order to provide further guidance on how to define geographic markets. The ERG proposed an approach to defining geographic markets. While the common position paper is only in draft form, ComReg

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<sup>100</sup> Commission guidelines (2002/C 165/03) on 'market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services'

<sup>101</sup> Page 12, Explanatory Note



considers that it is nevertheless a useful reference in defining the relevant geographic market.

4.317 The paper suggests that NRAs should first conduct a preliminary, forward-looking analysis of easily accessible criteria indicating whether competitive conditions justify national market definition or whether a more detailed geographic analysis is needed. The proposed preliminary analysis involves considering whether competitive conditions are sufficiently homogenous. Indicators of homogenous competitive conditions include where:

- alternative networks either have small coverage and market shares, or have (close to) national coverage with similar prices.
- Incumbent operator has uniform pricing and alternative operators have similar prices.

4.318 Conversely, the ERG suggests that the following indicators point to the need for a more detailed analysis:

- One or several alternative operators have significant but less than national coverage and exert a significant competitive constraint in the areas where they are present.
- The incumbent operator differentiates prices geographically or sets a national uniform price, and there are significant price differences between the incumbent operator and alternative operators where the latter are present.
- The next generation access (NGA) network roll-out of the incumbent operator (and possibly alternative operators) leads to geographic differences in competitive conditions within the area covered by the incumbent's network.

4.319 ComReg has considered the approach to geographic market definition taken by other European regulators. All other regulators have defined national markets in their analyses of Market 4, WPNIA.

4.320 The French Regulator, ARCEP, considered that the geographic scope of Market 4 is national even though retail broadband prices, product characteristics and market shares are not homogenous all over France, and vary depending on the size of the local exchange and the year LLU became available.

4.321 ARCEP identified three different geographic areas which may display different conditions of competition in the market: (i) the areas where several operators could offer a WBA product, corresponding to unbundled areas, (ii) the areas where only France Telecom can offer WBA, and (iii) the areas where no operator can offer WBA. ARCEP noted that the boundaries do not appear to be stable.

4.322 ARCEP considered that it is not possible to set a clear delineation of geographic variations. In addition, ARCEP noted that France Telecom operates a national strategy as regards pricing and products definition.

4.323 However, some NRAs have developed different approaches when considering Market 5 (wholesale broadband access), and ComReg has also reviewed these approaches to assess whether there are applicable lessons for its analysis of Market 4. For example, in its second round analysis of the wholesale broadband market (Market 5) the Austrian regulator, TKK, proposed in February 2008 to define a national market and designate Telekom Austria as having SMP but differentiate the remedies. In urban areas TKK would withdraw almost all existing remedies, whereas in rural areas TKK would maintain the existing remedies (see [EU Telecom Flash 32/2008](#)). The Commission accepted TKK's approach commenting that the geographic differentiation of remedies:

*may be appropriate in those situations where, for example, the boundary between areas where there are different competitive pressures is variable and likely to change over time, or where significant differences in competitive conditions are observed but the evidence may not be such as to justify the definition of sub-national markets.*

4.324 ComReg has carried out extensive further research on geographic markets, and has used this to inform its response to specific issues raised by respondents. In the following paragraphs ComReg works through the various arguments that have been raised by respondents on the matter of defining a geographic market for WPNIA.

4.325 ComReg considers that the geographic market definition defined for the purpose of the market review exercise needs to strike a balance between granularity and practicality, keeping in mind that market definition is a means to an end, rather than an end in itself.

4.326 ComReg has defined the relevant product market as including access to the copper loop, ducts, and fibre, but not including cable or wireless networks. Therefore, at the present time the WPNIA market is made up almost entirely of demand for and supply of local loop access (regulated local loop access products and Eircom's self-supplied equivalent). ComReg notes that Eircom's LLU product is offered on a national basis via Eircom's ubiquitous copper network.

#### **Are there different pricing constraints in urban and rural areas?**

4.327 ComReg disagrees with the assertion made by one respondent that different pricing constraints exist in the WPNIA product market between urban and rural areas. Based on the product market defined by ComReg, Eircom is the only provider of WPNIA, across both urban and rural areas. Whilst there is a concentration of alternative networks operating in some urban areas providing retail broadband products, ComReg has excluded those networks from the WPNIA market on the basis that they do not provide a material constraint in the WPNIA market.

4.328 WPNIA products are not available, nor are they likely to become available on alternative platforms such as FWA, mobile or cable networks over the period of this review (i.e. the next two to three years). Therefore there is no direct constraint on the WPNIA market arising from the existence of these alternative networks. As discussed in the product definition section ComReg considers that competition from those network operators in the retail broadband market is unlikely to constrain prices in the WPNIA market.

- 4.329 Accordingly, ComReg has found no evidence of different pricing constraints between urban and rural areas in the WPNIA market.
- 4.330 If ComReg considers the relevant market to be national in scope, then it would see no reason to apply differential treatment to rural and urban areas in the application of *ex ante* remedies, since the definition of a national market suggests that the potential competition problems are similar across Ireland, and therefore require similar remedies to address them.

#### **Pricing as an indicator of market boundaries**

- 4.331 ComReg agrees with the argument raised by one respondent that national pricing in the retail market does not necessarily imply a national WPNIA market. However, when considered alongside other factors, ComReg considers that the national pricing strategy employed across the industry at a retail level is suggestive of a national WPNIA market, and notes that operators also employ national marketing and advertising strategies.
- 4.332 For example, for there to be differentiated geographical markets, ComReg might expect a lower WPNIA price to prevail in a highly competitive area (i.e. an entrant may undercut the incumbent in its WPNIA pricing), which may be partly passed on to the retail market resulting in a reduction in retail broadband prices in that area. ComReg notes that there is no evidence of localised (or global for that matter) competition in the WPNIA market leading to geographically differentiated pricing in the WPNIA or retail broadband markets. As such, there is no basis upon which to define sub-national markets in terms of pricing.

#### **Does competition vary significantly throughout Ireland?**

- 4.333 One respondent argued that competition varies significantly throughout Ireland. As noted above, Eircom is the only provider of WPNIA across urban and rural areas, therefore there is no indication that competition in the WPNIA market varies significantly across Ireland. However, ComReg considers that there is likely to be some degree of variance.
- 4.334 Demand for WPNIA in a given geographic area will vary depending on the strength of the business case for infrastructure deployment in that area. As was noted by ComReg in the Consultation paper, the roll-out of LLU has not been uniform across the country, and demand tends to be associated with areas of higher population density. This indicates variation in demand conditions, such that some areas are economically more attractive for unbundling access than others. ComReg considered whether this variation would lead towards the definition of separate geographic markets. ComReg proposed that there is not sufficient certainty concerning areas where there may be higher demand for unbundled access, such that some areas could be said to constitute separate geographical markets.
- 4.335 ComReg considers that it is inappropriate to delineate geographic market boundaries based on a prediction of where WPNIA demand is likely to occur. Demand for WPNIA in a given geographic area will reflect decisions made by individual operators, each responding to commercial incentives and based on circumstances that are to some extent unique to that operator, and are often unpredictable. Defining a market on the basis of predictions about where demand

might occur would prejudge commercial decisions that should be made by individual operators.

- 4.336 Importantly, the common consideration which applies across all of Ireland is that it is highly unlikely that any operator would seek to replicate the existing access network in order to provide wholesale physical access to any significant degree.
- 4.337 In any case, ComReg notes that in practice the boundary of the market is confined naturally to geographic areas where demand exists i.e. the boundary of the market only becomes relevant when demand for WPNIA access occurs in a given area (for example, when an OAO requests access to unbundle an exchange). The conditions of competition will be similar throughout areas where demand does occur.
- 4.338 Similarly, approximately 10–15% of households in Ireland are not currently reached by broadband enabled lines. However, ComReg considers that if broadband becomes available in this geographic area, the conditions of competition will likely be similar to those prevailing in existing WPNIA network coverage areas. Therefore, ComReg considers it to be impractical and inappropriate to delineate a separate geographic market. Rather, ComReg considers it appropriate that the market definition be sufficiently flexible to accommodate areas in which WPNIA becomes available.
- 4.339 ComReg's view is consistent with the views held by all other NRAs, that it is not possible to set a clear delineation of geographic variations in the WPNIA market, and that a national WPNIA market is appropriate.
- 4.340 Overall, ComReg considers that there is no evidence to suggest that competition within the WPNIA market across Ireland varies to the extent that the delineation of sub-national markets would be justified. In particular, competitive conditions within the period of this review are likely to be similar in all areas where there is demand and supply for WPNIA.

#### **In some regions there is no business case for LLU**

- 4.341 One respondent submitted that ComReg cannot on one hand define a national market for WPNIA and on the other hand propose an LLU pricing methodology based on the assumption that demand for LLU would only occur on 70% of lines (LLU pricing consultation paper 08/56).
- 4.342 ComReg acknowledges that demand for LLU is not likely to extend across the entire fixed network within the period of this review. The proposal in the consultation referred to (and in respect of which no decision has been taken) is designed to reflect principles of cost recovery rather than market definition. ComReg considers it inappropriate to define a geographic market based on predictions of which exchanges are likely to support a business case for LLU. To omit more rural locations from the market would be to potentially exempt parts of the network from regulation even though similar competition problems exist. Further to the above section, ComReg considers that individual operators, rather than the regulator, are best placed to determine the commercial feasibility of unbundling a given exchange, and that it should not prejudge the commercial strategy of operators by excluding particular exchanges from the relevant market based on arbitrary measures such as population density. There is no clearly

distinguishable point at which LLU can be said to be viable as a general rule. Moreover, the boundary between areas where LLU would be viable and those areas where it would not be viable is not likely to be stable over time. For these reasons it is not possible (nor practical) to delineate sub-national markets based on a prediction about where demand will exist.

- 4.343 ComReg considers that the potential competition conditions which may arise are likely to be similar across all exchanges in which demand for WPNIA occurs.

#### **Technical reasons that may shape the geographic boundaries of the relevant markets**

- 4.344 Individual operators (including the incumbent) are better placed than ComReg to determine the technical capabilities of equipment in different geographic areas. Further, the technical capability of WPNIA networks is liable to change over time. It is therefore impractical for ComReg to attempt to exclude particular geographic areas (or lines) on the basis of technical network limitations. Delineation of geographic WPNIA markets on this basis is therefore unnecessary and unjustified.

#### **Treatment of the NBS area**

- 4.345 The Government has identified a specific region within which a commercial broadband market (retail or wholesale) has not yet emerged (covering 10-15% of Ireland), and has developed an initiative designed to deliver broadband to households and businesses in areas where it is not currently available.

- 4.346 Under the NBS scheme, a contract was tendered out to interested parties. The contract defines the services that should be provided by the winning bidder. The service includes the provision of retail broadband services in the NBS area, as well as the provision of a virtual wholesale product. The bids are assessed on the basis of price and non-price criteria. The winning party performs the contract.  
<sup>102</sup>

- 4.347 The effect of the NBS is to subsidise the provision of broadband to those areas that are not otherwise served by broadband networks, in order to ensure nationwide availability of affordable broadband.

- 4.348 The contract will not award exclusive rights for the provision of services in the area, but will award a subsidy for the provision of those services in that area.

- 4.349 Whilst the availability of retail broadband and WPNIA has expanded across Ireland in recent years, investment in the NBS geographic area has not appeared to be commercially justified to date. The subsidy awarded under the NBS contract is intended to advance the rollout of broadband in this area by providing the extra incentive needed to support the deployment of broadband infrastructure in the area.

- 4.350 The prices at a retail and wholesale level will be contractually linked to national prices. The retail price of the NBS product cannot be higher than the price for the equivalent mass market product, which is taken to be the price of

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<sup>102</sup> Hutchison 3G have recently been awarded "preferred supplier" status pending negotiation over the final contract.

Eircom's 1Mb product. Further, the NBS service provider cannot charge a higher retail price in the NBS area than it charges for equivalent retail products outside the NBS area. The Wholesale price is based on the retail price less the avoidable costs, with a requirement not to margin squeeze.

- 4.351 The establishment of the NBS contract will therefore lead to retail and wholesale pricing in the NBS area that reflects pricing in the non-NBS area.
- 4.352 The NBS contract does not prevent entry of other operators. As is the case throughout the non-NBS area, other operators may enter the market where a commercial incentive exists for them to do so. Therefore, the competitive conditions may not differ significantly.
- 4.353 The terms and requirements of the contract itself should constrain the winner from exerting SMP by, for example, raising prices, reducing quality or engaging in other exploitative or exclusionary behaviour within the NBS area.
- 4.354 The WPNIA analysis is not particularly affected by the outcome of the NBS award, because the NBS operator is not required to offer a physical access service in the NBS area.

*Summary conclusion on geographic market*

At the present time, the WPNIA market is made up almost entirely of demand for and supply of local loop access (regulated local loop access products or self-supplied equivalent).

Eircom is the only provider of WPNIA across urban and rural areas. Whilst there is a concentration of alternative networks operating in some urban areas providing retail broadband products, ComReg has excluded those networks from the WPNIA market on the basis that they do not provide a material constraint in the WPNIA market.

ComReg has found no evidence of different pricing constraints between urban and rural areas in the WPNIA market.

ComReg considers that the national pricing strategy employed across the industry at a retail level is suggestive of a national WPNIA market. For example, ComReg might expect a lower WPNIA price to prevail in a highly competitive area (i.e. an entrant may undercut the incumbent in its WPNIA pricing), which may be partly passed on to the retail market via a reduction in retail broadband prices in that area.

ComReg notes that there is no evidence of localised competition in the WPNIA market leading to geographically differentiated pricing in the WPNIA or retail broadband markets.

ComReg acknowledges that demand for, and the supply of WPNIA is likely to vary across the country, but in applying the market analysis methodology to the assessment of the geographic scope of the market, there is no reason to exclude particular geographic areas from the relevant market

ComReg considers that individual operators, rather than the regulator, are best placed to determine the commercial feasibility of unbundling a given exchange, and that it should not prejudge the commercial strategy of operators by excluding 'low population density' exchanges from the relevant market.

The WPNIA analysis is not particularly affected by the outcome of the NBS award, because the NBS operator is not required to offer a physical access service in the NBS area.

Overall, ComReg considers that there is no evidence to suggest that competition within the WPNIA market across Ireland varies to the extent that the delineation of sub-national markets would be justified. In particular, competitive conditions are likely to be similar in all areas where demand and supply for WPNIA occur (within the period of this review).

ComReg notes that its conclusions are consistent with those of the European Commission and with those of other NRAs.

**ComReg considers that the WPNIA market is national in scope.**

## 5 Competition and SMP Analysis

- 5.1 In the Consultation, ComReg noted that, having defined the scope of the relevant product and geographic markets, the next step is to determine if the relevant market is effectively competitive or if SMP exists.
- 5.2 The Community regulatory framework for electronic communications networks and services has aligned the concept of SMP with the competition law definition of dominance advanced by the European Court of Justice (“ECJ”) in *United Brands v. Commission*:<sup>103</sup>
- The dominant position thus referred to [by Article 82] relates to a position of economic strength enjoyed by an undertaking which enables it to prevent effective competition being maintained on the relevant market by affording it the power to behave to an appreciable extent independently of its competitors, customers and ultimately of its consumers.*
- 5.3 Article 14 of the Framework Directive<sup>104</sup> effectively mirrors this definition of dominance and equates SMP with:
- A position of economic strength affording it [the undertaking] the power to behave independently of competitors, customers and ultimately consumers.*
- 5.4 This is transposed by Regulation 25 of the Framework Regulations<sup>105</sup>. Regulation 27 of the Framework Regulations which implements Article 16 of the Framework Directive requires ComReg to conduct a market analysis in accordance (where appropriate) with an agreement with the Competition Authority, taking utmost account of the SMP Guidelines which are referred to in Article 15 of the Framework Directive.<sup>106</sup>
- 5.5 The European Commission’s SMP Guidelines focus on the competitive constraint imposed on an undertaking by existing and potential competition.<sup>107</sup> The EC

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<sup>103</sup> Case 27/76 *United Brands v Commission* [1978] ECR 207, paragraph 65.

<sup>104</sup> Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services, 7 March 2002

<sup>105</sup> S.I. No. 307/2003 European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003, as amended

<sup>106</sup> ComReg has deemed it appropriate to consult with the Competition Authority on this market review. ComReg has entered into a Cooperation Agreement with the Competition Authority further to Section 34 of the Competition Act 2002 for the purposes of Regulation 27 of S.I. No. 307/2003 European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003, as amended.

<sup>107</sup> Although an undertaking may not be subject to competitive constraints from existing competitors, potential competitors or large buyers, in markets subject to ex ante regulation an undertaking may still be restricted from profitably sustaining prices above, or reducing output below competitive levels by way of regulatory controls imposed by the NRA. Notwithstanding this, it is necessary to also consider the potential ability of the undertaking to exert market power in the absence of such ex ante regulation. To do otherwise might lead to a finding of non-dominance on the basis of regulatory remedies that would cease to exist following the review and in the absence of which the operator may be able to exert market power and possibly engage in anti-competitive behaviour. The purpose of the regulatory remedies is to mitigate the likely anti-competitive effects arising from a position of SMP. The key question is therefore how is the operator in question likely to behave if it were free from regulatory constraints and if the continued imposition of remedies is as such warranted.



stresses that the existence of a dominant position cannot be established on the sole basis of large market shares. Rather, the existence of a high market share indicates that the undertaking might be in a dominant position. The EC recommends that in the presence of a high market share, a number of criteria may be used as a guide to measuring the power of an undertaking to behave independent of competitors, customers, and consumers.<sup>108</sup> For the purpose of this market analysis, ComReg considered the following criteria to be particularly relevant in assessing the extent of Eircom's market power:

- Control of infrastructure not easily duplicated
- Absence of or low countervailing buying power
- Economies of scale
- Economies of scope,
- Product/services diversification (e.g. bundled products or services):
- Vertical integration
- Absence of potential competition
- Barriers to expansion

5.6 Other factors which could be used to indicate the market power of an operator have been considered, but are seen as less relevant in this market, for the reasons outlined below:

**Overall size of the undertaking:** In ComReg's view, the existence and ownership of an access network is of much greater significance in this market than the overall size of the undertaking operating that network. Undertakings seeking to enter or expand in the WPNIA market would need to be of a significant size.

**Technological advantages or superiority:** any advance made by one operator would be readily (from a technological point of view) be adopted by others. It is unlikely that technology would be used as a prime advantage – or indeed disadvantage.

**Easy or privileged access to capital markets/financial resources:** in considering access to capital markets, ComReg does not consider that there would be significant differences between operators' ability to access capital. Many operators in this market are part of large global enterprises, and would operate under similar constraints.

**A highly developed distribution and sales network:** The existence of a highly developed distribution and sales network would, in ComReg's view, be a secondary factor when considering economies of scope and scale, as the primary factors are to do with the existence of a network. The absence of a network renders the distribution and sales network aspect much less significant.

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<sup>108</sup> European Commission guidelines on market analysis and the assessment of significant market power under the community regulatory framework for electronic communications networks and services (2002/C 165/03) 11.7.2002

Product or services diversification: This is of relatively less importance in this market. Bundled offerings are not of great significance at the wholesale level.

- 5.7 In the Consultation, ComReg considered that the relative importance of each factor may vary from one analysis to the next as the market characteristics/dynamics change. Consequently, flexibility needs to be used in applying the above criteria. In addition, many of the above factors, while presented separately, may in fact be interrelated and all available evidence must be considered as a whole before a determination on SMP can be made.
- 5.8 This analysis went on to consider potential constraints on competition in the WPNIA market. The analysis considered firstly existing competition in the market, secondly potential competition, and finally an assessment of countervailing buyer power examined the impact of any strong buyers.

### **Existing Competition**

- 5.9 ComReg's analysis of existing competition in the WPNIA market considered three key elements. First of all, an examination of **market structure** identified the mechanics of supply and demand. Secondly, a review of **market shares** presented data and assessed trends. Thirdly, ComReg assessed whether any competitor is able to **act independently** of other competitors. The analysis was based on an examination of historical trends and a consideration of likely future developments in the market over the next two to three years.
- 5.10 The analysis below has been updated to take into account developments in the market over the period since the Consultation was published. As well as updating data, ComReg has carried out further analysis in response to issues raised by respondents.

### Supply

- 5.11 Eircom is currently the only supplier of WPNIA in Ireland.
- 5.12 ComReg has considered the extent to which potential changes in Eircom's access network over the next few years may modify conditions in the WPNIA market. The deployment of NGN networks could potentially change the structure of the local network architecture. For example, where fibre is rolled out to the street cabinet, the intermediate node at the MDF may cease to exist. This would in effect bypass the current connection point for WPNIA, and would pose both economic and technical difficulties for operators using WPNIA in its current form.
- 5.13 ComReg recognises the advantages of modernising networks, and welcomes the potential to offer new and innovative services to customers in a cost-effective way. However, ComReg's approach to the WPNIA market focuses on the need to ensure that OAOs have physical infrastructure access to wholesale inputs which will allow them to compete in the related retail markets, and this focus remains irrespective of changes in how Eircom structures or supplies its access network.

### Demand

- 5.14 WPNIA products and services are purchased by OAOs to enable them to offer a range of retail narrowband and broadband products and services. It is ComReg's view that WPNIA offers OAOs the opportunity to innovate, and to differentiate

their service offerings both in terms of product characteristics and price. This is because WPNIA allows OAOs to offer products and variants of products which are not necessarily offered by the incumbent.

- 5.15 Information supplied to ComReg in response to its data direction indicates that OAOs which are currently using WPNIA by unbundling local loops are typically using it to offer higher speed broadband than is offered by Eircom, and to offer a variety of bundles including narrowband voice, broadband internet, and TV.
- 5.16 At the end of September 2008, 20,770 local loops had been unbundled. This amounts to around 3.3% of all DSL lines in Ireland.<sup>109</sup> Shared lines account for around 19% of the total number of unbundled lines. This compares to a European average of around 23%.<sup>110</sup> This includes fully unbundled lines and shared lines. Typically an OAO may choose to use a shared line where the narrowband voice service remains with the incumbent, and may use a shared line as an intermediate step towards full unbundling. The level of unbundling remained fairly constant through 2007 and 2008.

#### Market Shares and Concentration Levels over Time

- 5.17 Market shares are not on their own determinative of SMP but are nonetheless a useful starting point for defining instances where SMP is more likely to arise. It is clear from EU jurisprudence and the SMP Guidelines that concerns about SMP are more likely to arise in instances where an undertaking holds a large market share over a period of time. According to established case law and the SMP Guidelines:  
<sup>111</sup>

*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.*

- 5.18 The European Court of Justice stated further in *AKZO*<sup>112</sup> that a market share of persistently above 50% could be considered to be very large so that in the absence of exceptional circumstances pointing the other way, an undertaking with such a market share could be considered to be dominant.
- 5.19 ComReg recognises that large market shares are not in themselves sufficient to form the basis of a finding of SMP and that other factors that may contribute to SMP must also be taken into account.
- 5.20 In order to quantify the market, ComReg issued a data direction to stakeholders in the broadband market in December 2007. In order to update information, a further data direction was issued in September 2008. This was supported by discussion with operators, and ComReg sought detailed information from current and potential suppliers and purchasers of WPNIA. As the first data direction was issued prior to

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<sup>109</sup> ComReg Quarterly Review, 08 Quarter 3, December 2008.

<sup>110</sup> CSFB: European First Tel Fact sheet- December 2007

<sup>111</sup> Case 85/76 Hoffmann-La Roche v Commission, [1979] ECR 461, [1979] 3 CMLR 211, para. 41; and the SMP Guidelines, paragraph 75.

<sup>112</sup> Case C-62/86 AKZO Chemie BV v Commission [1991] ECR I-3359, para. 60.

the market definition exercise, ComReg asked for information to be provided in such a manner as to facilitate various alternative potential definitions of the market.

5.21 ComReg's preliminary finding was that Eircom has 100% of the WPNIA market.

#### Ability to Act to an Appreciable Extent Independently of Existing Competitors

5.22 The previous section has established that Eircom has a market share of 100% in the WPNIA market. While this is very strongly indicative of dominance, ComReg has considered whether there may be factors in the market which qualify the market power suggested by the market share alone. This section examines the extent to which the supplier in the WPNIA market can act independently.

5.23 It is important to consider not only the current state of the market, but also the extent to which competitors are likely to be able to act independently over the lifetime of this review i.e. the next two to three years. It was ComReg's preliminary view that it is unlikely that there will be direct competition to Eircom in the WPNIA market over the lifetime of this review. OAOs are not likely to develop and make available a WPNIA product on their own networks.

5.24 However, it may be that a degree of competition in a downstream market could act as an indirect constraint on Eircom's ability to act independently in the WPNIA market. ComReg therefore considered whether there are indirect constraints arising from a downstream market which would qualify any market power in the WPNIA market.

5.25 In the Consultation, ComReg considered the notion of indirect pricing constraints within the competition analysis. Overall, ComReg's preliminary view was that there is evidence of some indirect pricing constraint from the retail level, but that it is not significant enough to constrain the WPNIA operator at a wholesale level.

5.26 ComReg's preliminary conclusions from analysing existing competition in the WPNIA market were that Eircom has a persistent market share of 100%, and that this is not likely to change over the lifetime of this review. While there is some indirect impact arising from a degree of competition from downstream markets, it is not sufficient to constrain the ability of Eircom to act independently.

#### **Potential Competition**

5.27 In assessing the possibility for existing and potential new entrants to act as a constraint on the undertaking alleged to have SMP over the period of this review, ComReg has analysed the nature and extent of any barriers to firms both entering and expanding in the relevant market. This section examines the barriers to entry to the WPNIA market. This includes a consideration of the potential impact of sunk costs, economies of scale and density, control of infrastructure, and organisational integration.

#### Barriers to Entry

5.28 Barriers to entry generally comprise any disadvantage that a new entrant faces when entering a market that incumbents do not currently face. According to the Explanatory Memorandum accompanying the Relevant Markets Recommendation:<sup>113</sup>

<sup>113</sup> Explanatory Memorandum to the Recommendation, p. 10.

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

#### *Sunk Costs*

5.29 The mere existence of sunk costs does not automatically imply that entry barriers are high. It is acknowledged that a certain level of sunk costs will be involved in entering most markets, and that the incumbent may also have had to pay a similar level of sunk cost before it entered the market. Notwithstanding this, the OECD's 2005 report on Barriers to Entry notes that in some circumstances it is more difficult for new entrants to break into a market than it was for the incumbent that was the first firm to enter and that:<sup>114</sup>

*When a market is already occupied by an incumbent potential entrants might face an entrenched brand or brands, as well as demand that is insufficient to permit efficient operation.*

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

5.31 Entry to, and expansion in, the WPNIA market would involve considerable sunk costs. Initial investment would be required in product development, equipment, trenches, duct and underground plant. While there may be some resale value, the majority of these costs are not likely to be recovered on any eventual exit from the market. ComReg notes that, in considering the effect of sunk costs, it is not necessary to assume that a market entrant would have to invest in an access network of the magnitude of Eircom's network. Considerable costs would need to be sunk in order to enter the WPNIA market even in a limited way.

5.32 ComReg's preliminary view was that sunk costs constitute a barrier to entry for any operator which does not already own an access network, and constitute a lesser but still significant barrier to entry for an operator which has an access network but not the elements required to offer a wholesale physical network infrastructure access product.

#### *Economies of Scale, Scope and Density*

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

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<sup>114</sup> OECD, Barriers to Entry, 6 March 2006 - DAF/COMP(2005)42

access services simultaneously. Economies of density refer to potential efficiencies associated with supplying customers who are geographically concentrated.

- 5.34 It is ComReg's view that the WPNIA market is characterised by economies of scale, scope and of density. Economies of scale are achieved from the point where connections from several premises share ducting in the connection to the MDF or equivalent. A large-scale supplier or prospective supplier of WPNIA would be able to achieve economies of scale in the connection infrastructure at the MDF, in the ducting, and in the supporting facilities needed to offer unbundled services (for example, product development, technical support, billing and so on).
- 5.35 ComReg has considered the Minimum Efficient Scale (MES) which would need to be achieved by a supplier of WPNIA, in order to be cost efficient or to minimise average costs. The MES has to be considered in light of the eventual retail market, because a purchaser of WPNIA would have a minimum number of retail customers, below which it would not be economic to offer service, and the wholesale supplier's offer would need to reflect this.
- 5.36 Economies of scope may be achieved by the supplier of WPNIA, which could use its access network to offer wholesale products such as WUA and WBA, and to offer its own retail products.
- 5.37 The ability to achieve scale and scope economies is linked to the importance which economies of density have on the WPNIA market. Again, this has to be considered in light of the eventual retail market, where the cost of supply per customer decreases in line with the number of customers supplied. The response to ComReg's data direction clearly indicated that WPNIA is most viable in areas which have high population density, and the pattern of LLU roll-out so far confirms this. This provides evidence of associated economies of density in the market. An entrant would have to achieve a significant market share to be competitive on cost, and this is indicative of economies of density
- 5.38 In considering the extent to which economies of scale, scope and density constitute barriers to entry, ComReg notes that there are high sunk costs associated with entry and expansion within the WPNIA market. This acts to exacerbate the effects of economies of scale, scope and density.

#### *Control of Infrastructure/Inputs Not Easily Replicated*

- 5.39 The SMP Guidelines note control of infrastructure not easily duplicated as a relevant criterion for assessing whether SMP exists. This may be relevant where, for example, access to a certain infrastructure is necessary to produce a particular product or service, the required infrastructure is exclusively or overwhelmingly under the control of a certain undertaking and there are high and non-transitory barriers associated with replacing the infrastructure in question.<sup>115</sup> According to the SMP Guidelines, it is not necessary for the infrastructure to be deemed "essential" within the meaning of EU competition law. Ownership of a significant

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<sup>115</sup> See Revised ERG Working Paper on the SMP concept for the new regulatory framework, ERG (03) 09 rev3, September 2005, available from: [http://erg.eu.int/doc/publications/public\\_hearing\\_concept\\_smp/erg\\_03\\_09rev3\\_smp\\_common\\_concept.pdf#search=%22ERG%20working%20paper%20SMP%22](http://erg.eu.int/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf#search=%22ERG%20working%20paper%20SMP%22), p. 5.

infrastructure may confer an absolute cost advantage on the incumbent and the cost and time involved in operators replicating the infrastructure in question may pose a significant barrier to entry. In addition, it may be possible for the owner of the infrastructure in question to leverage their market power into horizontally or vertically related markets.

- 5.40 In order for an operator to be able to compete with Eircom in the supply of WPNIA, it would need to establish an access network with the capacity to offer WPNIA, and would need to have the motivation to do so. In the Market Definition, ComReg's preliminary view was that the deployment of alternative infrastructure, such as direct fibre connection, or FWA, would not be considered as a substitute product for WPNIA. In considering the extent to which Eircom's control of infrastructure not easily replicated acts as a barrier to entry, ComReg has considered whether an operator's ability to invest in its own infrastructure and self-supply would constrain Eircom's behaviour in the market. The preliminary conclusion is that instances of investment in own infrastructure are examples of replication of Eircom's network, but that they are still limited in extent, and form a small part of the overall access market. Therefore, it is considered that Eircom has control of infrastructure which is not easily replicated, and that this constitutes a barrier to entry.

#### *Vertical Integration*

- 5.41 A vertically integrated operator can enjoy significant efficiencies arising from its presence in upstream and downstream markets. Such efficiencies can also be passed to consumers in the form of cheaper prices, lower transaction costs and/or enhanced product quality. However, vertical integration can also constitute an entry barrier where the presence of a firm at multiple levels of the production or distribution chain raises the costs of new entry (e.g. where prospective new entrants perceive the need to enter multiple markets simultaneously to pose a viable competitive constraint on the integrated operator) and/or increases the possibilities for the integrated operator to foreclose competition at one or more levels in the value chain.
- 5.42 A supplier of WPNIA needs to have a means of acquiring retail customers, and for an integrated operator, this would mean that it developed downstream capability such as its own retail operation. Eircom is a major provider of retail broadband, and so is in a strong position to consolidate its position in the WPNIA market.
- 5.43 A firm with market power in one market may also by virtue of its vertically integrated position be capable of leveraging that market power into related markets. For example, where the only or primary source of access for certain upstream inputs which are necessary for competing in downstream markets is via the vertically integrated operator, the potential for the integrated operator to leverage its control into downstream markets could act as a disincentive to new entry into those related markets and in turn reinforce entry barriers at the upstream level.
- 5.44 ComReg has considered the extent to which an integrated operator could leverage market power between the WPNIA market and the retail broadband market. Eircom is the primary source of wholesale inputs into retail broadband services, and has its own retail broadband operation. Absent regulation, there would be an

incentive for an integrated operator to apply a margin squeeze between wholesale costs and retail prices.

*Preliminary Conclusion*

5.45 In the Consultation, ComReg assessed the nature and extent of barriers to entry and expansion and the overall scope for competition in the WPNIA market. Its preliminary conclusion was that significant barriers exist primarily in the form of the need for sunk costs; economies of scale and density; control of infrastructure not easily replicated; and vertical integration. While ComReg has assessed the impact of the range of potential factors proposed by the EC, it has focused this analysis on the most significant barriers to entry and expansion. It is ComReg's view that these barriers are high and non-transitory, and therefore act as a deterrent to potential competitors. As such, potential competitors do not pose a significant constraint in the WPNIA market.

Countervailing Buyer Power

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

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

5.47 ComReg notes that, in Ireland, there are a small number of actual and potential buyers for WPNIA, and so individual buyers may well account for a significant proportion of total output. However, in the market for WPNIA, there is no alternative source of supply, and this reduces any potential countervailing buyer power which could exist. This is not expected to change over the lifetime of the review.

*Preliminary Conclusion*

5.48 ComReg assessed whether or not countervailing buyer power exists in the WPNIA market and its preliminary conclusion was that it does not exist to the extent which would qualify Eircom's market power.

Preliminary Conclusion on Competition Analysis

5.49 In the Consultation, ComReg summarised its overall preliminary conclusions as follows:

- Eircom has a market share of 100%, and this is unchanged since the last market review. This market share is based on the fact that only Eircom offers a wholesale physical network infrastructure access product, and it



is not likely that any other operator would have the ability or motivation to develop a competing product within the lifetime of this review. This situation is consistent across all jurisdictions.

- Existing competitors therefore do not pose a significant competitive constraint
- Barriers to entry are high and non-transitory
- Potential competition is negligible
- Countervailing buyer power is negligible.

5.50 Based on these conclusions, ComReg was of the preliminary view that Eircom has significant market power in the WPNIA market.

### **Views of respondents**

5.51 Six respondents agreed with ComReg's preliminary analysis of the WPNIA market presented in the Consultation. One of these, while expressing a view that potential competition was unlikely to exercise a competitive constraint over the next 2-3 years, suggested that ComReg's assessment of indirect pricing constraints should be reinforced.

5.52 Two respondents did not agree with ComReg's analysis. One of these respondents disagreed with the analysis because of the respondent's views that fixed and mobile are substitutes at both a retail and a wholesale level. ComReg notes that the issues raised around this have been addressed in the relevant section of the market definition. The other disagreeing respondent made the following arguments:

- OAOs have access to sufficient wholesale inputs, that is, their own self-supplied inputs, to create a competitive market;
- In Ireland, a range of broadband options are available over diverse transmission media, and competition is a "success story";
- There is sufficient excess capacity and technical capability for upgraded cable, 3G and FWA networks to offer physical wholesale access to third parties. Eircom has already lost any market power it had in urban areas, and will lose market power in rural areas during the period of this review;
- ComReg has underestimated the impact of indirect pricing constraints.

5.53 Overall, the respondent believes that the degree of inter-modal broadband competition in Ireland is an indication that the upstream market for network infrastructure access is effectively competitive.

### **ComReg's views and analysis**

5.54 ComReg notes that the basis for two of the respondents disagreeing with the market analysis is their disagreement with the market definition. ComReg has undertaken

extensive further research in order to fully assess points raised, and this is discussed in the Market Definition section of this paper.

- 5.55 ComReg fundamentally disagrees that the level of inter-platform competition indicates that the access market can be considered to be fully, or even prospectively, competitive. ComReg notes that its view is shared by all other European NRAs, by the European Commission, and by the European Regulators Group. No other European country has a wholesale physical network infrastructure access market which could be considered to be actually or indeed prospectively competitive.
- 5.56 Looking specifically at the situation in Ireland, ComReg welcomes the growth in retail broadband. However, the reason for the rapid growth rates is partly to do with the relatively late starting point. This also suggests that the simple extrapolation of (particularly) mobile retail broadband growth presented by one respondent may be misleading. One comparative study<sup>116</sup> of the retail broadband market noted that an initial rapid take-up of mobile broadband, like that seen in Ireland, is likely to be represent the sudden release of pent-up demand, rather than being indicative of a long-term trend. The study examined trends in two countries (Finland and Austria) with the strongest and longest-established retail mobile broadband markets, and noted that in both cases, an initial early growth in mobile broadband tapered off.
- 5.57 A recent analysis carried out by the EC<sup>117</sup> benchmarks broadband provision across Europe using a range of indicators, in order to provide a more comprehensive picture than would be achieved by simply using penetration rates. The aim of the exercise is not only to compare relative performance across countries (in terms of fixed line broadband penetration), but also to identify strengths and weaknesses as a support to policy-making, and to assess the relative propensity of countries to progress.
- 5.58 Ireland falls in the second to bottom cluster of countries. The report notes (on page ten) that:
- A fifth cluster groups Latvia, Hungary, Ireland and Estonia. The socio-economic context is more favourable in Ireland than in the other countries, but relatively high prices and low speeds limit its performance, possibly as a result of weak competition. Relatively high prices, low speeds and limited rural coverage hold back performance for the whole group.*
- 5.59 In ComReg's view, this comparative analysis does not show an Irish market characterised by vibrant competition.
- 5.60 ComReg has assessed further the extent of market power within the WPNIA market in line with the criteria set out by the European Commission for assessing market power. ComReg maintains the view that the relevant indicators for the purpose of this competition analysis are as follows:

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<sup>116</sup> Analysys Mason "Mobile Broadband: another substitution threat for fixed operators?" August 2008

<sup>117</sup> COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Future networks and the internet : Indexing Broadband Performance {COM(2008) 594} {SEC(2008) 2516} 29.09.08

- Control of infrastructure not easily duplicated
- Absence of or low countervailing buying power
- Economies of scale
- Economies of scope
- Product/services diversification (e.g. bundled products or services):
- Vertical integration
- Absence of potential competition
- Barriers to expansion

5.61 As noted previously, other factors are listed for consideration in the Commission Guidelines that may indicate market power, but are less relevant in this market. For the reasons described previously, ComReg maintains its view that the criteria not specifically noted above are not material in this market.

5.62 ComReg first addressed the issue of excess capacity and technical capabilities in the Market Definition section. In the Market Definition, the question was whether a wholesale product could be made available without significant investment and within a relatively short timeframe, so that such a product could be considered to fall within the WPNIA market. ComReg's conclusion in the Market Definition was that OAOs do not have excess capacity or the technical capability required to offer a wholesale physical network infrastructure access product and would not be able to develop this in a way which would define such a product within the WPNIA market.

5.63 In the Competition Analysis, ComReg has considered whether OAOs would be likely to develop the technical capability and excess capacity over a timeframe which may indicate that they pose a current or potential competitive threat to Eircom. The Competition Analysis therefore looks at the potential for OAOs to develop a wholesale offering over a longer timeframe than would be considered in the Market Definition. In ComReg's view, such a product would not be made available absent regulation, and ComReg notes that, as far as it is aware, no such product has been made available in any jurisdiction. This view is supported by responses to ComReg's data direction.

5.64 ComReg has revisited its analysis of the potential indirect pricing constraint in order to consider points raised by interested parties. As set out in the consultation, the notion of indirect pricing constraints is that even when there are no close product substitutes in an upstream market, the price elasticity of demand can be high. This would be the case if it were shown that an increase in the wholesale price caused downstream customers to switch to another product, so that not only demand for the downstream product fell, but also demand for the wholesale input. For example, indirect constraint could be imposed on WPNIA products by retail products available on alternative fixed platforms.

- 5.65 ComReg extended its analysis of potential indirect pricing constraints within the market definition section. ComReg is aware that there is a risk of prejudging the SMP assessment and understating the extent of market power at the wholesale level by undertaking the analysis of indirect pricing constraints within the market definition exercise. ComReg considers that indirect pricing constraints should also be considered within the competition analysis, the key concern being to identify the extent to which the behaviour of vertically integrated operators constrains the market behaviour of the incumbent.
- 5.66 The presence of vertically integrated operators does not in itself indicate an indirect pricing constraint. Rather the analysis needs to consider how competition in the retail market constrains the incumbent in the provision of WPNIA. In the Market Definition, ComReg's analysis indicates that indirect pricing is not sufficiently strong to include alternative fixed platforms in the WPNIA market. However, this does not preclude the existence of some degree of indirect constraint. In the Competition Analysis, the concern is to consider whether the degree or strength of the constraint would be sufficient to exert competitive pressure on the incumbent, and to what extent.
- 5.67 ComReg does not agree with one respondent's view of vibrant competition between platforms, and does not consider that this view reflects the reality in Ireland, nor indeed in any other jurisdiction. While it is a worthy aspiration to build a market based on infrastructure-based competition, it is not likely to be realised in Ireland within the lifetime of this review. In support of this view, ComReg notes that most if not all vertically-integrated operators in Ireland depend on the purchase of wholesale physical network infrastructure access products to augment their own network investment, and most do not see this changing over the next 3-5 years.
- 5.68 Having considered the arguments made by interested parties, ComReg remains of the view that:
- Eircom controls infrastructure that cannot be easily duplicated by another operator
  - The WPNIA market exhibits a negligible degree of countervailing buying power
  - Eircom benefits from economies of scale and scope not enjoyed by any other operator
  - As a vertically integrated operator, Eircom is in strong position to leverage market power between the WPNIA market and the retail broadband market.
  - Absence of potential competition
  - For the reasons listed above, high and non-transitory barriers to entry and expansion exist in the WPNIA market. These are primarily related to the sunk costs involved in duplicating Eircom's access network, and economies of scale and scope.

- Potential competitors therefore do not pose a significant constraint in the WPNIA market.

5.69 ComReg therefore concludes that indirect pricing constraints are not likely to be sufficiently strong to constrain the behaviour of the incumbent within the lifetime of this review, principally because platform competition is not nearly so well-developed as the respondent suggests.

#### ComReg's position

5.70 ComReg has carefully considered the views of all respondents, and has carried out further analysis based on their inputs. ComReg maintains its view that:

- Eircom currently has a market share of 100%. It is the only operator providing wholesale physical network infrastructure access, and this is not likely to change within the lifetime of this review.
- Existing competitors do not pose a significant competitive constraint
- Barriers to entry are high and non-transitory
- Potential competition is negligible
- Countervailing buyer power is negligible.

5.71 Based on these conclusions, and further to consultation with the Competition Authority, pursuant to Regulation 27(1) of the Framework Regulations, under a Co-operation Agreement between ComReg and the Competition Authority adopted pursuant to Section 34 of the Competition Act 2002, ComReg is of the view that Eircom has significant market power in the WPNIA market further to Regulation 27 (4) of the Framework Regulations.

#### **Designation of Undertakings with Significant Market Power**

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

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

**Eircom should be designated as having SMP in the market for Wholesale Physical Network Infrastructure Access.**

#### Views of respondents

5.74 Two respondents disagreed with ComReg's proposed SMP designation. The basis for their disagreement is their view that there is now, or soon will be, full and effective competition in the provision of broadband services from well-financed, vertically-integrated rivals.

- 5.75 All other respondents agreed with ComReg's proposed designation. One of these noted that, in its view, there is no alternative to a wholesale access network providing the same level of last mile and high bandwidth coverage.

#### ComReg's views and analysis

- 5.76 ComReg has carefully considered the views of all respondents, and has requested further information from industry, and carried out substantial further analysis following the publication of preliminary views in the Consultation. ComReg has demonstrated that there is not, nor will there be within the lifetime of this review, effective competition in the WPNIA market. ComReg therefore maintains its view that Eircom has SMP in the WPNIA market.

#### **Competition Problems**

- 5.77 ComReg is obliged to impose remedies, further to Regulation 27(2) and Regulation 27(4) of the Framework Regulations once it designates an undertaking with SMP. The remedies imposed must be based on the nature of the competition problems identified, and be proportionate and justified according to the circumstances.
- 5.78 The Consultation highlighted a number of potential competition concerns associated with the lack of effective competition that may arise in the relevant market. In view of the significant potential for such competition problems to arise, ComReg deems *ex ante* regulation to be appropriate to deal with competition concerns arising in the relevant market. The appropriateness and proportionality of the proposed remedies is further demonstrated by the Regulatory Impact Analysis carried out in this paper in accordance with the Ministerial Direction (issued by the Minister for Communications Marine & Natural Resources pursuant to section 13 of the Communications Regulation Act, 2002) published in February 2003.
- 5.79 It is important to note that it is not necessary for ComReg to point to examples of actual anti-competitive activity within the meaning of Article 82 of the Treaty and/or Section 5 of the Competition Act, 2002 that have occurred or are occurring. The finding of dominance indicates the potential for competition problems to arise, and this is sufficient to justify the imposition of *ex ante* regulation. In considering the form which *ex ante* regulation should take, ComReg nevertheless has been guided by experience in the market, in particular by the types of competition problem which continue to arise.
- 5.80 In determining what form of *ex ante* regulation is warranted in the relevant market, ComReg has carried out an assessment of potential competition problems that are likely to arise assuming SMP regulation is absent. In the absence of SMP regulation, a dominant undertaking has the potential ability and incentive to influence a range of competition parameters, including prices, innovation, output and the variety or quality of goods and services provided. Three broad types of competition problems may arise where an undertaking has SMP. These potential problems involve conduct by the SMP operator that is aimed at:
- exploiting customers by virtue of its SMP position;
  - leveraging its market power into adjacent vertically or horizontally related markets; and

- foreclosing or excluding competitors such as to protect its existing dominance on the market or markets in question.

5.81 Each type of problem was described in the Consultation, as follows.

#### Exploitative Practices

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

5.83 Examples of potentially exploitative behaviour by an SMP operator include:

**Denial of access** – this may be a constructive denial and not necessary an outright and categorical refusal to supply. Examples of these practices could include delaying tactics such as protracted negotiations for new entrants, discriminatory use or withholding of information, quality discrimination, strategic design, disproportionate entry criteria as well as unreasonable terms and conditions associated with access. For example, in the situation where OAOs may wish to co-locate in order to implement a wholesale physical access product, the SMP operator could reasonably be expected to plan for expansion of MDF space, power supply and so on, so that it is physically possible for co-location. A failure to do so could be considered as denial of access. An access obligation is required and justified in order to address this problem, alongside other remedies such as non discrimination, transparency, and price control to ensure that access is provided in an effective manner.

**Excessive Pricing** – According to EU competition case law, excessive pricing refers to a situation where the prices charged by a dominant undertaking are not closely equivalent to the value to the consumer and/or the cost of producing or providing the relevant service.<sup>118</sup> In line with established competition law practice, ComReg would have concerns about excessive pricing in markets where price levels are persistently high and there is no effective pressure (e.g. from new entry or innovation) to bring them down to competitive levels, nor is there likely to be over the time period of the review. ComReg suggests that, given the barriers to effective competition analysed earlier, and in the absence of SMP regulation, there would be an incentive for Eircom to price excessively. This would raise input costs to retail operators and ultimately raise prices to end-consumers.

In order to address the potential for excessive pricing, ComReg considers that *ex ante* regulation is generally required. Competition law applied on an *ex post* basis is often unsuitable in preventing excessive pricing, and this is evidenced by the scarcity of successful *ex post* excessive pricing cases within EC Jurisprudence. An

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<sup>118</sup> Case C 27/76 United Brands v. Commission, [1978] ECR 207, [1978] 1 CMLR 429. In United Brands the ECJ held that: "...charging a price which is excessive because it has no reasonable relation to the economic value of the product supplied... is an abuse".

*ex post* approach to excessive pricing does not offer adequate protection for consumers, as the effect on the market is often too late.

Eircom's wholesale prices in the WPNIA market are currently regulated. The methodology for setting the price level is under review, and the consultation is taking place in parallel with this market review. ComReg notes that the price for unbundled access in Ireland is amongst the highest in Europe, and this has a clear effect on wholesale demand, and eventually on the development of the retail broadband market. A price control and related cost accounting obligations are therefore justified in order to ensure appropriate prices are set.

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

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

This may limit the development of new technology and/or lead to costlier and less efficient methods of production and consequently higher prices for consumers than would otherwise exist under competitive market conditions. Such inefficiency could potentially be considered an abuse under competition law; Article 82 (2) (b) of the EC Treaty and Section 5 of the Competition Act 2002 specifically gives as an example of an abuse the limitation of production, markets or technical development to the prejudice of consumers. For example, in *Merci Convenzionali Porto di Genova v. Siderurgica Gabrielli*<sup>119</sup> the refusal of dock workers (who had a monopoly for the loading and discharging of cargo on behalf of third parties in the port of Genoa) to use modern technology for the unloading of vessels meant that operations were more expensive than they would otherwise be. This failure to use new technology was found to constitute an abuse.

As an existing SMP operator in the provision of WPNIA, there is no effective pressure (absent regulation) on Eircom to innovate and provide an efficient service. Therefore there is little incentive to implement product upgrades or process improvements in the WPNIA services. This could include, for example, the provision of efficient backhaul solutions, where OAOs may express demand for a product which is not addressed. Other examples of the types of competition problem associated with inefficiency or inertia which could arise in the WPNIA market would include cumbersome order management processes, or delays in providing required metrics. These types of inefficiency related problems delay OAOs in unbundling exchanges. ComReg considers these types of issues also arise in the WPNIA market. An access obligation is required and justified in order to address this problem, alongside other remedies such as non discrimination, transparency, and price control to ensure that access is provided in an effective manner.

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<sup>119</sup> Case C-179/90 [1991] ECR I-5889.



## Leveraging

### *Vertical Leveraging*

- 5.84 Vertical leveraging arises where a vertically integrated operator has dominance at one level in the production or distribution chain, e.g., the wholesale level, and can potentially transfer this market power into potentially competitive downstream retail markets. This would mean that a vertically integrated operator that is dominant in the WPNIA market may have the incentive to use this power to affect the competitive conditions in related retail markets, such as the market for retail broadband, or the markets for other services that use WPNIA products as an input (for example, the WBA market). Examples of vertical leveraging can include refusal to deal, certain tying practices, margin squeeze, cross subsidisation to facilitate predatory pricing type behaviour, practices aimed generally at raising rivals' costs<sup>120</sup>, etc. ComReg considers these types of issues also would arise in the WPNIA market.
- 5.85 ComReg's analysis has indicated that Eircom has a continuing high market share in the WPNIA market, and that there is a limited existence of other factors which would act to significantly dilute Eircom's potential market power within the timeframe of this review. ComReg therefore suggests that Eircom, as a vertically-integrated operator, would have the ability and incentive to leverage its market power in the absence of SMP obligations.
- 5.86 In assessing the potential for vertical leveraging, ComReg has to consider whether a vertically integrated operator offers a product or service to OAOs which is equivalent to the product or service offered to the vertically integrated operator's downstream operation. Because the operator is integrated, it may be difficult to compare products used internally with those offered in the merchant market, and may be difficult to compare how products are developed and implemented. There may therefore be the potential and the incentive for a number of non-price means of leveraging market power. A lack of transparency in how products and services are developed and implemented internally to the SMP operator could make it difficult to demonstrate equivalence.
- 5.87 Vertical leverage may also be apparent in the use of price. A number of industry participants have suggested that the high prevailing price of LLU products (and also the price relative to other types of wholesale input, such as Wholesale Broadband Access) prohibits operators from competing effectively with Eircom in the broadband retail market. This has contributed to the relatively low uptake of unbundled access in Ireland, and has limited the ability of unbundled operators to

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<sup>120</sup> Unlike predatory pricing, certain practices can be employed which unfairly raise a rival's costs and reduce competition and which do not necessarily require the SMP undertaking to incur short run losses. For example, an integrated firm with market power in an upstream market may have incentives to raise the price of the inputs it sells to its downstream rivals, thereby potentially raising their costs and reducing demand for their products. Furthermore, the integrated operator could potentially give priority to its own traffic at network bottlenecks or apply standards that are easier for its own retail affiliate to meet than for its downstream competitors. (See Krattenmaker, T.G. and S.C. Salop (1986) "Anticompetitive Exclusion: Raising Rival's Costs To Achieve Power over Price", Yale Law Journal, 96:209-93; Salop, S.C. and D.T. Scheffman (1987), "Cost-Raising Strategies", Journal of Industrial Economics, 36:19-34).

innovate and price-lead in the downstream market. ComReg is currently reviewing the unbundled access pricing methodology.

#### *Horizontal Leveraging*

- 5.88 Horizontal leveraging involves an undertaking which is dominant in one market using its market power to exert undue influence in other markets that are at the same level in the production or distribution chain. Examples of horizontal leveraging can include certain tying/bundling practices and cross subsidisation/predatory pricing type behaviour. ComReg considers that Eircom would have the ability and incentive to leverage its market power in the absence of SMP obligations.
- 5.89 These problems justify remedies relating to transparency, non discrimination, price control and accounting separation to prevent and/or identify instances of leveraging.

#### Exclusionary Practices

- 5.90 In addition to any potential leveraging into vertically or horizontally related markets, the operator may attempt to defend its existing SMP position in the relevant market(s) by engaging in predatory behaviour or conduct aimed at foreclosing the market(s) concerned. Examples of potentially predatory behaviour include predatory pricing, exclusionary actions aimed at raising customer switching costs, raising rivals' costs and so on.
- 5.91 Dominance in the WPNIA market could, absent regulation, potentially lead to exclusionary practices by Eircom as other operators seek to gain access to unbundled local loops.
- 5.92 For example, the SMP operator has an incentive to frustrate the process whereby retail customers can switch to an alternative product or an alternative provider. OAOs may wish to migrate retail customers between wholesale products, and may wish to carry out single or bulk migration of their customer base. This should involve minimal disruption or delay from the customer's perspective. Specific examples of the types of action which could disrupt the migration process could include requesting additional customer authorisation mechanisms, or preventing the uplift of a large number of retail customers to alternative service provision. This type of action would impose an additional and artificial switching cost on retail customers.
- 5.93 An SMP operator may attempt to foreclose entry of a competitor in the downstream market by denying access to an exchange, or by delaying the process unnecessarily.
- 5.94 An SMP operator may also act to foreclose WPNIA based competition by creating or exploiting information asymmetries. An example of this would be any differences in interface between the SMP operator's internal access to Information Technology (IT) systems, and OAO access. The infrastructure associated with Operational Support systems (OSS) and Business Support Systems (BSS) is supported by IT systems, which are continually evolving. OAOs do not have visibility or input into IT changes, and these changes have a potentially negative impact on development time and functionality, and on the efficiency of the wholesale product set. For instance, if OAOs are not aware of the IT development

process and its timetable, they will be unable to contribute or to make a request for service at the appropriate point. Further, it may be that operational changes of this kind are not implemented simultaneously or to the same standard for external and internal access.

- 5.95 Information asymmetries may also apply to future planning by the SMP operator. For example, the potential for Eircom to extend the fibre core network to the cabinet and launch new higher specification products has significant implications for operators considering WPNIA. A perceived lack of information propagates uncertainty, and as a result may discourage OAOs from deploying infrastructure in Eircom exchanges. Further, such information asymmetries lead inevitably to the SMP operator planning network development based on its own retail requirements rather than considering wholesale OAO requirements.
- 5.96 An SMP operator providing WPNIA to its competitors may have an incentive to impose additional costs on those operators. For example, wholesale customers require metrics on order processing, service assurance and activation faults, which allow OAOs to view the overall performance of Eircom's LLU product from a provisioning and service assurance perspective. Failure by Eircom to provide such data to its wholesale customers would place the burden on its individual customers to prove activation faults and measure deficiencies in the LLU product, which imposes a cost on those operators (individual operators are not best placed to collect performance metrics on Eircom's LLU product). This would also create uncertainty for LLU operators, and reduce confidence in Eircom's product.
- 5.97 Another example would be where the SMP operator requires unbundled OAO(s) to purchase a service, which comes at a considerable cost to OAO(s), whilst not requiring its own retail arm to use this service. The imposition of additional costs effectively raises rivals' costs, and so reduces the ability of OAOs to compete with Eircom in the retail broadband market.
- 5.98 These problems justify remedies of access transparency price control and cost accounting systems and accounting separation.

#### Preliminary Conclusion on competition problems

- 5.99 In summary, ComReg's preliminary view was that there is the potential and incentive for an SMP operator to engage in actions which inhibit competition in the WPNIA market. ComReg has provided some examples of competition problems, but notes that it is not necessary to catalogue examples of actual abuse. Rather, ComReg notes that the purpose of *ex ante* regulation is to prevent the possibility of such abuses.

#### Views of respondents

- 5.100 One respondent stated that it disagreed with ComReg's assessment because it does not agree with the market definition. A second respondent stated ComReg had listed potential, hypothetical and ambiguously identified anti-competitive practices. This respondent suggests that ComReg lacks actual examples of anti-competitive behaviour, and in the respondent's view, if there were any concerns about pricing, the respondent would expect them to be dealt with in the consultation on LLU pricing methodologies. If there were service provisioning concerns, the respondent stated it would expect that wholesale customers would

follow established procedures. The respondent believes further that all anti-competitive behaviour identified by ComReg is already prohibited under EC and Irish competition law, and that this has been the enforcement mechanism of choice in other jurisdictions.

- 5.101 Six respondents agreed with ComReg's analysis of competition problems. One of these respondents, describing its view of the "difficult and slow" development of the LLU market, provided examples of behaviour perceived as discriminatory between Eircom's treatment of this OAO, and Eircom's treatment of its own retail operation. Another indicated that public domain documents available on ComReg's website have summarised competition problems in the WPNIA market over some years. The respondent's view is that, although some progress was made on improving the product specification during 2007, this required the direct intervention of ComReg. This respondent listed examples of competition problems it had experienced.
- 5.102 Another respondent who agreed with ComReg's analysis described specific examples of difficulties encountered in implementing its LLU programme, and noted that these difficulties have been well-documented through meetings with Eircom and ComReg. In this respondent's view it is essential that Eircom should comply with the spirit of the law as well as with the letter.

#### **ComReg's views and analysis**

- 5.103 ComReg's approach in analysing competition problems starts with a finding of SMP, which in itself indicates the potential for competition problems to arise.
- 5.104 ComReg's analysis is forward-looking, and must take into account potential developments in the market. It cannot therefore be restricted to consider past difficulties but must also take into account the potential for future problems. This is necessarily prospective and forward looking, but, in ComReg's view, the consideration of even potential competition problems is firmly grounded in actual experience in the market.
- 5.105 ComReg notes that the discussion of competition problems in the Consultation did in fact make extensive reference to the types of problem which occur in the WPNIA market, ComReg notes further that its views were supported by six respondents to the Consultation, all of which are OAOs and most of which provided detailed examples of actual competition problems experienced in the WPNIA market. This directly contradicts the respondent's view that existing mechanisms ensure the swift resolution of all issues arising in the provision of WPNIA services.
- 5.106 In response to one respondent's view that *ex post* competition law would be sufficient to address any anti-competitive behaviour in the WPNIA market, ComReg firmly disagrees. Competition law is *ex post* in its application. It therefore must wait until the harm has occurred before action can be taken. The European Commission is of the view that the WPNIA market is a market suitable for *ex ante* regulation and where competition law alone is not sufficient to address problems in the market. It is for this reason that WPNIA is one of the European Commission's Recommended Markets for *ex ante* review.

## 6 Regulatory Impact Assessment

- 6.1 Regulatory Impact Assessment (RIA) is an analysis of the likely effect of proposed new regulation or regulatory change. The RIA should help identify regulatory options, and should establish whether proposed regulation is likely to have the desired impact. The RIA is a structured approach to the development of policy, and analyses the impact of regulatory options on different stakeholders.
- 6.2 ComReg's approach to RIA is set out in the Guidelines published in August 2007.<sup>121</sup> This approach was developed taking into account the Government's Better Regulation programme.<sup>122</sup> ComReg's overall aim in conducting a RIA is to ensure that all proposed measures are appropriate, proportionate and justified.

### Principles in Selecting Remedies

- 6.3 In choosing remedies pursuant to Regulation 9(6) of the Access Regulations ComReg must ensure they are:
- based on the nature of the problem identified;
  - proportionate and justified in the light of the objectives laid down in section 12 of the Communications Regulation Act of 2002; and
  - only imposed following consultation in accordance with Regulations 19 and 20 of the Framework Regulations.
- 6.4 The relevant objectives, as set out in section 12 of the Communications Regulation Act, 2002 which must be taken into account when applying remedies are as follows:
- to promote competition;
  - to contribute to the development of the internal market; and
  - to promote the interests of users within the Community.
- 6.5 ComReg's principal objective is to ensure that the operation of the WPNIA market provides optimum encouragement for the development of competition in the retail broadband market. To this end, ComReg aims to ensure that a dominant operator is prevented from the potential exploitation of its market power in the WPNIA market, as this would impact on the wholesale market and on the downstream retail markets which depend on WPNIA as an input.
- 6.6 ComReg notes that this is a second round market review, and that regulatory remedies were put in place following the last market review. While the market analysis has considered the market definition absent regulation, the assessment of regulatory impact should, in ComReg's view, predominantly take into account the fact that the market currently operates in the presence of regulation. ComReg notes

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<sup>121</sup> "Guidelines on ComReg's Approach to Regulatory Impact Assessment" ComReg doc 07/56a, 10 August 2007

<sup>122</sup> Regulating Better, Department of the Taoiseach, January 2004

that the first round market review defined a market for Wholesale Unbundled Access, while this review defines a market for Wholesale Physical Network Infrastructure Access. The current review therefore addresses a broader market, as its technology neutral approach includes, but is not limited to, unbundled access. In undertaking the RIA, ComReg notes that first round review defined a market which is included within the WPNIA market. The RIA therefore considers regulation applied to the part of the WPNIA market which was defined as WUA, and considers how remedies may best address the broader WPNIA market.

6.7 In line with the approach outlined in the Government's White Paper<sup>123</sup>, ComReg considers that, in a market which is already regulated, the focus should be on answering the following:

- Is regulation still necessary in this market?
- Does current regulation achieve objectives as simply as possible?
- Are changes to regulation required?

6.8 In order to assess the efficacy of existing regulation, and to consider prospective regulation, ComReg included specific questions on this topic in its data direction, and received useful feedback from industry. As this consultation took place at an early stage of the review, it has allowed ComReg to take account of industry views as part of the process of analysing regulation in the WPNIA market. Responses to the data direction have provided a valuable input when considering regulatory options.

#### **Is regulation required in the WPNIA market?<sup>124</sup>**

6.9 The last review of the market for Wholesale Unbundled Access imposed a full suite of obligations on the SMP operator. The market analysis indicated that Eircom had a 100% market share, and that this was not appreciably qualified by any other factors in the market. A range of actual and potential competition problems were identified, and in order to address these, remedies were proposed.

6.10 In considering whether regulation is still required in the WPNIA market, ComReg notes that the broad dynamic of the market is relatively unchanged since the time of the last review. Eircom has a 100% share of the WPNIA market, and this is not likely to change within the lifetime of this review. Barriers to entry remain high and non-transitory. The Consultation came to a preliminary view that Eircom has SMP, and therefore ComReg was obliged to impose some regulation.

6.11 ComReg's analysis of the retail market indicates increasing competition. In the last few years, the overall market for retail broadband has grown strongly. Retail

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<sup>123</sup> Regulating Better, Department of the Taoiseach, January 2004

<sup>124</sup> It can be noted that Eircom's current legal obligations, arising from its position of SMP, imposed following the review of a broadly similar market of (Wholesale unbundled access (including shared access) to metallic loops and sub-loops (Document No. 04/70, Decision No. D8/04) include obligations of Transparency, Non-Discrimination, Access and relating to price controls and accounting separation.

broadband is now available on various platforms (for example, cable, FWA, DSL). Retail customers have choices regarding the level of service, quality of service, and type of tariff. However, this is still conditional on location, and there remains strong geographical variation. This has been recognised by the Government's National Broadband Scheme.

- 6.12 This market review is concerned with the wholesale inputs required to address the retail broadband market. The market definition questioned whether operators wishing to address the retail broadband market could choose to build their own infrastructure. So, for example, FWA and cable operators have invested in infrastructure which allows them to offer a range of retail products, including retail broadband. However, these networks are still limited in terms of the areas they cover, and this is reflected in the relatively low retail market shares. The market definition also noted that wholesale physical access products are not currently available on alternative networks such as cable, fibre, mobile or FWA, and operators do not have the option of purchasing wholesale inputs from an operator other than Eircom. Operators are therefore still dependent on wholesale inputs from Eircom to reach a mass customer base. This means that competition in the retail market depends on the availability of an appropriate wholesale input.
- 6.13 ComReg therefore proposes that the need for a WPNIA product is established, and that it is an essential input for OAOs to compete in the retail broadband market. In ComReg's view, it is very unlikely that a WPNIA product would be offered without regulation. The direct benefit of having a WPNIA product is that OAOs are more able to compete in the retail broadband market, and that this then has a positive impact on consumer services, and on the prices for those services.

**Does current regulation achieve its objectives as simply as possible?**

- 6.14 In the Consultation, ComReg noted that its approach is to consider regulation as incremental. The lightest measure is the obligation of Transparency<sup>125</sup>. Should this be insufficient to address competition problems on its own, ComReg may apply a Non-Discrimination obligation<sup>126</sup>. If this is still not sufficient, ComReg may next consider the imposition of an Access obligation<sup>127</sup>, generally supported by accounting separation obligations<sup>128</sup>. The final measure to be considered is the imposition of price controls and cost accounting.<sup>129</sup>
- 6.15 At present, the unbundled access element of the WPNIA market is regulated. In considering the extent to which current regulation achieves its objectives as simply as possible, ComReg has to balance the need to minimise the burden on Eircom against the requirement for fit-for-purpose WPNIA products as inputs to the retail broadband market.

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<sup>125</sup> Regulation 10 of the Access Regulations

<sup>126</sup> Regulation 11 of the Access Regulations

<sup>127</sup> Regulation 13 of the Access Regulations

<sup>128</sup> Regulation 12 of the Access Regulations

<sup>129</sup> Regulation 14 of the Access Regulations

- 6.16 In the Consultation, ComReg began by considering whether a transparency obligation would be sufficient to address competition problems. A transparency obligation ensures that all operators and ComReg can observe price and non-price terms in the market. It provides, for example, that Eircom can be obliged to publish a Reference Offer for the products offered in the WPNIA market, and can be obliged to publish supporting industry documentation. ComReg's initial view is that a transparency obligation is necessary, but on its own is not sufficient.
- 6.17 ComReg considers whether an obligation not to discriminate would be sufficient in the WPNIA market. A non-discrimination obligation would oblige Eircom to supply products and services of an equivalent quality to all operators, including to its own internal operation. ComReg proposes that this obligation is necessary but not sufficient together with Transparency, given the types and range of competition problems in the market.
- 6.18 A non-discrimination obligation establishes a form of behaviour in the market, but does not address what type of product or service should be offered, nor how it should be offered. Recourse to a non-discrimination obligation tends to be on an *ex post* basis, so that an operator alleges a breach after the event. ComReg's review of competition problems indicated actual and potential issues which could be addressed by a non-discrimination obligation, but often there was an underlying problem at a more fundamental level, to do with the nature of the product being offered. While a non-discrimination obligation would be a necessary supporting obligation to address this, it would not be adequate on its own.
- 6.19 The obligation not to discriminate requires equivalent treatment of operators, and the transparency obligation allows the means of observing this. However in considering the obligation not to discriminate and the transparency obligation together, ComReg had a preliminary view that the operation of current regulation is not adequate in providing a means of ensuring that Eircom does not discriminate between OAOs and its internal operation, and is not adequate in ensuring that this can be demonstrated. ComReg proposed that there is a need for better measures of performance in the products and processes which Eircom offers to OAOs and uses internally, and in the production of information about these measures. This requirement cannot be met solely by the lighter regulatory options.
- 6.20 As non-discrimination and transparency are considered necessary, but not sufficient on their own, the next level of regulation considered is the imposition of an access obligation. Taken together, access obligations ensure that operators have the right to access wholesale products, and to implement them, and that access is provided in a manner which is fair, reasonable and timely, and to a standard equivalent to that provided to Eircom's retail arm.
- 6.21 ComReg noted earlier that, in its view, it would be unlikely that a WPNIA product would be offered absent regulation. An access obligation gives operators the right to request WPNIA products, and establishes the principles setting the terms on which the products should be made available. In ComReg's view, an access obligation is a fundamental requirement in this market, and experience in the market confirms the need for an obligation of this kind.
- 6.22 Pursuant to Regulation 13(1), ComReg may impose access obligations where it considers that the denial of such access or the imposition by operators of unreasonable terms and conditions having a similar effect:



- (a) would hinder the emergence of a sustainable competitive market at the retail level,
- (b) would not be in the interests of end-users, or
- (c) would otherwise hinder the achievement of the objectives set out in section 12 of the Act of 2002.

6.23 Pursuant to Regulation 13(4), when considering whether to impose obligations referred to in paragraphs (1) and (2) and, in particular, when assessing whether such obligations would be proportionate to the objectives set out in section 12 of the Act of 2002 ComReg took into account in particular the following factors:

- (a) the technical and economic viability of using or installing competing facilities, in the light of the rate of market development, taking into account the nature and type of interconnection and access involved;
- (b) the feasibility of providing the access proposed, in relation to the capacity available;
- (c) the initial investment by the facility owner, bearing in mind the risks involved in making the investment;
- (d) the need to safeguard competition in the long-term;
- (e) where appropriate, any relevant intellectual property rights; and
- (f) the provision of pan-European services.

6.24 In reviewing the operation of current regulation, in the Consultation, ComReg identified elements of the current access obligation which require development. The access obligation needs to be updated to reflect technological changes in the market, primarily the introduction of a technology-neutral definition which moves away from a restricted application to the metallic path. Also, the access obligation needs to better consider how the products and performance of products can be established, with a view to demonstrating that the products are fit-for-purpose, and that there is no discrimination. In ComReg's view, this means that competition problems around the constitution and implementation of Service Level Agreements (SLAs) must be addressed.

6.25 The most onerous form of regulation is the imposition of price controls. Currently, Eircom is obliged to ensure that prices for WPNIA products are cost-oriented. This is implemented at present by means of a price control. ComReg has considered whether it is still necessary to ensure that prices for WPNIA products are cost-oriented, and whether this should be ensured via price controls. Given Eircom's 100% market share<sup>130</sup>, and ComReg's preliminary view that there is limited constraint offered by qualifying factors (such as potential competition and countervailing power), there is no identifiable constraint on Eircom's pricing. As a vertically integrated operator, Eircom would have the ability and motive to increase prices absent regulation. This would be the case even if other obligations such as non-discrimination, transparency and access were in place.

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<sup>130</sup> Eircom is the only operator offering WPNIA and this is unlikely to change during the lifetime of this review.

- 6.26 Pursuant to Regulation 14 (1) ComReg considers that the market analysis indicates that a lack of effective competition means that Eircom might sustain prices at an excessively high level, or apply a price squeeze to the detriment of end-users. Pursuant to Regulation 14(2), ComReg takes into account any relevant investment made by Eircom in electronic communications networks or services or associated facilities to allow Eircom a reasonable rate of return on adequate capital employed, taking into account the risks involved. Pursuant to Regulation 14(3), ComReg seeks to ensure that any cost recovery mechanism or pricing methodology that it imposes serves to promote efficiency and sustainable competition and maximise consumer benefits.
- 6.27 In the Consultation, it was ComReg's view that the imposition of cost-based price controls in the wholesale market are essential to ensure that the SMP operator does not charge a monopoly price, which would have a negative effect on the wholesale and the associated retail markets. ComReg has reviewed experiences in more mature markets where WPNIA is longer established than it is in Ireland, and notes that in no case has the regulator been able to withdraw price controls.
- 6.28 ComReg has considered the extent to which NGA-based WPNIA prices should be subject to price control, given the uncertainty surrounding the cost base of new services, and given ComReg's intention to support investment in infrastructure. ComReg suggested in the Consultation that it may be appropriate to forbear from imposing price controls where WPNIA services are provided in an NGN environment in certain specified circumstances.
- 6.29 In considering the extent to which current regulation is effective, ComReg notes that separate detailed consultations into the methodology for pricing LLU and line share are underway, and will be published in parallel to this market review. For the purposes of this market analysis, ComReg considers that there remains a requirement to ensure that prices are cost-oriented. ComReg has also considered the potential for a margin squeeze, and proposes that this should be addressed specifically as a remedy.
- 6.30 Currently, Eircom is obliged to comply with requirements regarding separated accounts and cost accounting. These are considered necessary to ensure appropriate cost recovery mechanisms, and to monitor any price controls. In order to demonstrate the cost orientation of a service or product, it is necessary for Eircom to establish cost accounting systems that capture, identify, value and attribute relevant costs in accordance with agreed regulatory accounting principles.

### **Are changes to regulation required?**

- 6.31 Based on the review of competition problems and of the effectiveness of current regulation, ComReg proposed in the Consultation that regulation is still required in the WPNIA market, and that a full suite of remedies are needed. In the sections above, ComReg has indicated areas where it is proposed that current regulation needs to be developed. This may be because current regulation is not sufficiently effective, or to take account of changes in the market.
- 6.32 In the Consultation, the key changes to current regulation which were proposed were as follows:

### Access obligation

- Extension of the access remedy to take account of the revised market definition. The principle which should be established is that the approach is technology neutral, and is not confined to the current technology or product set.
- Extension of the obligation that services should be provided on terms and conditions which are fair, reasonable and timely to include the development of Key Performance Indicators (KPIs) as a support for SLAs.
- Proposal that ComReg may intervene to ensure that SLAs meet their objectives
- An obligation that Eircom should develop an Internal Reference Offer (IRO) in order to demonstrate equivalence between the WPNIA services and the processes associated with implementation, and the relevant services which it provides to itself.

### Transparency and non-discrimination obligations

- Extension of these obligations to support the proposed changes to the access obligations.

### Price control

- A general obligation not to price/margin squeeze.
- Further consultation on price control of NGN-based WPNIA services

## **The impact of proposed changes**

### Impact on Stakeholders

6.33 In the Consultation, ComReg recognised that the burden of the proposed regulation will fall primarily on Eircom. In ComReg's view, it is not likely that Eircom would choose to develop and supply WPNIA products absent regulation. However, ComReg believes that WPNIA is necessary for the development of a competitive retail broadband market. Experience in the market to date indicates that it is necessary for regulatory involvement in ensuring access to a fit-for-purpose product, and in ensuring that operators can purchase wholesale inputs which allow them to provide a retail service which is at least as good as Eircom's own retail service.

6.34 ComReg therefore believes that the suite of remedies proposed is necessary, proportionate and justified on the basis of its analysis of the market, and of the actual and potential competition problems which need to be addressed.

6.35 ComReg has proposed that several developments to existing regulation should be considered, and these are summarised above. Of these, ComReg recognises that, in particular, the development of Key Performance Indicators (KPIs) and of an Internal Reference Offer (IRO) will entail additional direct costs for Eircom. However, ComReg notes that these obligations do not require changes to the products or associated processes. Rather, the concern is to find means of demonstrating that WPNIA products are fit-for-purpose, in the case of KPIs, and that there is no discrimination between OAOs and Eircom's retail operation, in the case of the IRO.

- 6.36 ComReg has proposed that the development of KPIs and an IRO will be subject to further consultation, and notes that the potential impact of these measures will be examined during this process. For the other measures proposed, ComReg considers that they are largely a refinement of existing obligations, and that the processes and procedures are for the most part already in place.
- 6.37 ComReg believes that experience of regulating this market indicates a strong need for these measures. ComReg's intention is that, should these obligations be imposed following this consultation, the implementation would ensure that the burden on Eircom is minimised.
- 6.38 It is ComReg's preliminary view that the proposed measures would be positive for other stakeholders in the market, particularly for OAOs.
- 6.39 The proposed measures constitute an additional regulatory burden for ComReg, and this would entail both ComReg's support for the development of measures such as KPIs and an IRO, and the need to ensure implementation and compliance. However, ComReg believes that these measures are essential for the development of the market, and the ultimate benefit of consumers.

#### Impact on Competition

- 6.40 Because Eircom is the only operator in Ireland with a network of the type and ubiquity to potentially be amenable to offer wholesale physical network infrastructure access products, ComReg does not expect there to be direct competition within the WPNIA market itself. The analysis of the wholesale physical network infrastructure access market has been undertaken with the aim of ensuring that operators are able to purchase wholesale inputs which enable them to compete in the retail broadband market. Eircom is a vertically integrated operator, and regulation is required to ensure that it cannot leverage market power between the wholesale and retail markets.

#### **Views of respondents**

- 6.41 Five respondents agreed with ComReg's RIA. However, one of these respondents did not agree that there may be a justification for ComReg proposing to forbear from intervening in setting price controls for NGA-based WPNIA services in advance of commercial negotiation. Another of these respondents noted particular support for the extension of the access remedy in line with a technology neutral product market definition, the development of an Internal Reference Offer (IRO) to support the non-discrimination and transparency obligations, and the proposal to reserve the option to intervene on the terms of SLA where this is required to meet their objectives. However, this respondent believes that ComReg should address the regulatory impact of all proposed changes, including those subject to further consultation, in the current RIA. This respondent also suggested that at least rough quantitative estimates should be provided of the costs of compliance with the proposed additional regulation in the RIA. In the respondent's view, this would not be likely to alter ComReg's assessment that the proposed regulations are proportionate and necessary to effectively address the competition problems in the market.
- 6.42 Two respondents did not agree with ComReg's Regulatory Impact Assessment. One of these respondents bases its disagreement on its view that the market

definition is incorrect. The points raised have been considered by ComReg when considering the market definition. The other respondent argued a number of points:

- ComReg has not followed the standards established in its own RIA Guidelines. In particular, ComReg has not analysed the option of “wait and see” where intervention is not made immediately, and has not considered an immediate or gradual reduction of existing regulation (Step 2). In the respondent’s view, ComReg has not offered evidence of a calculation of costs and benefits (Step 3 and Step 5);
- ComReg should not use material collected for example in response to data directions which it does not make available to third parties;
- ComReg has failed to establish that remedies currently in place have failed, because, in the respondent’s view, ComReg is proposing “major augmentation” of regulation.
- the RIA should focus on reducing regulation so reflecting the respondent’s perception of vibrant inter-modal competition in the Irish broadband industry which has developed in spite of, rather than because of, regulation.

### **ComReg’s views and analysis**

6.43 Since publishing the Consultation, and in light of respondents’ comments, ComReg has further considered the application of remedies to NGA based products and services in the WPNIA market. ComReg’s competition analysis and assessment of competition problems indicate a requirement for regulatory intervention in the WPNIA market, irrespective of the technology used to deliver services in the market. For this reason, ComReg considers that it is justified and appropriate to impose a remedy requiring Eircom to meet reasonable requests for access, and that this obligation is supported by requirements that Eircom behave in a manner which is transparent and non-discriminatory. However, while ComReg believes that it is appropriate to specify how these obligations should be carried out in relation to the current generation of products and services, it is now proposed to consult further on the detail of the specific remedies to be applied in an NGA environment. ComReg notes that this further consultation will include a Regulatory Impact Assessment.

6.44 ComReg has taken full account of respondents’ views. Comments generally concern the methodology used, and ComReg has analysed this in terms of:

- Place of the RIA in the analytical process
- Use of data
- Assessment of impacts

Place of the RIA in the analytical process

6.45 The Regulatory Impact Assessment carried out by ComReg and presented in the Consultation followed ComReg's Guidelines<sup>131</sup> and took close account of the Government's Better Regulation agenda, and of international best practice (by, for example, considering developments in thinking about RIA published by the EC and the OECD). This was done in accordance with Ministerial Policy Direction 6<sup>132</sup>.

6.46 ComReg's approach to RIA follows five steps:

Step 1: describe the policy issue and identify the objectives

Step 2: identify and describe the regulatory options

Step 3: determine the impacts on stakeholders

Step 4: determine the impacts on competition

Step 5: assess the impacts and choose the best option

6.47 One of the respondents believes that the RIA should have been carried out after the remedies had been designed. In ComReg's view, this is based on the respondent's misunderstanding of the Government's and of ComReg's Guidelines, and a misunderstanding of the purpose of RIA.

6.48 The purpose of carrying out a RIA is to aid decision-making through identifying regulatory options, and analysing the impact of those options in a structured manner. The Government's RIA Guidelines state that:<sup>133</sup>

*RIA must be undertaken at an early stage and before a decision to regulate has been taken.*

6.49 ComReg's 5-step approach similarly begins by describing the policy objectives and identifying options (Step 1), and continues by identifying and describing the regulatory options (Step2).

6.50 The European Commission, in reviewing its own use of impact assessment, notes that:<sup>134</sup>

*Impact assessments need to be conducted earlier in the policy development process so that alternative courses of action can be thoroughly examined before a proposal is tabled.*

6.51 Following these sets of Guidelines, it is clear that RIA should not be applied at the end of the process, but should in fact be introduced as early as possible. The consideration of regulatory impact should inform a discussion of options, and RIA

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<sup>131</sup> ComReg 07/56a

<sup>132</sup> Policy Directions made by Dermot Ahern T.D. (the then) Minister for Communications, Marine and Natural Resources on 21 February, 2003 and 26 March, 2004

<sup>133</sup> 2.1

<sup>134</sup> COMMUNICATION FROM THE COMMISSION TO THE EUROPEAN PARLIAMENT, THE COUNCIL, THE EUROPEAN ECONOMIC AND SOCIAL COMMITTEE AND THE COMMITTEE OF THE REGIONS Second strategic review of Better Regulation in the European Union COM(2008) 32 final 30.01.2008

as an approach should be integrated into the overall analysis. This is the approach which ComReg has followed. In the Consultation, ComReg carried out the definition of the market, then undertook a competition and SMP analysis, then considered, on the basis of an SMP finding, the existence of actual and potential competition problems which should be addressed through *ex ante* regulation. ComReg next considered its regulatory options, through conducting a Regulatory Impact Assessment. ComReg's analytical process is therefore as recommended in its own Guidelines, as well as in those of the Government and the European Commission.

#### Use of data

- 6.52 One respondent proposed that ComReg should not make use of “undisclosed and untested industry views”. ComReg disagrees with this position. In undertaking its analysis of the WPNIA market, ComReg has consulted widely. This has included issuing data directions to industry, and following up submissions for clarification, broad public consultation, and discussions with other NRAs and with the European Commission. ComReg uses all of these inputs when forming its judgements. ComReg is entitled to receive confidential material from operators, and is entitled to make use of this information when analysing markets. Where possible, ComReg has summarised respondents' views in a manner which respects confidentiality.
- 6.53 In fact, it would be remiss not to take account of information which had been submitted. All operators were given the same opportunity to make submissions, and all operators were subject to data directions. Operators were obliged to respond to data directions, and indeed a failure to do so is a case of non-compliance. Most operators marked significant parts – if not all – of their submissions as confidential. This includes the respondent who suggested that interested parties should be allowed to evaluate the evidence submitted in a non-public data collection process. ComReg notes that all operators were given the same opportunity to present their views, evidence and arguments. ComReg accepted extensions to consultation periods both for data direction responses and to the Consultation in order to accommodate operators who wanted more time to present positions and views. ComReg therefore considers that the process followed has been fair and objective, and that it has accommodated in a public manner all requests from operators.

#### Assessment of impacts

- 6.54 ComReg has reviewed specific comments from respondents on its assessment of potential impacts. These are:
- ComReg has failed to assess a “no change” or “wait and see” option
  - ComReg has not assessed costs and benefits
  - the assessment of impacts should be extended to cover all proposed options, even where these may be subject to further consultation
- 6.55 According to ComReg's RIA Guidelines, in Step 2 of the RIA process:  
*The first option will always be to make no change to the current regulatory policy.*

6.56 At present, the WUA market is regulated, and ComReg's starting point was therefore the extent to which current regulation achieves objectives. As outlined in Step 2 of the RIA Guidelines, examining the extent to which current regulation continues to meet objectives is a clear consideration of whether current regulatory policy should be changed or not. ComReg carried out this analysis under the following headings:

- Is regulation still necessary in this market?
- Does current regulation achieve objectives as simply as possible?
- Are changes to regulation required?

6.57 In this way, ComReg starts from the current situation, and, based on the analysis of the WPNIA market and the analysis of competition problems, identifies regulatory options. ComReg's RIA Guidelines describe a range of options which may be considered in all situations where ComReg may carry out a RIA. Not all options would be appropriate for a market analysis – for example, once there is a finding of SMP, there is no longer a “do nothing” option. ComReg has therefore carried out a practical implementation of its own RIA Guidelines, and considers that it is not useful to include a consideration of options which would not be applicable in a market analysis.

6.58 On the assessment of impacts, ComReg has considered the views of respondents suggesting that further detail should be provided on associated costs and benefits, and that this should also be applied to proposals which are subject to further consultation. ComReg has not considered the costs and benefits associated with the current regulatory regime because this RIA is not assessing the impact of the current regulatory regime. Rather, this RIA is concerned with the identification of regulatory options following this market analysis. It has not been necessary to start the analysis again at the beginning, assuming no regulation of the WPNIA market, because this is a second round review of a market deemed susceptible to *ex ante* regulation by the European Commission. The European Council and the European Commission have decided to impose *ex ante* regulation on the communications sector on the basis that it is in the wider public interest. ComReg's discretion is only in choosing between remedies. ComReg cannot be asked to do a RIA on the whole framework, which is inherently self-limiting, as no remedies would be applied if no SMP exists. Further, the range of remedies available is set out in the Framework, and ComReg is obliged to follow the approach which has been laid down and transposed into Irish law.

6.59 ComReg's approach has therefore considered current regulation, and the extent to which it is still considered sufficient to address competition problems in the WPNIA market. ComReg has identified areas where it believes regulation needs to be developed, notably in the development of KPIs and of an IRO. In these areas, ComReg proposes to carry out further consultation, both on the content and the implementation of these measures. ComReg is also proposing to consult further on the detail associated with the application of remedies to WPNIA services in an NGA environment. Until these consultations are carried out, it is not possible even to estimate the potential costs and benefits, as they will depend on how the measures are finally constituted. In fact, an estimate at this stage could be seen to



prejudge the eventual consultation. ComReg's approach is therefore to signal its intention to include an assessment of regulatory impact as an integral part of further consultation on KPIs an IRO, and on the application of remedies to NGA based products and services in the WPNIA market, and to confirm that this will include an evaluation of the associated costs and benefits.

- 6.60 In considering responses to consultation, ComReg has reviewed its methodology in conducting a RIA, and has reviewed the analysis and preliminary conclusions presented in the Consultation. ComReg maintains that it has conducted a RIA according to its own Guidelines, and taking into account Government and European Commission requirements.

## 7 Remedies

### Approach to defining and imposing remedies

- 7.1 Further to Regulation 27(2) and Regulation 27(4) of the Framework Regulations, ComReg is obliged to impose at least one remedy where it finds an undertaking has SMP. In the Consultation, in light of the potential competition problems arising from the preliminary conclusion of SMP in the relevant market and ComReg's preliminary view that there were unlikely to be sufficiently significant developments within the period of this review which will prevent Eircom from acting independently of its competitors or customers, ComReg proposed to impose a number of obligations which it considered to be based on the nature of the potential competition problems identified and proportionate and justified in light of the obligations laid down in section 12 of the Communications Regulation Act of 2002 further to Regulation 9(6) of the Access Regulations.
- 7.2 ComReg has paid particular attention to comments made by respondents in relation to how remedies may best be applied to Next Generation Access<sup>135</sup> (NGA) products, service and associated facilities which fall within the WPNIA market. ComReg is of the view that the advent of NGA should not be allowed to lead to a restoration of monopoly conditions over the access network, given that the conditions of competition are expected to be the same where Eircom overlays or replicates its existing access network with fibre and NGA equipment (Eircom's SMP will prevail across current generation networks and next generation network infrastructure). Failing to impose some form of remedial obligations over NGA infrastructure would ultimately be contrary to ComReg's statutory responsibility to promote competition and the interests of end users.
- 7.3 However, given the lack of certainty around the nature and the timing of any NGA investment, given the continuing evolution of some services in the wholesale and retail markets, and given the diverse views expressed by respondents, ComReg believes that while it is important to establish the principles of regulatory remedies which would apply to the WPNIA market, and to establish how these remedies will be implemented in terms of current products and services, further consultation is required to consider how these obligations may best be implemented in a NGA

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<sup>135</sup> In this document the term "current generation products, services and associated facilities in the Market" refers to those products, services and associated facilities which are at present offered over copper using Digital Subscriber Line technology, including but not limited to those products, services, associated facilities and variants of those, which are specified in the current Version 1.21 of Eircom's Access Reference Offer.

Next generation access is considered to include access networks which permit very high speed access reaching from multi-functional access and aggregation nodes to the end-users. Such an NGA network can be made of fibre, coaxial cable, powerline communications, wireless technologies, or hybrid deployments of these technologies, such as combining fibre and copper. In the context of the WPNIA market in Ireland as defined this will mean that part of the access network that is composed of fibre optic cable although it might include other new infrastructure that permits very high speed access.

environment. In general ComReg is committed to ensuring that access should be provided to such new infrastructure. However ComReg is aware that the business case for such investments is difficult and investment funding difficult to obtain in the current economic climate. Accordingly while ComReg believes that it needs to clarify now that it sees NGA as being subject to regulation, nevertheless ComReg considers it prudent to be flexible in its approach. The degree of intervention required will, in ComReg's view, depend to a large extent on the degree to which industry players and Eircom in particular, approach the issue. If Eircom can accept that its NGA network must be made available to other players on reasonable terms and some degree of consensus can be achieved by industry then the need for regulatory intervention may be reduced. The approach proposed by ComReg therefore gives the greatest flexibility to the market to determine what products and services should be offered and on what basis, and offers the opportunity for NGA to be implemented following commercial negotiation.

- 7.4 The approach to remedies is therefore specific in relation to current services, in regard to both the obligations which will be imposed, and on how the obligations will be implemented. In considering NGA services, the approach is specific in terms of the principles of the obligation, but not in terms of their implementation. ComReg notes that it is important that remedies address potential migration from current generation products and services to NGA based products and services. For this reason, ComReg has considered the need for transparency, particularly around possible NGA planning, within the remedies applied to the current generation of products and services.
- 7.5 ComReg notes that its approach is consistent with that of the European Commission. In particular, the EC will publish its Recommendation on the Regulation of NGA in 2009, and ComReg has considered the draft regulation when formulating its views.

### **Remedies applied in a NGN/NGA environment**

- 7.6 For all WPNIA products and services which are addressed in an NGN/NGA environment, the following obligations shall apply:
- Pursuant to Regulation 13 of the Access Regulations, Eircom will be obliged to meet reasonable requests for access to, and use of, specific WPNIA network elements and associated facilities
  - Pursuant to Regulation 10 of the Access Regulations, a transparency obligation shall be imposed on Eircom
  - Pursuant to Regulation 11 of the Access Regulations, a non-discrimination obligation shall be imposed on Eircom
  - The pricing of NGN/NGA-based WPNIA products and services shall be subject to further consultation
  - Obligations concerning cost accounting and accounting separation shall be subject to further consultation.

7.7 By imposing a set of remedies in principle, ComReg is establishing its approach to NGN/NGA, and noting that the introduction of new types of access cannot be allowed to restore monopoly conditions. However, in recognition of uncertainty surrounding how and when NGA may be introduced, ComReg will consult shortly on the detail of the specific remedies associated with NGN/NGA.

### **Remedies applied to the current generation of WPNIA products and services<sup>136</sup>**

7.8 ComReg has established that, on the foot of this market review, it is appropriate and proportionate to impose remedies on the WPNIA market. ComReg will consult further on how these remedies may best be implemented in an NGN/NGA environment. The discussion below considers in detail how appropriate remedies should be applied to the current generation of products and services in the market for Wholesale Physical Network Infrastructure Access, in terms of:

- Access to and use of specific network elements and associated facilities (Regulation 13 of the Access Regulations);
- Transparency(Regulation 10 of the Access Regulations) ;
- Non-discrimination(Regulation 11 of the Access Regulations);
- Price Control and Cost Accounting (Regulation 14 of the Access Regulations).
- Accounting Separation. (Regulation 12 of the Access Regulations);

#### Access to and use of specific network facilities

7.9 Under Regulation 13(1) ComReg may in accordance with Regulation 9, impose on an operator obligations to meet reasonable requests for access where ComReg considers that the denial of such access or the imposition by operators of unreasonable terms and conditions would hinder the emergence of a sustainable competitive retail market, and would not be in the interests of end-users and would otherwise hinder the objectives set out in section 12 of the Communications Regulation 2002 Act.

7.10 Pursuant to Regulation 13(4), when considering whether to impose obligations referred to in paragraphs (1) and (2) and, in particular, when assessing whether such obligations would be proportionate to the objectives set out in section 12 of the Act of 2002 ComReg took into account in particular the following factors:

- (a) the technical and economic viability of using or installing competing facilities, in light of the rate of market development, taking into account the nature and type of interconnection and access involved;
- (b) the feasibility of providing the access proposed, in relation to the capacity available;

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<sup>136</sup> The current generation of WPNIA products and services refers to products, services and associated facilities which are, at present, offered over copper, using DSL technology. This would include, but not be limited to, those products and variants of those products offered in Eircom's ARO, of which the most recent version is 1.21,

- (c) the initial investment by the facility owner, bearing in mind the risks involved in making the investment;
- (d) the need to safeguard competition in the long-term;
- (e) where appropriate, any relevant intellectual property rights; and
- (f) the provision of pan-European services.

7.11 The Competition and SMP analysis carried out in this review has indicated that products and services in the WPNIA market would not exist absent regulation, and that Eircom is dominant in the market. ComReg has followed the European Commission's recommendation that the retail broadband market is not susceptible to *ex ante* regulation. However, this is totally dependent on appropriate and effective regulation at a wholesale level because OAOs are dependent on wholesale inputs in order to compete in the downstream markets. In considering the criteria under Regulation 13(1) ComReg notes that in order for any level of competition in the retail market to emerge and to be sustained, effective wholesale regulation is required. ComReg has further considered how wholesale regulation may best be addressed. This has included an assessment of actual and potential competition problems in the WPNIA market, and a Regulatory Impact Assessment of options available.

7.12 Under Regulation 13(1) and Regulation 13(4) when considering whether to impose access obligations in particular, when assessing whether such obligations would be proportionate to the objectives set out in section 12 of the Act of 2002, ComReg has taken into account a number of factors. This has included the technical and economic viability of using and installing competing facilities; the impact of capacity constraints on the feasibility of providing access; initial investment by the incumbent; and the need to safeguard competition in the long-term.

7.13 *Technical and economic viability:* As regards access over copper loops such access already exists in the form of Local Loop Unbundling and Sub Loop Unbundling and is clearly technically viable. Pricing has and will continue to be based on principles that, inter alia, will allow a reasonable rate of return on adequate capital employed taking into account the risks involved. As regards access over fibre ComReg has imposed a general access obligation in order to avoid a restoration of monopoly over the access network. However it is not yet in a position to be prescriptive about the precise mode of access because of uncertainty regarding technical and economic viability. ComReg notes that it is possible that no mode of access over fibre may prove technically or economically viable in which case other forms of indirect or virtual access may need to be considered. This will be consulted on shortly.

*Feasibility of providing access in relation to capacity available:* ComReg's proposals regarding access to copper loops and sub loops relate to elements which are already in place, therefore no capacity issue exists.

*The initial investment of the provider:* ComReg's proposals will, as noted above ensure a reasonable rate of return on existing infrastructure.

*The need to safeguard competition:* As discussed elsewhere in the paper ComReg's proposed measures are essential to ensure that competition over the local access network is safeguarded in the long term.

*No issue regarding intellectual property rights exists*

ComReg's proposals will facilitate pan European services since they are consistent with the policies of the EU Commission and other NRAs

- 7.14 In proposing the following remedies on the current generation of products, services and associated facilities in the WPNIA market, ComReg has taken account of all factors identified in Regulation 13(4) and Regulation 13(1).

*Access to WPNIA*

- 7.15 In the Consultation, ComReg proposed, pursuant to Regulation 13 of the Access Regulation, to continue to impose an obligation on Eircom regarding wholesale physical infrastructure-based local access.
- 7.16 As stated in the Access Regulations, obligations can be imposed on operators 'to meet reasonable requests for access to, and use of, specific network elements and associated facilities, inter alia in situations where the national regulatory authority considers that denial of access or unreasonable terms and conditions having similar effect would hinder the emergence of a sustainable competitive market at the retail level, or would not be in the end-user's interest'.
- 7.17 The market analysis has indicated that, currently and within the period of this review, in order to deliver retail broadband services to end-users which require WPNIA as an input, and so allow them to compete with Eircom in the downstream market, OAOs will need access to Eircom's network. A requirement on the SMP provider to provide wholesale access to its network is needed to facilitate competition in downstream markets by enabling competitors to compete without the need to invest in a ubiquitous access network.
- 7.18 ComReg noted that the definition of the market proposed by the European Commission has changed since the time of the last review, in order to take into account technological changes in the market. It is ComReg's view that the aim of the proposed access obligation remains the need to ensure that OAOs can purchase all wholesale inputs associated with the access path which are necessary to reach the retail customer. In its explanatory note, the EC explains that:<sup>137</sup>
- As regards the first market, [i.e. WPNIA] ...technological change implies including all relevant physical infrastructure necessary to reach the end consumer, as opposed to a strict limitation to the metallic loop or sub-loops.*
- 7.19 ComReg proposed that the access obligation will apply to all infrastructures, including associated facilities, required to provide a technologically and commercially viable retail service. This could include, for example, access to ducts, access to dark fibre, and to cabinet space. The access obligation would also apply to connectivity/backhaul between cabinet or exchange based equipment (co-location point) and the OAO's required handover point.

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<sup>137</sup> European Commission Explanatory note paragraph 4.2.2.

- 7.20 The access obligation would include (but not be limited to) those products currently offered in Eircom's ARO (current version 1.21) and associated documentation.<sup>138</sup>
- 7.21 Eircom currently offers five products in the WPNIA market, and these are detailed in its ARO. The products are line sharing (LS); ULMP; GLUMP; co-location; and sub-loop unbundling. It is ComReg's view that an access obligation would include, but would not be limited to, those products.
- 7.22 Co-location is a pre-requisite for OAOs to avail of wholesale products in the WPNIA market. For example, an OAO that wishes to purchase LLU within an exchange or cabinet requires the ability to co-locate a DSLAM in that exchange or cabinet in order to use the local loop.
- 7.23 In the Consultation, ComReg considered that an OAO wishing to purchase WPNIA may require co-location for various reasons. ComReg considers that the reasonableness of requests by OAOs for access to co-locate equipment should be considered on a case by case basis.
- 7.24 Eircom should be obliged to provide access to co-location where an operator has made a reasonable request for access. ComReg also believes that once co-location has been granted that an OAO should be entitled to use it in the most efficient manner possible. This may mean that an OAO would wish to use the space rented for more than one purpose, and where it is efficient to locate other products and services there too then the OAO should be permitted to do so. In ComReg's view it is essential that co-location is managed in a timely and efficient manner.
- 7.25 It is likely that the specification of "all relevant physical infrastructure" will change as products and services develop. ComReg's proposed approach was therefore to establish the principle that the access obligation will apply to all necessary infrastructure and associated facilities, and to recognise that the nature of this infrastructure will evolve.

### **Views of respondents**

- 7.26 One respondent disagreed with all proposed remedies because it did not agree with the market definition.
- 7.27 One respondent put forward a view that NGN/NGA should be excluded from the WPNIA market. In the respondent's view, the discussion is at best premature and at worst a severe disincentive to invest in fibre access networks. The respondent believes that uncertainty around the features, pricing, speeds and applications associated with possible NGN/NGA implementation means that NGN access should not be considered as part of either the WPNIA or the WBA market at this time. The same respondent supplied an Annex detailing plans for Next Generation fibre access.
- 7.28 This respondent suggested that, in an NGA environment, a bitstream product may be of greater interest than unbundling to OAOs, from the perspectives of both cost

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<sup>138</sup> In addition, there are two requirements which are currently not captured in the Access Reference Offer – these are the specific offering of cabin co-location for Roches St. exchange; and the compact disc provided to operators of "bulk data". ComReg also proposes that these should be maintained.

and feature-functionality. The respondent proposed that a bitstream option may also make customer switching more straightforward, since this would occur via an electronic interface with no need for physical unbundling. The respondent cited trials of Active Line Access in the UK in support of this view.

- 7.29 Other respondents agreed with ComReg's technology-neutral approach, and proposed that, where fibre is used to fulfil a function currently carried out by the local loop, then it would form part of the same WPNIA market.
- 7.30 One respondent suggested that an obligation to provide backhaul from both the cabinet and the exchange was not justified on the basis of competition analysis, and, in the respondent's view, no current market failure exists in the copper network, and there is no reason to assume that a problem will develop in the future. The respondent indicated that operators have successfully secured fibre cable access to all currently unbundled exchanges through commercial requests. Further, the respondent proposed that this obligation would be contrary to the Access Directive (Article 12(2)) because it would require Eircom to supply wholesale services even when it would be technically and commercially feasible for OAOs to self-supply, or to obtain services from competing infrastructure providers.
- 7.31 Another respondent, however, emphasised the importance of suitable wholesale backhaul from the exchange in order to allow OAOs to unbundle at a greater number of exchanges. This respondent also put forward a view that duct access would encourage unbundling, and noted that regulators in several other European countries have prioritised this approach by explicitly obliging SMP operators to facilitate duct access.
- 7.32 Another respondent clarified that, in its view, the access obligation would apply to all associated facilities, including but not limited to duct, chambers, co-location, risers, manholes, vertical real estate, enclosures, head-ends, cabinets, bores, junction boxes, splice points, MDFs, ODFs, NTUs, splitters, combiners, and such GIS maps and drawings related to such items.
- 7.33 A respondent questioned ComReg's proposal that the access obligations would apply to all necessary infrastructure and facilities, and ComReg's view that the nature of the infrastructure and facilities would evolve. The respondent stated that, in its view, this was a sweeping requirement for Eircom to re-engineer its network to accommodate any and all requests for the unbundling of the legacy and future NGN access networks. The respondent described its perception of ComReg's approach as "open access".

### **ComReg's views and analysis**

- 7.34 ComReg has considered all respondents' views.
- 7.35 In the section on Market Definition, ComReg outlined and explained its approach to NGN/NGA. The approach which ComReg has proposed recognises that the implementation of NGA is still unclear. ComReg's starting point is that the local access network is an enduring bottleneck, and that regulatory remedies have been, and are still, required to address this. Current obligations have concentrated on enabling OAOs to unbundle the local loop. Future developments could include different forms of unbundling, for example fibre frequency, and could include different means of offering wholesale physical access which are not restricted to unbundling. Technological developments may alter the nature of the physical



infrastructure, but if the underlying economic bottleneck persists, then there will be a continuing need for regulatory remedies. By adopting a technology-neutral approach, ComReg is offering flexibility to all operators in how this bottleneck is overcome.

7.36 ComReg welcomes the potential offered by NGA, and recognises the range of possible new retail services which could be offered. However, ComReg must also consider how best to encourage competition in supplying the retail broadband market. To this end, where new NGA infrastructure is fulfilling a function as defined within the market for wholesale physical network infrastructure access, it is subject to the remedies which apply to that market.

7.37 In its Explanatory Note to the Recommendation on Relevant Markets<sup>139</sup>, the European Commission notes that the deployment of NG access networks will modify the competitive environment in the current LLU market. The EC advises NRAs to:

*...find ways to promote the deployment of new and more efficient network architectures while at the same time recognising the investments made by new entrants on the basis of current architectures. National authorities will need to carefully follow and evaluate developments in order to ensure that appropriate access remedies are maintained for the forward-looking periods for which competition is judged to be ineffective, and to avoid undermining or discouraging efficient entry. Remedies such as duct sharing, access to dark fibre, mandated backhaul from the street cabinet, and new forms of bitstream access, could be considered where these are appropriate, bearing in mind that, in line with Article 8 of the Framework Directive, remedies should aim, inter alia, at stimulating economically efficient investment in infrastructure. This may call for some transitional arrangements to be considered, to allow time for adaptation of existing business models [paragraph 3.3].*

7.38 ComReg is aware that there is considerable on-going discussion in Ireland on options for the development of NGA, and welcomes information on this subject submitted by respondents. However, the focus of this review is on the market for wholesale physical network infrastructure access. As such, while considerations of possible future developments in NGA inform the analysis, the core concern is with addressing the competition problems identified in the WPNIA market, and ensuring that competition in the downstream retail broadband market is not impeded. However, as discussed earlier in this Section, ComReg recognises that further consultation is required on the detail of the specific remedies to be applied in an NGN/NGA environment. For that reason, it is proposed that a general access obligation is imposed on WPNIA in an NGN/NGA environment, and that the specific obligations below apply to the current generation of products and services.

7.39 ComReg has considered the view of one respondent that there is no need to apply an access obligation to the provision of backhaul because there is currently no problem with backhaul. This view is directly contradicted by other respondents, who emphasise the need for appropriate backhaul services, and who believe that current provision is not adequate.

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<sup>139</sup> Explanatory Note accompanying document to the Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Second edition) SEC(2007) 1483 final

- 7.40 In ComReg’s view, backhaul is an important part of a WPNIA service. Backhaul in this context relates to both backhaul between the cabinet and the exchange and between the exchange and the OAO point of handover. There needs to be a cost-effective way for OAOs to reach as great a number of exchanges as is viable. Because of this, Eircom’s SMP on the market would justify the need for backhaul provision, as an SMP position would indicate that a dominant operator may have the motivation and incentive to refuse or delay access to backhaul, even where this behaviour had not already been apparent. ComReg notes that one respondent expressed a view that an access obligation should not be applied to backhaul because OAOs can self-supply this, or source from competing infrastructure providers. However, in considering its objectives in light of Regulation 13(1) and Regulation 13(3), ComReg notes that, in Ireland, the availability of competing infrastructure is limited and that it would not always be technically or commercially viable for an OAO to use or install alternative appropriate backhaul. ComReg believes that backhaul provision should be by the most efficient solution available. Therefore ComReg would expect that backhaul solutions based on technologies such as Ethernet would be made available, for example, assuming that Ethernet is the most efficient solution available at the time.
- 7.41 In considering the respondent’s view of ComReg’s proposals as constituting “open access” ComReg would draw attention to the Access Regulations, which require Eircom to “meet reasonable requests for access to, and use of, specific network elements and associated facilities”. At no time has ComReg suggested that Eircom needs to meet “any and all” requests for access. ComReg has established the principle that Eircom will be required to meet reasonable requests for access, and has established that this principle applies to all products and services in the market, and to the evolution of products and services in the market.
- 7.42 Having regard these considerations and to section 6 above ComReg is satisfied that an access obligation is based on the problem identified and is proportionate and justified in light of the objectives set out in Section 12 of the Communications Regulation Act 2002.

### **ComReg’s position**

**ComReg shall impose an access obligation on Eircom to provide access to all Wholesale Physical Network Infrastructure Access products, services and associated facilities<sup>140</sup> on a technologically neutral basis in response to a reasonable request. The obligation would include, but would not be limited to, those products currently offered in Eircom’s ARO and supporting LLU documentation. It would also apply to connectivity/backhaul between cabinet or exchange based equipment and handover points.**

#### *Access to facilities already granted*

- 7.43 In the Consultation, ComReg proposed that Eircom should continue to have an obligation pursuant to Regulation 13(2)(c), not to withdraw access to facilities already granted, unless the withdrawal and the timelines around the withdrawal have been approved by ComReg. ComReg believes that this obligation is necessary

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<sup>140</sup> As defined in the Framework Regulations and also within the meaning contained in the definition of access in the Access Regulations.

to ensure that OAOs have sufficient certainty to provide retail services to the marketplace and so compete with Eircom.

- 7.44 ComReg noted that Eircom's gradual migration to NGN technology might give rise to instances where Eircom might wish to withdraw access to existing facilities. ComReg has considered the issue with regard to withdrawal of access where an operator may be required to retain facilities already in place in a time when it is re-designing its network architecture and redeploying network infrastructure and where access facilities, if not withdrawn, could impede development
- 7.45 This has particular relevance for WPNIA as NGN developments might result in a reduction in the number of network nodes therefore possibly allowing for the closure of exchanges. WPNIA operators who have made significant investment in exchange based equipment require some certainty in relation to their investments and it is ComReg's view that a sufficient notice period must be afforded OAOs before exchanges can be closed in order to allow time for OAOs to plan for withdrawal of access and to provide a measure of certainty to OAO business planning.
- 7.46 In its position paper 'Regulatory aspects of Next Generation Networks', ComReg noted that:<sup>141</sup>
- The provision of a functionally and economically equivalent alternative and an advanced notice period of between three and five years would be warranted prior to any intended withdrawal of MDF access*
- 7.47 It was proposed that Eircom should continue to seek ComReg approval before withdrawing or reducing access to existing facilities, and that ComReg's decision will be proportionate and justifiable and will take into account the potential impact on the market. It was proposed that no MDF which is already unbundled or is likely to be unbundled may be removed with less than 5 years' notice, except in exceptional circumstances.

### **Views of respondents**

- 7.48 Respondents differed in their approach to ComReg's proposals, and a range of views were expressed.
- 7.49 One respondent discussed the proposed obligation not to withdraw access to facilities already granted as it would apply in the implementation of NG access. The respondent believes that there is a need for transitional arrangements, but argues that the technical and commercial details of transition should be negotiated through the NGN Steering group or similar, on a case by case basis.
- 7.50 A second respondent agreed with the obligation in general, but suggested that a five-year notice period may in some circumstances be excessive.
- 7.51 Two respondents agreed with the proposals put forward by ComReg.
- 7.52 Another respondent proposed that the obligation should be extended to prevent both the withdrawal and the movement of MDFs within a five year notice period. Extension of the obligation was also requested by a further respondent, who suggested that 5 years may not be sufficient for an OAO to generate its return from

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<sup>141</sup> Regulatory aspects of Next Generation Networks, ComReg doc No 07/40, 8 July 2007

an unbundled exchange, and that no closures should be considered until the elements are in place to allow an efficient operator a fair opportunity to generate a fair return on its investment.

### **ComReg's views and analysis**

- 7.53 ComReg's approach to the need for an obligation not to withdraw access to facilities already granted has to balance the requirement for OAOs to have some certainty over the future of their investments against the requirement to support network development. This is particularly pertinent in the discussion over the potential implementation of NGN/NGA.
- 7.54 ComReg notes that two OAOs have proposed that no closure or withdrawal should be considered, at least until the unbundled product is operating effectively. In ComReg's view, this does not take the positive benefits which may be achieved through NGN/NGA implementation into account, or recent improvements in the Wholesale Product set and would therefore not be the most appropriate balance.
- 7.55 ComReg believes that concerns expressed by two other operators reflect some lack of clarity in the way the proposed obligation was expressed. The intention was that, generally, exchanges which are already, or may reasonably be, unbundled should not be removed with less than 5 years' notice. However, a different timescale may be agreed through negotiation.
- 7.56 In ComReg's view, this clarification addresses points made by respondents who considered that the notice period was to be rigidly enforced as this was not the intention. In considering circumstances which may qualify a 5 year notice period, ComReg would consider, for instance in the event of NGN roll-out, factors such as the potential for commercial negotiation, existence of alternative provision and migration paths.
- 7.57 ComReg is also of the view that NGN developments should not impact on any aspect of the WPNIA product set including product delivery and service assurance and in particular Co-Location related services. While particular emphasis has been placed on MDF access ComReg is of the view that other related exchange dimensions normally consumed as part of the WPNIA product set should not be impacted due to NGN development or rollout. Eircom must seek approval from ComReg before impacting on any aspect of WPNIA related product delivery and service assurance or before withdrawing or reducing access to any exchange facility during migration to NGN technology.
- 7.58 Further, ComReg notes that NGA networks should be designed in a way that facilitates infrastructure based competition through the supply of WPNIA. Eircom should be prevented from designing networks for tactical reasons in a way that hinders the provision of WPNIA on NGA platforms.
- 7.59 In response to a respondent's wish for clarification of what is meant by withdrawal, ComReg confirms that withdrawal does not have to be a complete action, and may also refer to a reduction in service provision.

### **ComReg's position**

**Eircom shall have, as part of its Access obligation, an obligation not to withdraw or reduce access to facilities already granted, except where this has been approved by ComReg. This relates to all aspects of the WPNIA Product life cycle. It is**

**proposed that no Eircom exchange or exchange dimension or access to exchange or exchange dimension, normally consumed as part of the WPNIA Product set, may be removed or access diminished with less than 5 years' notice, except where this withdrawal and associated timescales have been approved by ComReg.**

*Provision of information*

7.60 In the Consultation, ComReg proposed, pursuant to Regulation 13(2)(c) and 13 (3) of the Access Regulations, to oblige Eircom to continue to provide information which supports wholesale network infrastructure access. Information should include that necessary for all aspects of the wholesale product life cycle, provisioning, and service assurance, such as technical specifications, network information and characteristics (including information on duct routes and available duct capacity), terms and conditions for supply and use, and prices. This could also include information which may be available through access to ordering systems and billing systems, where appropriate. This obligation would apply to all information necessary for an OAO to provide a retail service which is of the same quality and standard as Eircom's retail offering, or those of its subsidiaries or partners.

7.61 Information should also include reasonable requests by undertakings for appropriate performance metrics either requested over a short period to address a particular performance related issue or over an extended period in order to carry out trend analysis. ComReg noted that performance metrics are required for a number of purposes. ComReg needs to be able to judge the extent to which the product is fit-for-purpose. ComReg also requires transparency around the service which Eircom offers its retail operation in order to compare this with WPNIA services offered to OAOs. OAOs also require visibility of product performance information in order to be satisfied that they are being offered a fully functioning product which is the same as that being consumed by Eircom's retail operation.

**Views of respondents**

7.62 Respondents did not comment specifically on this proposal. ComReg's view is therefore maintained.

**ComReg's position**

**Eircom shall be obliged to provide all necessary information which supports existing and future wholesale physical network infrastructure access services as part of its access obligation. This obligation applies to all information necessary for an undertaking to provide a retail service which is of the same quality and standard as Eircom's retail offering, or those of its subsidiaries or partners.**

**Eircom shall be obliged to provide information which must be as complete and to the same standard as that provided to Eircom's retail operation, or to its subsidiaries or partners. The mechanism which is made available to undertakings to access this information must be as efficient and effective as that provided to Eircom's retail operation for the same purpose.**

*Obligation to meet reasonable access requests*

- 7.63 In the Consultation, ComReg proposed to impose the obligation on Eircom to meet reasonable access requests. This obligation is pursuant to Regulation 13(1) of the Access Regulations.
- 7.64 ComReg believes that OAOs will need to avail of products within the relevant wholesale market that will allow them to develop retail offerings to compete in the retail market. An access remedy allows OAOs to make reasonable requests for products according to their specifications pursuant to Regulation 13 (2) (a) Regulation 13(2)(e), Regulation 13(2)(g) and 13(2)(h) of the Access Regulations.
- 7.65 An obligation to meet reasonable access requests would allow OAOs to request variants of products and is appropriate given the experience of OAOs and witnessed by ComReg to date in requiring Eircom to introduce new products. Systems and processes provided by Eircom should be scalable in response to market demand. ComReg expects Eircom to consider requests from OAOs in the light of Regulation 13 (3), and to consider requests and to respond in a timely manner offering a solution which is in accordance with their obligation of non-discrimination.
- 7.66 ComReg considers that an obligation to meet reasonable access requests implies that resources should be managed efficiently such that OAOs are not unduly disadvantaged. For example, if duct space is not managed efficiently (for instance if unused or obsolete cables are left in place), then it would not be fair or reasonable to use this as a claim that there is no available duct space. ComReg expects that it is fair and reasonable to ensure that infrastructure including, but not limited to, duct space, MDF space, co-location footprints, and power supplies are managed in such a way that OAOs are not hindered in accessing them.
- 7.67 ComReg believes that the competition problems identified earlier indicate a specific need to address the ability to migrate retail customers between wholesale products on fair and reasonable terms, conditions and charges as required. This is not a new requirement since it is in any case implicit in the obligation to provide access since it would not be reasonable to deny an access request associated with a particular loop simply on the basis of its current usage. Nor would it be reasonable to provide access in such a way that the end-user experiences unreasonable levels of disruption since this would also constitute constructive denial. The ability to “migrate to” and “migrate from” a product is a characteristic of all wholesale products, and migration should be easily implemented in a way which is best for retail customers. This could include, for example, the ability for OAOs to migrate, and to bulk migrate, retail customers from one wholesale product to another. It could also include the ability for OAOs to migrate from full loop unbundling to sub-loop unbundling. A reasonable request to migrate from a virtual access product such as bitstream to a physical access product such as LLU or line share would be considered under the access obligation applied to the WPNIA market
- 7.68 The access obligation for WPNIA is intended to apply to all suitable forms of access necessary to allow flexibility in relation to the delivery of services to end-users. This would include the development and wholesale provision of efficient backhaul solutions. For example OAOs may want to install dark fibre in order to provide connectivity, therefore an OAO may require that a wholesale access

product be made available that allows either the OAO or a third party communications service provider to install fibre and provide service. Another example would be the ability of two or more OAOs to connect between their equipment co-located in the same Eircom exchange, possibly to allow one OAO to provide backhaul services to another.

### **Views of respondents**

- 7.69 Several respondents stated that the access obligation should include, on reasonable request, duct access, access to dark fibre, and access to cabinet space.
- 7.70 One respondent indicated that, in its view, the current wholesale portfolio meets the needs of the OAO customer base.
- 7.71 Another respondent welcomed ComReg's proposal that it was reasonable to expect that Eircom's resources should be managed efficiently.

### **ComReg's views and analysis**

- 7.72 From the responses to Consultation, and from its involvement in industry fora, ComReg does not believe that the current wholesale portfolio, and the way in which services are currently offered, meet the needs of the OAO customer base. Further, the WPNIA market includes a broader range of potential products than is constituted by Eircom's current product set, and particularly looking forward, it is essential that ComReg defines how reasonable access should be understood.
- 7.73 In considering how the obligation to meet reasonable access requests will be implemented in practice, ComReg has drawn extensively on the approach and proposed<sup>142</sup> Recommendations of the EC<sup>143</sup> in formulating its own approach.
- 7.74 The European Commission's Explanatory Note<sup>144</sup> explains that the new WPNIA market definition (Market 4) allows for remedies to go beyond those applied under the old WUA market definition (Market 11), as the latter focused on enabling competitors to replicate the incumbent's legacy copper network, through unbundling. Under the new WPNIA market definition, the EC sets out as a key regulatory objective the need to promote infrastructure-based competition to the greatest extent possible while bearing in mind the necessity to maintain remedies to safeguard the level of service-based competition that has already been reached. This means that NRAs are required to ensure investment at the lowest levels of network infrastructure, and that, for instance, where ducts are available to the extent that a sufficient number of operators can compete on this basis, upper level remedies (e.g. bitstream) should not put at risk the revenue which an operator could expect from the corresponding retail market.

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<sup>142</sup> The EC position is still subject to final decision – consultation period ends 14 Nov 2008

<sup>143</sup> Draft Commission Recommendation on Regulated Access to Next Generation Access Networks, and the Accompanying Document Draft Commission Staff Working Document Explanatory Note

<sup>144</sup> Explanation note accompanying document to the Commission Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Second edition) SEC(2007) 1483 final

- 7.75 The EC has further developed its policy towards the potential introduction of NGN/NGA, and is currently consulting on regulated access to NGA<sup>145</sup>. The approach proposed by the EC suggests that NRAs should consider imposing detailed obligations supporting the requirement to offer reasonable access to ducts. This could include, for instance, the requirement for an SMP operator to produce a Reference Offer which would include information on duct availability, and on how duct space will be made available. While the EC Recommendation has not yet been finalised, ComReg notes that it is expected to be published early in 2009, and ComReg has therefore been mindful of the content. ComReg has decided against specifying detailed obligations of this nature at this stage, because of the lack of certainty around the implementation of NGA in Ireland, and around the nature of potential requests for types of access. As noted earlier, ComReg intends to consult further on the detail of the specific remedies to be applied in an NGA environment.
- 7.76 ComReg notes that in the roll-out of any telecommunications network, the cost of civil works, particularly trenching and ducting, is the major cost component. Further, the roll-out of NGA in Ireland would be expected to rely to a large extent on Eircom's existing infrastructure. These two factors together indicate an enduring economic bottleneck, and constitute a major barrier to entry.
- 7.77 The access obligation applies to reasonable requests by OAOs for access. ComReg has focused on ensuring that the obligation is flexible enough to respond to WPNIA products and services as they evolve, and that the obligation allows OAOs to consider options in how they participate in the introduction of new products and services. The overall aim remains the need to facilitate investment while at the same time safeguarding competition.
- 7.78 Therefore, ComReg has indicated that reasonable requests for duct access, and for duct access managed in an efficient manner, and supported by appropriate processes, should be considered within the obligations imposed on the WPNIA market.
- 7.79 ComReg takes a similar approach to other potential OAO access requests, and in the Consultation noted some examples such as requests for dark fibre, or for particular types of backhaul solution. In line with the definition of the WPNIA market, ComReg expects that such requests should be considered as reasonable access requests.
- 7.80 Finally, ComReg notes again that access should and will be considered on a reasonable request basis. It has at no time been suggested that Eircom would have to comply with "any and all" requests for access. However the process by which Eircom considers requests from OAOs should mirror the process enjoyed by Eircom's retail operation in terms of number of process steps, timeliness, transparency, efficiency and coordination with Eircom's IT development process and timelines.

### **ComReg's position**

**ComReg shall impose the obligation on Eircom to meet reasonable access requests as part of its Access obligation. Reasonable access will apply to the need for a scalable product, provided in a timely and non-discriminatory manner. ComReg**

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<sup>145</sup> *ibid*



**considers that it is reasonable to expect that Eircom's resources will be managed efficiently in order to facilitate OAO access. Reasonable access requests will include, but not be limited to, requests for variants of products, and requests to migrate customers between wholesale products and variants of these products, including between current generation wholesale products, such as the Sub Loop Unbundled product and NGN related products. A reasonable request to migrate from a virtual access product such as bitstream to a physical access product such as LLU or line share would be considered under the access obligation applied to the WPNIA market. The process by which Eircom considers requests from OAOs should mirror the process enjoyed by Eircom's retail arm in terms of number of process steps, timeliness, transparency, efficiency and coordination with Eircom's IT development process and timelines.**

*Terms and conditions on a fair, reasonable and timely basis / Service level agreements / Internal Reference Offer / Key Performance Indicators*

- 7.81 In the Consultation, ComReg proposed that, pursuant to Regulation 13 (3) of the Access Regulations, those wholesale physical network infrastructure access services which Eircom supplies should be provided on terms and conditions which are fair, reasonable and timely. ComReg considered that this obligation should apply to products and services which the SMP operator supplies to OAOs, and those which it supplies to itself.
- 7.82 For all WPNIA products, services and associated information supplied to OAOs, ComReg proposed that terms and conditions should be supported by a Service Level Agreement (SLA).
- 7.83 ComReg proposed that the SLA should ensure that Eircom has a commercial incentive to provide a fit-for-purpose product supported by appropriate processes. These processes should address all elements necessary to offer products within the WPNIA market, including the ability to migrate efficiently between wholesale products.
- 7.84 ComReg also suggested that the SLA should specify a level of compensation that adequately compensates the customer for the impact resulting from the failure to deliver the service or failure to repair in the prescribed time as described in the SLA. The methodology used to arrive at the level of compensation and the schema for calculating penalty statements, including examples, should be detailed in the SLA. This would provide Eircom with an incentive to deliver and maintain service to a pre-defined and pre-agreed level of performance or compensate their customer accordingly. The process of compensation should not be burdensome on either party, and indeed the calculation of SLA credits should be clearly explained in the SLA, with examples, and provision of SLA service credits must be timely and efficient.
- 7.85 ComReg noted that issues have been raised repeatedly concerning the adequacy of the SLA in ensuring good service, and in providing restitution for any failure to provide good service. ComReg proposed that it may intervene to revise certain terms and conditions of the SLA should it fail to meet its objectives.
- 7.86 ComReg expressed the view that SLA service credits on their own may not provide sufficient incentive to Eircom to provide quality wholesale products. It is important

that the overall product quality standards are set, measured and maintained in order to promote sustainable competition.

- 7.87 In the Consultation, ComReg was of the view that product quality metrics should be set and measured separately to the SLA, and product quality metrics should be defined with Key Performance Indicators (KPIs), which would be published. If the KPI targets are not reached, or the KPI targets dip below the performance threshold for the measurement period, then ComReg should be able to make a finding of non-compliance and take appropriate enforcement action to compel compliance with Eircom's access obligation and any related conditions of fairness, reasonableness and timeliness that are imposed. Accordingly, ComReg believes that metrics of this nature should form part of the product specification and that failure to deliver in accordance with such KPIs could amount to constructive failure to supply.
- 7.88 ComReg therefore proposed that a set of KPIs and performance levels would be developed for all LLU products. These KPIs would be set by ComReg in consultation with industry, will be published, and will be subject to regular review. This is necessary to ensure that products offered are of a high standard and meet the requirements of the market and OAOs. This would be subject to further consultation.
- 7.89 In view of the competition problems identified above, ComReg considered that it is essential to be able to compare the service which Eircom provides to itself with the service which is available to OAOs. This applies to the content of the service, and also to the manner of its delivery and implementation. The objective is to ensure that there is no discrimination and to guide OAOs as to the nature and level of service they can expect.
- 7.90 ComReg has considered whether Eircom should be obliged to produce an Internal Reference Offer (IRO) which would allow comparison of the service which Eircom offers OAOs and the service which it provides to itself. According to guidance from the European Regulators' Group this is particularly helpful as a means of providing early indication of discrimination issues.<sup>146</sup> ComReg proposed that Eircom should be obliged to produce an IRO which would be used to demonstrate that its WPNIA offer allows OAOs to provide a retail offering of the same quality as Eircom's own services or those of its subsidiaries or partners, and that the inputs to that retail offering, and the mechanisms by which those inputs are made available to OAOs are as complete and of the same standard as that availed of by Eircom's own services or that of its subsidiaries or partners.

### **Views of respondents**

- 7.91 One operator expressed a view that an obligation to offer and publish KPIs and to develop and publish an Internal Reference Offer was tantamount to functional separation (although the respondent noted that the Consultation does not describe these proposals in terms of functional separation).
- 7.92 Other respondents expressed concern with the current regime. One respondent considered that Eircom should be obliged to comply with the spirit of the obligations as well as the letter, and therefore supported the introduction of

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<sup>146</sup> Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework, May 2006 (06) 33

performance indicators and the strengthening of the SLA. This respondent also indicated that, in its view, the current regulatory regime has not been sufficient to encourage competition, and it needs to be developed and properly enforced. The need for a strong, and strengthened, SLA was explicitly proposed by five respondents.

- 7.93 One of these respondents believes that comprehensive and binding SLAs are especially important with respect to maintaining high quality of service (QoS) to support the competitive provision of services such as voice over internet protocol (VOIP).
- 7.94 Other respondents believed that the compensation currently available is not adequate, and that penalties for non-compliance are insufficient. Some respondents proposed that strict regulatory sanctions were required in the event of non-compliance. Two respondents proposed that a separate compliance organisation should be established to ensure enforcement of regulation.

### **ComReg's views and analysis**

- 7.95 ComReg has revisited its analysis of the proposals to address perceived shortcomings in SLAs, and its proposals to develop Key Performance Indicators, and an Internal Reference Offer.
- 7.96 ComReg notes that one respondent believes that obligations which were proposed concerning non-discrimination, KPIs and the production of an Internal Reference Offer effectively constitute a form of functional separation. The respondent states that ComReg does not have the power to impose a functional separation obligation. Further the respondent states that the term "equivalence" is not recognised as a concept under the existing regulatory framework in Ireland.
- 7.97 ComReg has not proposed any functional separation obligation. Rather, ComReg has assessed competition problems in the WPNIA market, and has noted that there is a need to ensure that products offered in this market are firstly, fit-for-purpose, and secondly, offered in a non-discriminatory manner. In order to ensure that products are fit-for-purpose, ComReg proposed to consult with industry on how best to set, measure, and enforce Key Performance Indicators. Some respondents suggested different options on enforcement – for example, that a separate compliance organisation should be established, similar to that in the UK. ComReg would expect to consider such issues in the further consultation.
- 7.98 ComReg's proposal to require Eircom to develop an Internal Reference Offer was based on the need to ensure that Eircom does not discriminate between the service it offers to itself, and the service it offers to OAOs; in this regard the measure supports the non-discrimination obligation. At present, it is difficult to have visibility of the service which Eircom offers to itself, and of course, Eircom's self-supply forms part of the WPNIA market. In order to ensure that Eircom is compliant with all obligations concerning the service it offers to itself, ComReg needs to know what that service is.
- 7.99 ComReg's authority in proposing this obligation is derived from the Access Regulations<sup>147</sup>, in which Regulation 11 states that:

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<sup>147</sup> S. I. No. 305 of 2003 As amended by the European Communities (Electronic Communications Networks and Services) (Access) (Amendment) Regulations 2007

*(1) The Regulator may in accordance with Regulation 9 impose on an operator obligations of non-discrimination in relation to interconnection, access or both interconnection and access.*

*(2) Any such obligations shall ensure, in particular, that the operator:*

*(a) applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and*

*(b) 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.*

7.100 In ComReg's view the relationship between non-discrimination and the concept of equivalence is clearly expressed in the Access Regulations. In order to ensure compliance with Regulation 11, ComReg needs to know what conditions and quality apply to the services offered by Eircom to OAOs, and what conditions and quality Eircom provides for its retail operation. The development of Reference Offers and SLAs addresses the question of supply to OAOs, and in ComReg's view this must be complemented by similar information regarding the services which Eircom supplies to itself.

7.101 It is ComReg's view that the current SLA regime is not working effectively, and ComReg notes that this view is supported strongly by OAOs. The issues with the current SLA regime include inadequate compensation, delays in penalty payments and inadequate timelines and targets for repair and provisioning.

7.102 ComReg notes that some respondents proposed that regulatory sanctions are required to ensure compliance. While ComReg recognises the difficulties some OAOs have had, there are three separate issues to be addressed. The first issue relates to inadequate timelines and targets for repair and provisioning. In ComReg's view the SLA negotiated with OAOs should, in terms of performance, be of a standard which can be reasonably expected for a mass market high quality product. The second concerns compensation for OAOs in the event of a failure by Eircom to deliver the service described. In ComReg's view, compensation should recompense the OAO for loss of service and its impact, and should be paid promptly and efficiently. ComReg does not believe it is appropriate to extend a compensation scheme to include punitive charges in excess of business loss. The third issue concerns the proposal that more stringent regulatory sanctions are required. ComReg considers that, through the process of this market review, it has identified competition problems in the WPNIA market, and has put forward a comprehensive set of remedies designed to address these problems. To go further would not be proportionate.

### **ComReg's position**

**Eircom shall provide wholesale physical network infrastructure access services on terms and conditions which are fair, reasonable and timely. These terms and conditions shall be supported by Service Level Agreements as part of its access obligation. The SLAs negotiated with undertakings should offer performance to a standard and quality which supports the delivery of a high quality, mass market retail offering. The provision of service credits must be made in a timely and efficient manner. ComReg shall intervene should the SLA fail to meet its objectives**

**Performance metrics for WPNIA products will be defined by ComReg in consultation with industry, will be published, and will be subject to regular review. Eircom shall be obliged to comply with these Key Performance Indicators (KPIs) concerning WPNIA products and their implementation. Failure to achieve the performances targets may become a matter for regulatory compliance as this could be seen as an effective failure to supply.**

**Eircom should be obliged to develop an Internal Reference Offer which demonstrates that its WPNIA offer allows OAOs to provide a retail offering of at least the same quality as Eircom’s retail offering or those of its subsidiaries or partners.**

*Obligation to negotiate in good faith*

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

7.104 ComReg notes that the obligation to negotiate in good faith implies that Eircom would be able to demonstrate that it has negotiated in good faith with undertakings. The duty rests with Eircom to demonstrate that all reasonable attempts were made to fulfil the access request.

**Views of respondents**

7.105 No respondent commented on this proposal. ComReg’s position is maintained.

**ComReg’s position**

**Eircom shall be obliged to negotiate in good faith with undertakings requiring access and the duty rests with Eircom to demonstrate it has negotiated in good faith with the undertaking(s) requesting access. Eircom shall be obliged to negotiate in good faith with undertakings in relation to the conclusion of a legally binding and fit-for-purpose SLA.**

*Non-discrimination*

7.106 ComReg proposed that Eircom should continue to be required to provide access to WPNIA services to competitors on a non-discriminatory basis. This means that, in accordance with Regulation 11 of the Access Regulations, eircom is obliged to ensure that equivalent conditions are applied when providing access to services and information to other undertakings, and that services and information are provided to other undertakings under the same conditions and of the same quality as Eircom provides for its retail operation.

**Views of respondents**

7.107 As noted above, one respondent suggested that “equivalence” was not recognised as a concept under the Irish regulatory framework. The respondent based its arguments on a belief that ComReg was attempting to apply an approach used in the UK to the Irish situation.

**ComReg’s views and analysis**

7.108 ComReg can confirm that it is not trying to adopt the UK approach to equivalence and functional separation. ComReg understands very well why Ofcom developed its particular approach. However, ComReg's proposal regarding the conditions under which Eircom should be required to provide access to WPNIA services is related directly to the Access Regulations, and is applicable to the conditions in Ireland.

7.109 Infrastructure, associated facilities, delivery and assurance processes, supporting IT systems, product development processes and performance metrics encompassed by this review are recognised by ComReg as "shared resources", and therefore the obligation of non-discrimination applies to access to those resources regardless of the originating product or service which is consuming those shared resources. For clarity, non-discrimination encompasses Eircom's self-supplied inputs which also form inputs to the WPNIA market (as opposed to the product set) used as upstream inputs to Eircom's downstream products. For example the basis on which Eircom self-supplies metallic loops as an input to its Retail PSTN product is an input which falls within this market.

### **ComReg's position**

**Eircom shall provide access to wholesale physical network infrastructure services, associated facilities, information and all other relevant inputs under the same conditions and of the same quality as it provides for its retail operation, or for its subsidiaries or partners. Without prejudice to the generality of the foregoing, the obligation applies to infrastructure, associated facilities, delivery and assurance processes, supporting IT systems, product development processes, performance metrics and any other resource used by Eircom as an input in the supply of its retail offering, or those of its subsidiaries or partners.**

### *Operational support systems*

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

7.111 ComReg believes that there may be an incentive for Eircom to limit access or make access more difficult. It is necessary for OAOs to have all necessary access to technical interfaces, protocols, and OSS for them to take up products and allow them to compete with Eircom at the retail level.

### **Views of respondents**

7.112 One respondent believes that a requirement to provide OSS or similar is not cost-effective, and puts forward its view that all necessary information and technical interfaces have already been made available for OAOs to support wholesale products. The respondent indicates that access to information is provided through "gateway" and "broker" systems, and that these processes allow for the timely provision of information.

7.113 Another respondent believes that OAOs should have access to all relevant OSS/BSS and sub-systems, databases and GIS systems for the equivalent delivery of services to retail customers as that currently enjoyed by Eircom, its subsidiaries

or partners, without exception. This respondent also proposed that the burden of compliance should be placed on Eircom, not on OAOs. That is, that Eircom should prove it is compliant, rather than OAOs proving that it is not.

### **ComReg's views and analysis**

- 7.114 Currently, Eircom provides access to OSS for OAOs via an Eircom-managed Universal Gateway (UG) solution. ComReg only accepts this solution on the expectation that it is implemented in a non-discriminatory manner. That is, while recognising that the input supplied to Eircom's own downstream division is not supplied through the UG but by access to different systems, in respect of a particular product or service, the wholesale input supplied to Eircom's own downstream division(s) is equivalent to the comparable product or service supplied to OAOs through the UG. ComReg is of the opinion that access via the UG is less satisfactory than a situation in which the same systems are being used by the incumbent and OAOs. Acceptance of the gateway is based on the explicit understanding that the range of functionality available on the gateway is the same as that provided for Eircom's own services or those of its subsidiaries or partners. ComReg is not prescribing a particular solution as to how this objective is met. Rather, ComReg means that an OAO availing of this functionality experiences the same standard and quality of service in terms of access to information, ability to input data, time taken to process requests, quality and completeness of output, and ease of use as Eircom retail or its partners and subsidiaries.
- 7.115 ComReg would expect that any new OSS or software fulfilling a similar function developed (including such OSS as is developed to support new network technologies) would take the utmost account of the need to ensure that OAO access was the same as that self-supplied by Eircom.
- 7.116 At the time of the first round review of the WUA market<sup>148</sup>, Eircom's LLU processes were based on manual processes. In the meantime, many of the processes have been automated and ComReg is of the view that the non-discrimination obligation also applies to these processes. ComReg is also of the view that technology (in particular technology supporting remote access and authentication) is sufficiently advanced in order to allow transition to an IT architecture that allows both OAOs and Eircom's retail operation to access OSS or similar interface through the same systems. This particularly applies in the case where legacy IT systems are being upgraded and the opportunity to implement such solutions may be possible.
- 7.117 ComReg is of the view that if a request for access to OSS is refused by Eircom on the basis of risk to network integrity or any other reason the duty would rest with Eircom to justify in full such a refusal. Furthermore, any functionality currently enjoyed by Eircom's retail arm, Eircom's subsidiaries or partners, which is not made available to undertakings on the basis of possible risk to network integrity or any other reason should be communicated to ComReg and justified in full. ComReg reserves the right to decide whether the refusal of access is reasonable.

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<sup>148</sup> Response to consultation and consultations on draft decision: Market analysis - wholesale unbundled access (including shared access) to metallic loops and sub-loops ComReg 04/40

### **ComReg's position**

**Eircom shall grant all necessary access in a timely manner to technical interfaces, protocols, or other key technologies and should be required to provide such Operational Support Systems ('OSS') or similar software systems necessary to allow OAOs to efficiently order the product and manage all aspects of the product life cycle, and for the provision of related information in order to ensure fair competition in the provision of services as part of its Access obligation. OSS or similar access should be of a standard such that an undertaking availing of this functionality experiences the same standard and quality of service in terms of access to information, ability to input data, time taken to process requests, quality and completeness of output, and ease of use as Eircom retail or its partners and subsidiaries.**

**Eircom shall have an obligation to provide any relevant information and documentation on Operational Support Systems ('OSS') or similar software systems to undertakings and ComReg in a timely manner and to the same quality as it provides to its retail operation, or to its subsidiaries or partners.**

#### Transparency obligations

7.118 In the Consultation, ComReg proposed that a transparency obligation should continue to be imposed on Eircom. It is stated as part of the Access Regulations<sup>149</sup> that transparency may be used in relation to 'interconnection and/or access, requiring operators to make public specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices'.

7.119 Transparency is a necessary means of ensuring that ComReg and OAOs can observe price and non-price terms and conditions for Eircom's WPNIA products. Non-price transparency is required to cover such areas as access to information in terms of service provision and service assurance, Product development including planning dates, IT system development including planning dates, as it may have the potential to impact on the wholesale product set, IT planning, processes and procedures, service delivery and service assurance performance.

7.120 A transparency obligation is required to support any accounting separation obligations, as this would allow the calculation of costs and prices (i.e. internal price transfers) to be rendered visible. This would also allow ComReg to monitor compliance with any non-discrimination obligations, and address potential competition problems relating to cross subsidisation, price discrimination and the application of price squeezes.

7.121 The Access Regulations provide for publication of a reference offer that is sufficiently unbundled to ensure that undertakings are not required to pay for facilities which are not necessary for the service requested – this should include a description of the relevant offerings broken down into components according to

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<sup>149</sup> Regulation 10, S.I. No. 305 of 2006, "European Communities (Electronic Communications Networks and Services)(Access) Regulations 2003.



market needs and a description of the associated terms and conditions, including prices.

- 7.122 Eircom is currently required to publish an Access Reference Offer (latest version 1.21), supported by additional Industry LLU documentation. This should include the Copper Loop Frequency Management Plan (CLFMP). ComReg proposes that this obligation should be maintained.
- 7.123 ComReg proposed that a transparency obligation is required to support the publications of performance metrics as proposed in the access obligation.
- 7.124 ComReg proposed that a transparency obligation is required to support the access obligation concerning SLAs. A transparency obligation would require Eircom to publish all industry SLAs on its wholesale website.
- 7.125 In addition, ComReg proposed, in consultation with industry, to define and publish KPIs. ComReg proposes to consult further on the appropriate methodology and implementation process.
- 7.126 ComReg proposed that Eircom should be obliged to define an Internal Reference Offer, and that a transparency obligation will be required to support this access obligation.
- 7.127 ComReg proposed that the transparency obligation will apply to any reasonable information or data which an OAO may require in order to be able to efficiently offer products and services in the market, based on Eircom's wholesale inputs. ComReg would expect that, where information requested is reasonable, it should be provided according to a format requested, and within a reasonable timescale.
- 7.128 As per Recital 19 of the Access Directive, such information would include, in the case where an access request is refused or met in part, the objective criteria on which any refusal was based.

### **Views of respondents**

- 7.129 In addressing the proposed transparency obligation, some respondents referred back to comments made regarding the access obligation, as many elements of the transparency obligation apply to access. These inputs have been considered by ComReg in the analysis of response to the access obligation.
- 7.130 Most respondents agreed that a transparency obligation was necessary.
- 7.131 Two respondents have proposed that there is a need for an independent monitoring body to ensure compliance with all remedies. These respondents proposed that this body would collect and publish statistics and metrics, and report regularly.
- 7.132 One respondent proposed that the burden of compliance should be moved onto Eircom. In this respondent's view, the burden of compliance is currently on the OAO, but the respondent believes it should be up to Eircom to demonstrate that they are compliant, rather than up to OAOs to demonstrate that Eircom is not compliant.
- 7.133 Another respondent indicated that the proposed obligations were very welcome, but expressed concern as to the timescales involved in developing and publishing an Internal Reference Offer. This respondent proposed that Eircom

should be required to publish an IRO within two months of the publication of the Direction, and that thereafter, publication should align with the publication of Reference Offers to industry, and eventually both internal and external reference offers should be the same. The respondent also expressed its view that the publication of an IRO could not be considered to be an onerous task unless Eircom was in fact discriminating between OAOs and its own downstream operation – that is, if there was no discrimination at present, the IRO should be very similar to the Access Reference Offer (ARO).

### **ComReg's views and analysis**

- 7.134 ComReg notes that analysis presented above which considers how the access obligation should be complied with in a transparent manner applies also to the formulation of the transparency obligation.
- 7.135 As ComReg has noted above, some other jurisdictions have established bodies independent from the regulator, responsible for compliance. However, this has often been done in the context of other changes in the regulatory regime.
- 7.136 In this market review, ComReg's concern is to propose remedies for actual and potential competition problems, and in ComReg's view, processes already exist to ensure compliance with the obligations imposed. However, as ComReg has noted that it intends to consult further on the implementation of certain obligations such as KPIs, it would expect in a further consultation to consider the management of these remedies, and the processes associated with their implementation, as well as their content.
- 7.137 ComReg notes points made by one respondent concerning the implementation of the obligation to develop and publish an IRO, particularly concerning the length of time this could take. ComReg proposes to take a phased approach, and will initially require Eircom to develop an IRO within 3 months of the publication date of the Decision Notice on the WPNIA market review. This will then be subject to further consultation.
- 7.138 ComReg agrees with the respondent who proposed that eventually, an Access Reference Offer and an Internal Reference Offer should be very similar, and that the aim should be to align their production.
- 7.139 Having regard these considerations and to section 6 above ComReg is satisfied that an transparency obligation is based on the problem identified and is proportionate and justified in light of the objectives set out in Section 12 of the Communications Regulation Act 2002

### **ComReg's position**

**A transparency obligation shall be imposed on the SMP operator.**

**The implementation of the transparency obligation will include a requirement to publish and keep updated an Access Reference Offer for all products in the wholesale physical network infrastructure access market, and to publish additional industry documentation as required. The ARO shall be sufficiently unbundled so as to ensure that other undertakings availing of such facilities are not required to pay for facilities which are not necessary for the service requested and the ARO shall 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.**

**The ARO shall contain at least the elements set out in the Schedule to the Access Regulations<sup>150</sup>**

**Eircom shall publish at least two months in advance any proposed changes to the ARO and any proposed changes to Wholesale prices and the application of such prices on its website for the purpose of notifying all interested parties of such changes. Eircom shall notify ComReg at least one month in advance of any such publication taking place. This period of one month may be varied from time to time with the agreement of ComReg. Proposed changes to the ARO and proposed changes to Wholesale prices and the application of such prices shall not be implemented without prior notification to ComReg and OAOs.**

**ComReg may issue Directions to Eircom from time to time requiring it to publish specified information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices. As provided for by Regulation 10 (5) of the Access Regulations, ComReg may issue Directions requiring Eircom to make changes to the ARO to give effect to obligations imposed in this Decision Instrument and to publish the ARO with such changes.**

**Eircom shall publish industry SLAs and any updates on its wholesale website.**

**The transparency obligation will apply to the publication of performance metrics regarding Eircom's delivery of services encompassed by this market and comparable services underlying Eircom's retail offering or those of its subsidiaries or partners such that a meaningful comparison can be made between these sets of metrics. The metrics to be published will be as directed by ComReg.**

**Eircom shall be obliged to meet KPIs defined by ComReg in consultation with industry. These Key Performance Indicators will be published by Eircom and Eircom should be obliged to meet the service levels specified in those indicators. The implementation of this obligation will be subject to further consultation.**

**Eircom shall be obliged to develop and publish an Internal Reference Offer within 3 months of the date of publication of the Decision Notice on this WPNIA review. This will then be subject to consultation before the final IRO is published.**

**Eircom shall be obliged to provide undertaking(s) with information, document(s), which they may reasonably require in order to be able to efficiently offer products and services in the market in a timely manner, based on Eircom's wholesale inputs. This shall include the provision on a timely basis of NGN plans.**

**Eircom shall be obliged to provide, on foot of a reasonable request from an undertaking or undertakings, appropriate performance metrics either requested over a short period to address a particular performance related issue or over an extended period in order to carry out trend analysis.**

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<sup>150</sup> Schedule to the Access Regulations entitled: Minimum list of terms to be included in a reference offer for unbundled access to the twisted metallic pair local loop to be published by notified operators.

**Where an access request is refused or not fully met, Eircom shall provide its reasoning to the operator requesting access and to ComReg.**

Non-discrimination

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

7.141 Pursuant to Regulation 11 of the Access Regulations, non-discrimination requires that the SMP undertaking ‘applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services, and provides services and information to others under the same conditions and of the same quality as it provides to its retail division, or to its subsidiaries or partners’<sup>151</sup>. A non-discrimination obligation requires that OAOs are treated in an equivalent manner to each other, and no less favourably than an incumbent’s internal divisions. For example in terms of product development and access to OSS, ComReg is of the view that OAO access should be the same or at least equivalent to that enjoyed by Eircom’s retail arm. ComReg expects that through its non-discrimination obligation Eircom will ensure that the quality of all the services and information provided to OAOs by Eircom throughout the various stages of the product lifecycle (i.e. from product development to provisioning and fault repair), are of the same standard and quality and offered under the same conditions as that consumed by Eircom’s retail operation.

7.142 This applies to existing services and information, and to new product developments initiated either by Eircom internally or by OAOs (for example, through the fora). ComReg expects that Eircom will regularly review all aspects of the regulated wholesale product set and will ensure that information and services are offered to the same standard and quality as that offered to Eircom’s retail operation.

7.143 ComReg proposed that there are three principal components to an obligation not to discriminate:

7.144 Eircom should be obliged not to discriminate between OAOs, and should provide OAOs with equivalent services in equivalent circumstances. It is important to ensure that there is no discrimination regarding quality of service between one wholesale customer of the SMP operator and another, which could afford one operator a competitive advantage.

7.145 Eircom should be obliged not to discriminate between OAOs and its own downstream operations. In particular, ComReg proposes that Eircom be required to provide information and services to alternative operators in timescales, on a basis, and of a quality, which are at least as good as those provided to Eircom’s retail arm and associates.

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<sup>151</sup> Access Regulations, Regulation 11

- 7.146 Eircom should be obliged not to discriminate amongst its wholesale offerings in terms of the quality of service offered. That is, Eircom should ensure that differences in the quality of provision of its various wholesale products does not negatively impact on the take-up of particular products.
- 7.147 Finally, ComReg noted that it is important that information gained by Eircom as a result of their provision of wholesale services to another operator is not improperly used by Eircom's downstream arms in any manner. In the absence of regulation, a downstream part of the operation could use information obtained by an upstream part, and use this to target other operators' customers.
- 7.148 In order to ensure that there is no discrimination which would adversely affect the retail broadband market, ComReg considered that Eircom's retail operation should not be able to avail of new wholesale inputs until these inputs are also available for use by OAOs.

### **Views of respondents**

- 7.149 One respondent objected to the use of the term "equivalence".
- 7.150 All other respondents agreed that an obligation not to discriminate was necessary, and several provided specific examples of how the obligation should be imposed.
- 7.151 For instance, one respondent proposed that OAO should be given notice of any potential product development when it was submitted by Eircom Retail to Eircom Wholesale for product evaluation. The respondent suggested that notice should be given when the first written or verbal request for a product was provided, regardless of whether the product was approved or not. Further, OAOs should be briefed at each decision point in the product life cycle.
- 7.152 Another respondent stated that, in its view, non-discrimination should apply both in relation to information provided and in relation to Quality of Service, and should apply to non-discrimination between wholesale infrastructure network access products and wholesale broadband access products.

### **ComReg's views and analysis**

- 7.153 ComReg refers to the discussion of "equivalence" above and reiterates that an obligation not to discriminate is essential for ensuring that behaviour on the market enables efficient operators to compete. The non-discrimination obligation applies to the need for Eircom to treat all OAOs in an equivalent manner; to treat OAOs in the same manner as Eircom treats its own retail operation; and to avoid discriminating between wholesale products.
- 7.154 ComReg notes that measures discussed in the context of the access obligation, such as the obligation to develop an Internal Reference Offer, are required to demonstrate compliance with the non-discrimination obligation.
- 7.155 ComReg is of the view that in light of issues raised in the response to consultation clarity is required regarding the non-discrimination obligation. While noting that it is not in a final form, ComReg has taken account of the European Commission's Draft Recommendation on the Regulation of NGA, in which Annex 2 deals specifically with the application of equivalence. In the context of the full WPNIA product life cycle, non-discrimination can be categorised as follows:

#### Existing services and functionality

7.156 ComReg's position regarding access to OSS and the method(s) of access to OSS provided for undertakings is detailed above. However ComReg is of the view that non-discrimination means the methods of access to OSS currently offered by Eircom to undertakings in order to handle transactions associated with all aspects of the WPNIA product set must offer the same standard of functionality, quality of service, ease of input, completeness and quality of output, order handling and monitoring, fault handling and monitoring, for all elements of the product life cycle i.e. service delivery, repair, service migration etc as enjoyed by Eircom's retail operation or its partners and subsidiaries in equivalent circumstances.

#### New developments including those requested by Eircom's retail operation or subsidiaries

7.157 ComReg's view is that new developments to Eircom's systems or services which take place as a result of system upgrades or repair or on foot of an internal Eircom requirement (for example, a request generated by Eircom's retail operation) must be made available, to the standard already outlined, to undertakings at the same time as the functionality is made available to Eircom's retail arm, its partners or subsidiaries.

#### New developments requested by undertakings

7.158 If a request is deemed reasonable and is acceded to then the solution must be developed in the same time scale and to the same quality as that which would be enjoyed by Eircom's retail arm, its partners and subsidiaries in similar circumstances.

7.159 Having regard to these considerations and to section 6 above ComReg is satisfied that a non-discrimination obligation is based on the problem identified and is proportionate and justified in light of the objectives set out in Section 12 of the Communications Regulation Act 2002.

#### **ComReg's position**

**The remedy of non-discrimination shall be imposed on Eircom. Eircom shall ensure that access provided to wholesale physical network infrastructure services, associated facilities, information and all other relevant inputs shall be provided under the same conditions, of the same quality, and in the same timescales as it provides for its own retail operation or those of its subsidiaries or partners. Without prejudice to the generality of the foregoing, the obligation applies to infrastructure, associated facilities, delivery and assurance processes, supporting IT systems, product development processes, performance metrics and any other resource used by Eircom as an input in the supply of its retail offering, or those of its subsidiaries or partners.**

**During the lifetime of this review, where Eircom has an obligation to offer certain wholesale products, services or associated facilities which have not yet been made available at the date of any Decision made on foot of this review, it may not offer these or functionally similar wholesale products, services or associated facilities to its retail arm until such time as wholesale elements are made available to OAOs.**

## Price Control and Cost Accounting

### *Price control*

- 7.160 Regulation 14 provides that ComReg may impose obligations relating to price control and cost accounting.
- 7.161 Regulation 14 (1) provides that price control obligations may be imposed where a market analysis indicates that a lack of effective competition means that the operator concerned might sustain prices at an excessively high level, or apply a price squeeze to the detriment of end-users.
- 7.162 Regulation 14(2) requires that when considering whether to impose price controls, ComReg shall take into account any investment made by the operator in electronic communications networks or services or associated facilities which the Regulator considers relevant and allow the operator a reasonable rate of return on adequate capital employed, taking into account the risks involved. Regulation 14 (3) provides that ComReg shall ensure that any cost recovery mechanism or pricing methodology that it imposes serves to promote efficiency and sustainable competition and maximise consumer benefits. may also take account of prices available in comparable competitive markets.
- 7.163 ComReg has fully considered all the requirements of the Regulation, and has developed these remedies based on its analysis of competition, the competition problems identified, and following the analysis of options considered in the context of Regulatory Impact Assessment.
- 7.164 In order to promote competition, ComReg proposed in the Consultation to continue to impose price controls in respect of WPNIA products and services. Absent regulation, a vertically integrated operator with market power in wholesale markets may be able to exert its market power by charging an excessive price for wholesale inputs, and may be able to foreclose the retail market by means of a margin squeeze. ComReg proposed that Eircom should be subject to a general obligation not to squeeze prices.
- 7.165 The previous market review in relation to Wholesale Unbundled Access (WUA) established that Eircom should be obliged to offer prices<sup>152</sup> for WUA which are cost-oriented. The implementation of this cost-oriented price control has included ComReg's determination of the price for ULMP<sup>153</sup>, and for Line Share.<sup>154</sup> ComReg is currently consulting on reviewing the methodology for setting a rental price for shared access to the unbundled local loop<sup>155</sup>, and expects to consult further on the methodology for setting a cost-oriented price for fully unbundled access shortly. It is not envisaged that the current monthly price for LLU will be changed until this process is complete.

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<sup>152</sup> These prices can be located on [www.Eircom.wholesale.ie](http://www.Eircom.wholesale.ie) in the Access Reference Offer (ARO) price list.

<sup>153</sup> ComReg 15/04

<sup>154</sup> ComReg 8/01, Sept 2001

<sup>155</sup> ComReg 08/23 19 March 2008

- 7.166 ComReg noted that despite the implementation of price controls under the previous market review, Irish LLU prices remain amongst the highest in the EU. The on-going review of the methodologies associated with ensuring that all prices for WPNIA products and associated facilities are cost-oriented is therefore imperative. It is ComReg's aim to ensure that OAOs are able to buy WPNIA inputs at prices which reflect the underlying costs of an efficient operator, and which therefore allow them to compete in the retail broadband market. At the same time, ComReg wishes to ensure that Eircom is compensated for operational efficiencies.
- 7.167 In the Consultation, ComReg considered the implications of the deployment of NGN, and proposed that, under certain conditions, it may forbear from direct intervention in setting prices for NGN/NGA based WPNIA products and services.
- 7.168 In the Consultation, it was proposed that if agreement on the pricing of NGA based WPNIA services were reached in a manner satisfactory to ComReg, ComReg would indicate a minimum and maximum period for which prices should not change and over which it would not intervene
- 7.169 ComReg would reserve the right to obtain any financial, operational or other information that it required to form a view as to either the reasonableness or cost oriented nature of pricing before, during or after commercial discussions have taken place.

### **Views of respondents**

- 7.170 One respondent indicated that, in its view, it was unclear how a general obligation not to squeeze prices would be implemented and monitored on an *ex ante* basis. The respondent believes that ComReg's proposal to continue the obligations of non-discrimination and cost-orientation means that it is difficult to justify a separate obligation not to squeeze margins. The respondent also pointed out that ComReg has the authority to investigate and proceed against anti-competitive behaviour under competition rules.
- 7.171 Another respondent proposed that, in addition to ensuring that the relationship between Eircom's wholesale and retail pricing does not constitute a margin squeeze, it is also important to ensure that the relationship between the pricing of WPNIA and WBA does not constitute a margin squeeze. The respondent cited regulatory action taken in other jurisdictions designed to encourage a stable and sufficient margin for LLU operators.
- 7.172 A further respondent supported the proposal that there should be a general obligation not to squeeze prices, and supported the proposal that wholesale prices for WPNIA products and services should be cost-oriented. However, the respondent emphasised that an inefficient price structure could distort investment decisions, and so prices for WPNIA products should not be set at a level which constitutes an artificial subsidy.
- 7.173 Several respondents raised the issue of migration charges. Currently there is a charge of €47 for Intra migrations. One respondent described the migration charge as anti-competitive, and believes it is a serious barrier to growing LLU volumes.



- 7.174 Most respondents were in favour of the obligation that prices for WPNIA products and services should be cost-oriented. However, one respondent believes that “inter-modal” competition has reached a point where a price increase in WPNIA services would not be profitable. The respondent proposed that, even if ComReg were to decide that a cost orientation obligation should still be applied, ComReg should identify the conditions under which such an obligation should be removed, and should establish a procedure for sunseting the obligation.
- 7.175 In the Consultation, ComReg proposed that current price control obligations would remain in place until the market review process was complete. One respondent noted that ComReg’s proposal could be interpreted as suggesting that the annual price increase in LLU provided for in D14/04, and due on 1 December 2008, would not take effect. The respondent proposed that ComReg should review Decision D15/04 to allow annual increases on 1 December until the market review and LLU price control reviews are complete. ComReg clarifies that the current price of the ULMP will be maintained until the review of LLU pricing is complete.
- 7.176 Respondents put forward very different views on ComReg’s proposal to forbear from direct intervention on price setting for NGN-based WPNIA services, should a number of conditions be met.
- 7.177 One respondent believes that there is no basis for ComReg to apply any regulations to NGN access, because the respondent perceives numerous uncertainties in how NGN will be deployed. While welcoming ComReg’s proposal to forbear from setting prices, the respondent believes the conditions attached are onerous, and would give OAOs little incentive to negotiate. The respondent proposes that ComReg should defer consideration of NGN-based WPNIA products and services until a later date.
- 7.178 Another respondent agreed with ComReg’s proposal, and noted that, in its view, the conditions attached to forbearance are mainly proportionate. However, the respondent suggested that agreement on pricing within two months of the start of commercial negotiations was unrealistically short, and recommended that six months would be more reasonable.
- 7.179 Other respondents were strongly against any proposal to forbear from intervention. One respondent stated that, in its view, the absence of price controls would have a negative impact on competition across the broadband market. Another respondent expressed concern that ComReg would even consider forbearance, as in its view, failing to intervene on price controls could hinder competition, stifle development and ultimately have a negative long term effect on the take up of next generation broadband at a retail level. This respondent notes the conditions proposed by ComReg in considering intervention, but states that, in its view, this would not work in practice, citing slow progress on LLU even with full regulatory intervention.

### **ComReg’s views and analysis**

- 7.180 ComReg has considered respondents’ views on different means of addressing potential price squeezes. ComReg understands that competition powers allow intervention following an allegation of anti-competitive behaviour. However, this is necessarily on an *ex post* basis, by which time the effects of any

margin squeeze are likely to have had a negative impact on the market. ComReg therefore believes that it would not be sufficient to rely on an *ex post* measure.

7.181 ComReg notes comments made by one respondent regarding the potential for a price squeeze between the prices of wholesale products as well as between wholesale and retail prices.

7.182 ComReg's objective here is to encourage efficient infrastructure-based competition, and we recognise that this objective could be undermined if the relationship between the WPNIA price and the WBA price distorts incentives to invest and operate in the WPNIA market. At present, the concern is between LLU pricing and bitstream pricing. Therefore, ComReg wishes to establish a principle that will maintain an economic space between WPNIA and WBA pricing.

7.183 In considering the migration charge applied by Eircom, ComReg notes that intra migrations occur where there is no change in the customer/operator broadband relationship with the consumer. The current list of "Intra" migrations is as follows:

- Bitstream to Line Share
- PSTN with Bitstream to Glump/ULMP
- SB-WLR with Bitstream to Glump/ULMP
- SB-WLR with Line Share to Glump/ULMP
- SB-WLR to Glump/ULMP
- Return paths to wholesale operators of Eircom for all of the above

7.184 ComReg will consult in the coming months on the specification of cost orientation for migrations between wholesale services.

7.185 ComReg notes that most respondents believe that Eircom's WPNIA prices should be cost-oriented, but that one respondent believes that the extent of platform competition diminishes the need for this obligation. As discussed in the Market Definition and Competition Analysis sections of this Response to Consultation, ComReg strongly disagrees that the market for WPNIA services in Ireland can be characterised by platform competition of this order. ComReg has fully justified the need for obliging wholesale physical access to Eircom's network infrastructure in order to address actual and potential competition problems, and the market review indicates a need for prices to be cost-oriented.

7.186 ComReg has carefully considered the divergent and strongly-expressed views over its proposal to forbear from the regulation of NGN-based WPNIA products. On the one hand, the market is uncertain as to the potential supply and demand characteristics of NGN products and services. On the other hand, ComReg needs to establish an approach to products and services defined within this regulated market for wholesale network infrastructure access. ComReg has emphasised throughout this Market Review that the focus is on addressing bottlenecks in the access network, and that the regulatory approach must facilitate investment while safeguarding competition.

- 7.187 ComReg considers that the respondent who objects to any consideration of NGN products and services, and objects to the attachment of conditions to a proposal to forbear, misunderstands the need to establish a regulatory approach. In ComReg's view, the respondent's objections may have merit if ComReg had tried to actually set prices. However, ComReg was establishing its approach to NGN-based services within the WPNIA market, and proposing that it would forbear from intervention if negotiation between Eircom and OAOs was able to resolve the pricing of NGN-based services within a reasonable timeframe and according to reasonable commercial practice.
- 7.188 ComReg has taken full account of requirements under Regulation 14, particularly Regulation 14(2) which emphasises that ComReg must take account of any investment made by the SMP operator in networks, services and associated facilities, and that the operator must be allowed a reasonable rate of return taking into account the risks involved. In light of the divergent views which have been expressed in responding to this Consultation, and in recognition that the European Commission's Recommendation on NGA Regulation will be published early in 2009, ComReg has decided to consult further on the detail of the specific remedies associated with NGN/NGA regulation, including pricing.
- 7.189 Having regard these considerations and to section 6 above ComReg is satisfied that a price control obligation is based on the problem identified and is proportionate and justified in light of the objectives set out in Section 12 of the Communications Regulation Act 2002.

#### **ComReg's position**

**Eircom shall be obliged to ensure that the relationship between its wholesale and retail pricing, and between its wholesale products, does not constitute a price squeeze.**

**Eircom shall be obliged to offer WPNIA services at prices which are cost-oriented.**

**Eircom shall be obliged to maintain the current price control pending the outcome of further consultation**

#### *Cost Accounting*

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

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

7.193 In 2005, ComReg had been engaged in an initial public consultation on the detailed implementation of accounting separation and cost accounting remedies under the new Framework. No decision notice was issued as a result of this consultation. ComReg intends to re-consult shortly on the detailed implementation of accounting separation and cost accounting remedies originally discussed in 2005.

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

### **Views of respondents**

7.195 Respondents generally agreed that existing cost accounting requirements should be maintained, pending the outcome of implementation consultations. Two respondents made specific points which will be considered in the implementation consultation.

### **ComReg's position**

7.196 Having regard to these considerations and to section 6 above ComReg is satisfied that a cost accounting system obligation is based on the problem identified and is proportionate and justified in light of the objectives set out in Section 12 of the Communications Regulation Act 2002.

**Further to Regulation 12 of the Access Regulations, cost accounting system obligations on Eircom will be continued until the detailed implementation consultations are complete.**

### Accounting Separation

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

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

7.199 Since the previous market review, ComReg has been engaged in a public consultation on the detailed implementation of accounting separation and cost accounting remedies under the new Framework. In the Consultation, ComReg proposed to maintain existing accounting separation obligations until the detailed implementation consultations are complete.

### **Views of respondents**

7.200 Respondents generally agreed that existing cost accounting requirements should be maintained, pending the outcome of implementation consultations. Two respondents made specific points which will be considered in the implementation consultation.

7.201 Having regard to these considerations and to section 6 above ComReg is satisfied that an accounting separation obligation is based on the problem identified and is proportionate and justified in light of the objectives set out in Section 12 of the Communications Regulation Act 2002

**Further to Regulation 12 of the Access Regulations, accounting separation obligations on Eircom will be continued until the detailed implementation consultations are complete.**

## **8 Submitting Comments**

The consultation period will run from 23 December 2008 to 13 February 2009, during which ComReg welcomes written comments on any of the issues raised in this paper.

In order to promote further openness and transparency ComReg will publish all respondents' submissions to this consultation, subject to the provisions of ComReg's guidelines on the treatment of confidential information – ComReg 05/24

### **Please note**

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.

As it is ComReg's policy to make all responses available on its web-site and for inspection generally, respondents to consultations are requested to clearly identify confidential material and place confidential material in a separate annex to their response

Such Information will be treated subject to the provisions of ComReg's guidelines on the treatment of confidential information – ComReg 05/24

## Appendix A – Draft Decision Instrument

NOTE: *This Draft Decision Instrument is for information purposes only and is not the final Decision Instrument. Respondents to the consultation are asked to provide their detailed views from a commercial, practical and legal perspective in relation to the Draft Decision Instrument.*

*ComReg is notifying the significant market power designation to the European Commission for its approval, as it is legally required to do pursuant to Regulation 20 of the Framework Regulations. The significant market power designation and this decision instrument cannot be made final, until the European Commission has approved it.*

### 1 STATUTORY POWERS GIVING RISE TO THIS DECISION INSTRUMENT

1.1 This Decision Instrument (“Decision”) relates to the market for wholesale network infrastructure access defined in the document entitled *Market Analysis: Wholesale (Physical) Network Infrastructure Access Response to Consultation and Draft Decision* Document No. 08/104 and as identified in the European Commission’s Recommendation<sup>156</sup> and is made by the Commission for Communications Regulation (“ComReg”):

- i. Having had regard to sections 10 and 12 of the Communications Regulations Act, 2002;
- ii. Having taken account, of its functions under Regulation 6(1) of Access Regulations<sup>157</sup>;
- iii. Having where appropriate complied with the Policy Directions made by the Minister further to section 13 of the Communications Regulation Act 2002<sup>158</sup>;
- iv. Having taken the utmost account of the European Commission’s Recommendation and the Significant Market Power Guidelines<sup>159</sup>;

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<sup>156</sup>European Commission Recommendation of 17 December, 2007 on Relevant Product and Service Markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services – OJ L 344/65.

<sup>157</sup> S.I. No. 305 of 2003 the European Communities (Electronic Communications Networks and Services) (Access) Regulations 2003 (“Access Regulations”) which transposes Directive 2002/19/EC of the European Parliament and the Council of 7 March 2002 on access to, and interconnection of, electronic communications networks and associated facilities.

<sup>158</sup> Policy Directions made by Dermot Ahern T.D. (the then) Minister for Communications, Marine and Natural Resources on 21 February, 2003 and 26 March, 2004.

- v. Having had regard to the market definition, market analysis and reasoning conducted by ComReg in *Consultation Market Analysis: Wholesale Unbundled Access* ComReg Document No. 08/41<sup>160</sup>, the analysis and reasoning set out *Market Analysis: Wholesale (Physical) Network Infrastructure Access Response to Consultation and Draft Decision* Document No. 08/104 and the reasoning and individual decisions set out previously in this document, each of which form part of and shall where necessary, be construed with this Decision Instrument;
- vi. Having taken account of the submissions received in relation to Document No. 08/41;
- vii. Having notified the draft measure imposing significant market power to the European Commission, further to Regulation 20 of the Framework Regulations whereby it was also made accessible to national regulatory authorities (NRAs) in other EU Member States, and the European Commission having informed ComReg that it had examined the draft measure and that it had no comments in relation thereto and pursuant to Article 7(5) of the Framework Directive<sup>161</sup>, ComReg could adopt the resulting draft measure;
- viii. Having consulted with the Competition Authority further to Regulation 27 of the Framework Regulations<sup>162</sup>;
- vii. Pursuant to Regulations 25, 26 and 27 of the Framework Regulations and Regulations 9, 10, 11, 12, 13 and 14 of the Access Regulations.

1.2 The provisions of ComReg Decision No. [] and the individual decisions in the Response to Consultation and Decision in ComReg Document No. [] (Decision No. []) shall where necessary be construed as forming part of this Direction.

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<sup>159</sup> European Commission Guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services of 11 July 2002 – OJ C 165/03.

<sup>160</sup> Dated 11 June 2008

<sup>161</sup> Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services OJ L 108/33.

<sup>162</sup> S.I. No. 307 of 2003 the European Communities (Electronic Communications Networks and Services) (Framework) Regulations 2003 which transposes Directive 2002/21/EC of the European Parliament and the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services.



## **2 SCOPE AND APPLICATION**

- 2.1 This Decision Instrument applies to eircom Limited and its subsidiaries, and any undertaking which it owns or controls and any undertaking which owns or controls Eircom Limited, and its successors and assigns (“Eircom”) in respect of activities falling within the scope of the market defined in section 3 of this Decision Instrument
- 2.2 This Decision Instrument is binding upon Eircom and Eircom shall comply with it in all respects.

## **3 MARKET DEFINITION**

- 3.1 Pursuant to Regulation 26 of the Framework Regulations, and in accordance with the European Commission’s Recommendation and taking utmost account of the Significant Market Power guidelines, the product market in this Decision Instrument is defined as the market for wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location (“the Market”) as described in section [x] of the document entitled *Market Analysis: Wholesale (Physical) Network Infrastructure Access Response to Consultation and Draft Decision* Document No. 08/104.
- 3.2 Pursuant to Regulation 26 of the Framework Regulations, and taking utmost account of the European Commission’s Significant Market Power Guidelines and the European Commission’s Explanatory Note<sup>163</sup>, the relevant geographic market with respect to the market is defined as Ireland.

## **4 DESIGNATION OF UNDERTAKING WITH SIGNIFICANT MARKET POWER (“SMP”)**

- 4.1 Pursuant to Regulation 25 and Regulation 27 of the Framework Regulations and consistent with the European Commission’s Significant Market Power Guidelines, Eircom is designated as having SMP on the Market.

## **5 SMP OBLIGATIONS IN RELATION TO CURRENT GENERATION PRODUCTS, SERVICES AND FACILITIES PROVIDED (SECTIONS 5 TO 11 OF THE DECISION INSTRUMENT)**

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<sup>163</sup> Commission Staff Working Document Explanatory Note accompanying document to the European Commission’s Recommendation on Relevant Product and Service Markets within the electronic communications sector susceptible to ex ante regulation SEC (2007) 1483/2 13 November 2007

5.1 ComReg is imposing certain SMP obligations on Eircom in respect of the current generation of products, services and associated facilities in the market for Wholesale Physical Network Infrastructure Access in accordance with and pursuant to Regulations 9, 10, 11, 12, 13 and 14 of the Access Regulations, as detailed further in sections 6 to 11 below. Current generation products, services and associated facilities in the Market are those products, services and associated facilities which are at present offered over copper using Digital Subscriber Line technology, including but not limited to those products, services, associated facilities and variants of those, which are specified in the current Version 1.21 of Eircom's Access Reference Offer, as may be from time to time amended.

## **6 OBLIGATION TO PROVIDE ACCESS**

- 6.1 Pursuant to Regulation 13(1) of the Access Regulations, in respect of the current generation of products, services and associated facilities in the Market, Eircom shall meet all reasonable requests for access to products, services, features, network elements, information or additional associated facilities, including but not limited to backhaul, access to duct and access to cabinet space, by other authorised operators ("OAOs") requesting access or use of such access products, features or additional associated facilities in the Market.
- 6.2 Without prejudice to the generality of section 6.1, Eircom shall provide to OAOs, access to the following products, services and facilities to facilitate competition in the provision of services in the market:-
- I. Full unbundled local path including full unbundled local metallic path ('ULMP');
  - II. Combined geographic number portability ("GNP")\_ and full unbundled local path including full unbundled local metallic path ("GLUMP");
  - III. Shared access line sharing;
  - IV. Full sub-loop unbundling, combined with GNP where required;
  - V. Shared sub-loop unbundling;
  - VI. Collocation including cabinet collocation;
  - VII. Associated facilities including migration between wholesale products in the Market and in other markets where Eircom is designated with SMP. Migration paths shall include but not be limited to migrations between current and next generation wholesale services which ensure minimal consumer inconvenience.
  - VIII. Technical interfaces, protocols or other key technologies that are indispensable for the interoperability of services or virtual network services related to the Market;
  - IX. Operational support systems or, similar software systems;
  - X. Ducts;
  - XI. Backhaul including backhaul from the exchange;
  - XII. Access to cabinet space;
- 6.3 Eircom shall continue to offer access to the services and facilities described in this section in accordance with the product descriptions and on the terms and conditions which are specified in the current Version 1.21 of the access reference offer ("ARO") as may be amended from time to time and the related manuals currently published on its website [www.eircomwholesale.ie](http://www.eircomwholesale.ie). as may be amended from time to time.

- 6.4 Without prejudice to the generality of section 6.1 and 6.2, Eircom shall:
- (i) Pursuant to Regulation 13 (2) (a) of the Access Regulations, give third parties access to network elements and or facilities relating to current generation products, services and or associated facilities in the Market;
  - (ii) Pursuant to Regulation 13 (2) (b) of the Access Regulations negotiate in good faith with undertakings, requesting access;
  - (iii) Pursuant to Regulation 13 (2) (c) of the Access Regulations, not withdraw access to facilities granted without the prior approval of ComReg;
  - (iv) Pursuant to Regulation 13 (2) (e) of the Access Regulations, grant open access to technical interfaces, protocols and other key technologies that are indispensable for the interoperability of services or virtual network services; and
  - (iv) Pursuant to Regulation 13 (2) (h) of the Access Regulations, provide access to Operational Support Systems (“OSS”) or similar software systems necessary to ensure fair competition in the provision of services.

## **7 CONDITIONS ATTACHED TO THE ACCESS OBLIGATIONS**

- 7.1 Without prejudice to the generality of section 6 the obligations and requirements set out in that section shall, pursuant to Regulation 13(3) of the Access Regulations, be subject to conditions dealing with fairness, reasonableness and timeliness.
- 7.2 Access shall be provided in a timely, efficient and non-discriminatory manner.
- 7.3 It shall be a condition of the obligations and requirements contained at section 6 that Eircom shall provide products, services, features or associated facilities in the Market in compliance with specified key performance indicators (KPIs) to ensure that Eircom is delivering products, services, features or associated facilities to an acceptable standard. The content of the specified performance indicators will be subject to further consultation.
- 7.4 Eircom shall grant access in a timely manner to technical interfaces, protocols, or other key technologies such as the OSS or similar software systems as may be reasonably required by OAOs.
- 7.5 OSS access when reasonably required by OAOs shall be of a standard such that an undertaking availing of this access experiences the same standard and quality of service as that provided to Eircom itself or its partners and subsidiaries in terms of access to information, ability to input data, time taken to process requests, quality and completeness of output, and ease of use as Eircom itself or its partners and subsidiaries.
- 7.6 Pursuant to Regulation 13 (3) of the Access Regulations, it shall be a condition of the obligation to provide the product, service, feature or additional associated facility referred to in sections 6.1 and 6.2, related to fairness, reasonableness and timeliness, that Eircom shall:

- i. Conclude or maintain, as appropriate, legally binding service level agreements (“SLAs”) which include associated performance metrics with OAOs in respect of those products, services, features or additional associated facilities referred to in sections 6.1 and 6.2;
- ii. Negotiate in good faith with OAOs in relation to the conclusion of legally binding and fit-for-purpose SLAs;
- iii. Ensure that all SLAs include provision for service credits arising from a breach of an SLA. Agreed service credits shall be a matter of negotiation between Eircom and OAOs and recovery of service credits shall be in the first instance, a matter for OAOs and Eircom. This shall not preclude the possibility of ComReg exercising its dispute resolution powers, or of intervening on its own initiative;
- iv. SLAs should detail how service credits are calculated, to include the provision of an example calculation;
- v. Payment of service credits where they occur shall be made in a timely and efficient manner;
- vi. Update SLAs as required, which updates may also be required by ComReg.

## **8 OBLIGATION OF NON-DISCRIMINATION**

- 8.1 Eircom shall have an obligation of non-discrimination as provided for by Regulation 11 of the Access Regulations. This obligation will apply to all products, services, facilities and appropriate process points in respect of current generation products, services and or associated facilities in the Market.
- 8.2 Without prejudice to the generality of section 8.1, Eircom shall:
  - i. Apply equivalent conditions in equivalent circumstances to other undertakings providing equivalent services; and
  - ii. Ensure that all services and information including access provided under section 6 are provided to other undertakings under the same conditions and of the same quality as the services and information that Eircom provides to its own services or those of its subsidiaries or partners.
  - iii. For the avoidance of doubt, sections 8.2(i) and 8.2(ii) also apply to the use by Eircom of network elements, products, services or associated facilities in the Market as inputs to downstream products.
- 8.3 Where Eircom has an obligation to offer certain products, services or associated facilities or variants of those, which have not yet been made available at the date of the Decision Instrument, it may not offer those or functionally similar products, services or associated facilities as inputs to downstream products, services or associated facilities sold by Eircom until such time as the wholesale elements of

those products, services or associated facilities or variants of those, are available to OAOs to enable OAOs to offer a similar retail offering in accordance with the non-discrimination obligation.

- 8.4 Information provided to OAOs under section 9 shall be provided to the same standard as that provided to Eircom's own services or to those of its subsidiaries or partners.
- 8.5 Information which is supplied to Eircom including to its own services or subsidiaries or partners which may reasonably be required by an OAO shall be made available to the OAO on the same terms that Eircom provides such information to its own services, or subsidiaries or partners.

## **9 OBLIGATION OF TRANSPARENCY**

- 9.1 Eircom shall have an obligation of transparency as provided for by Regulation 10 of the Access Regulations in respect of the current generation of products services or associated facilities in the Market.
- 9.2 Without prejudice to the generality of the obligation in section 9.1, pursuant to Regulation 10(2) of the Access Regulations, Eircom shall publish and keep updated an ARO for the services and facilities referred to in section 6. The ARO shall be sufficiently unbundled so as to ensure that other undertakings availing of such facilities are not required to pay for facilities which are not necessary for the service requested and the ARO shall include:
- (i) A description of the relevant offerings broken down into components according to market needs; and
  - (ii) A description of the associated terms and conditions, including prices.

The ARO shall contain at least the elements set out in the Schedule to the Access Regulations<sup>164</sup>.

- 9.3 Eircom shall publish at least two months in advance any proposed changes to the ARO and any proposed changes to wholesale prices (including prices for new products and services) and the application of such prices on its website for the purpose of notifying all interested parties of such changes. Eircom shall notify ComReg at least one month in advance of any such publication taking place. This period of one month may be varied from time to time with the agreement of ComReg. Proposed changes to the ARO and proposed changes to wholesale prices and the application of such prices shall not be implemented without prior notification to and approval by ComReg and without prior notification to OAOs.

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<sup>164</sup> Schedule to the Access Regulations entitled: Minimum list of terms to be included in a reference offer for unbundled access to the twisted metallic pair local loop to be published by notified operators.

- 9.4 ComReg may issue Directions to Eircom from time to time requiring it to publish information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use and prices. As provided for by Regulation 10(5) of the Access Regulations, ComReg may issue Directions requiring Eircom to make changes to the ARO to give effect to obligations imposed in this Decision Instrument and to publish the ARO with such changes.
- 9.5 Without prejudice to the generality of the obligation in section 9.1, Eircom shall make public information, such as accounting information, technical specifications, network characteristics, terms and conditions for supply and use, and prices, in respect of the services and facilities referred to in section 6, as specified by ComReg from time to time. Eircom shall continue to publish the information specified in the current Version 1.21 of the ARO as may be from time to time amended and the related manuals published as Industry LLU Documentation as may be amended from time to time and as currently published on its website [www.eircomwholesale.ie](http://www.eircomwholesale.ie).
- 9.6 Without prejudice to the generality of the obligation in section 9.1, Eircom shall be obliged to provide all necessary information which supports existing and future products and services in the Market.
- 9.7 For the avoidance of doubt, any new product, service or associated facility in the Market shall not be launched without prior notification to ComReg and OAOs. This includes any product, service or facility in the Market which is self-supplied to Eircom, its own services, subsidiaries or partners.
- 9.8 Eircom shall publish all SLAs (and any updates thereto) concluded on the Eircom wholesale website.
- 9.9 Eircom shall provide to ComReg in writing or in such other form as may be specified by ComReg, on a monthly basis or on such other alternative periodic basis as may be specified by ComReg, performance statistics which shall be specified by ComReg, in respect of the services provided to OAOs and, as appropriate, services provided to Eircom itself. ComReg may at its discretion publish such statistics. In addition, ComReg may if it deems necessary and proportionate, take measures to verify the accuracy of the reported performance statistics, including by way of an audit by ComReg or a third party.
- 9.10 Eircom shall be obliged to provide information about appropriate performance metrics and other necessary information to an OAO further to a reasonable request to do so.
- 9.11 Where a request for access or information is refused or met only in part, Eircom shall provide the objective criteria for refusing access to the OAO requesting the access and to ComReg.
- 9.12 Eircom shall be obliged to develop an internal reference offer (“IRO”). The IRO shall be published within three months of the effective date. The IRO shall to a

reasonable degree of detail specify all services or facilities in the Market provided to Eircom, its own services, subsidiaries or partners and set out all material associated terms and conditions including relevant processes. The IRO shall be updated by Eircom as new services are developed, deployed or amended. ComReg may engage on a further consultation on the IRO once it is submitted to ComReg by Eircom.

- 9.13 Eircom shall communicate with OAOs, on a quarterly basis, or on such other suitably regular basis as may be specified by ComReg, sufficient information regarding the introduction of new technologies, products, services or processes which could reasonably be expected to support facilities or products or services in the Market. This information shall be of sufficient detail in order to allow those OAOs to develop their own business plans. This information should be communicated within the same timescale as that within which this information is communicated to Eircom, its own services, subsidiaries or partners.

## **10 OBLIGATION OF ACCOUNTING SEPARATION**

- 10.1 Pursuant to Regulation 12 of the Access Regulations Eircom shall have an obligation to maintain separated accounts relating to current generation products, services and or associated facilities in the Market. All of the obligations in relation to accounting separation applying to Eircom and in force immediately prior to the effective date of this Decision Instrument related to the Market shall be maintained in their entirety and Eircom shall comply with all of those obligations, pending a further decision to be made by ComReg following further consultation in relation to the details of and implementation of accounting separation obligations and cost accounting obligations.

- 10.2 Without limiting the generality of the obligation to comply with all accounting separation obligations in force immediately prior to the effective date of this Decision, Eircom shall continue to comply with *inter alia*, the obligations described in the following Decision Notices previously issued by ComReg which include:

- D5/99 – Accounting Separation and Publication of Financial Information for Telecommunication Operators
- D8/99 – Costing Methodology for use in Accounting Separation
- D10/99 – Accounting Separation and Publication of Financial Information for Telecommunications Operators
- D9/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators
- D10/00 – Accounting Separation and Publication of Financial Information for Telecommunications Operators, Supplemental Information referring to Decision Notice D9/00
- D2/01- Accounting Separation for Internet Service provision and Report on Investigation into Indigo and eircom.net.

- D7/01- Eircom's Reference Interconnection Offer & Accounting Separation and Publication of Financial Information for Telecommunications Operators
- D12/01- Revision of Timetable for Publication of Separated Accounts and Financial Information by Eircom

## **11 OBLIGATIONS RELATING TO PRICE CONTROL AND COST ACCOUNTING**

- 11.1 Pursuant to Regulation 14(1) of the Access Regulations, Eircom shall continue to comply with all of the obligations in relation to cost accounting in force immediately prior to the effective date of this Decision Instrument, until any amendment by ComReg.
- 11.2 Pursuant to Regulation 14(1) of the Access Regulations, prices charged by Eircom to any other undertaking for access to or use of those products, services or facilities referred to in section 6 relating to services provided over metallic paths shall be subject to a cost orientation obligation on the basis of forward looking long run incremental costs (FL LRIC) in relation to current generation products, services and or associated facilities in the Market.
- 11.3 Pursuant to Regulation 14(1) of the Access Regulations, Eircom shall maintain appropriate cost accounting systems in respect of products, services or facilities referred to in section 6 in respect of current generation products, services or associated facilities provided in the Market.
- 11.4 Eircom shall have an obligation not to cause a margin squeeze.
- 11.5 Eircom shall have an obligation not to unreasonably bundle.

## **12 SMP OBLIGATIONS IN RELATION TO NEXT GENERATION PRODUCTS, SERVICES AND FACILITIES (SECTION 12 )**

- 12.1 ComReg is imposing certain SMP obligations on Eircom in respect of next generation access ("NGA") technology in the Market in accordance with and pursuant to Regulations 9, 10, 11, 12, 13 and 14 of the Access Regulations. ComReg will consult further on the detail of the remedies contained in Section 12 of this Decision Instrument in respect of NGA products, services and associated facilities provided in the Market. Next generation access is considered to include access networks which permit very high speed access reaching from multi-functional access and aggregation nodes to the end-user. In the context of the WPNIA market as defined this will mean that part of the access network that is composed of fibre optic cable but may include other new infrastructure that permits very high speed access.
- 12.2 Pursuant to Regulation 13(1) of the Access Regulations, Eircom shall have an obligation to meet all reasonable requests to provide access to products, services, features, network elements, information or additional associated facilities, which



are provided by means of or in respect of NGA products, services and associated facilities in the Market, pending a further decision to be made by ComReg following further consultation in relation to the details and implementation of this obligation.

- 12.3 Pursuant to Regulation 13(2)(b) of the Access Regulations, Eircom shall have an obligation to negotiate in good faith with OAOs requesting access in respect of products, services, features, network elements, information or associated facilities which are provided by means of or in respect of NGA in the Market, pending a further decision to be made by ComReg following further consultation in relation to the details and implementation of this obligation.
- 12.4 Eircom shall have an obligation of non-discrimination as provided for by Regulation 11 of the Access Regulations. This obligation will apply to all products, services, facilities or appropriate process points in respect of NGA products, services and associated facilities provided in the Market, pending a further decision to be made by ComReg following further consultation in relation to the details and implementation of this obligation.
- 12.5 Eircom shall have an obligation of transparency as provided for by Regulation 10 of the Access Regulations in respect of NGA products, services and associated facilities provided in the Market, pending a further decision to be made by ComReg following further consultation in relation to the details and implementation of this obligation.
- 12.6 Eircom shall communicate with OAOs, on a quarterly basis or such other suitably regular basis as may be specified by ComReg, sufficient information regarding the introduction of new technologies, products, services or processes which could reasonably be expected to support products, services or facilities in the Market, in respect of next generation access. This information shall be of sufficient detail in order to allow those OAOs to develop their own business plans. This information shall be communicated within the same timescale as that within which this information is communicated to Eircom, its own services, subsidiaries or partners. The obligations set out in this section 12.6 apply, pending a further decision to be made by ComReg following further consultation in relation to the details and implementation of this obligation.
- 12.7 Pursuant to Regulation 12 of the Access Regulations, Eircom shall have an obligation to maintain separated accounts in the Market, in respect of NGA products, services and associated facilities provided in the Market, pending a further decision to be made by ComReg following further consultation in relation to the details and implementation of this obligation.
- 12.8 Pursuant to Regulation 14(1) of the Access Regulations, prices for NGA products, services and associated facilities shall be subject to a price control, the details of which will be subject to further consultation by ComReg.
- 12.9 Pursuant to Regulation 14(1) of the Access Regulations, Eircom shall maintain appropriate cost accounting systems in respect of NGA products, services or facilities provided in the Market, pending a further decision to be made by

ComReg following further consultation in relation to the details and implementation of this obligation.

### **13 STATUTORY POWERS NOT AFFECTED**

- 13.1 Nothing in this Decision Instrument shall operate to limit ComReg in the exercise and performance of its statutory powers or duties conferred on it under any primary or secondary legislation (in force prior to or after the effective date of this Decision Instrument) from time to time as the occasion requires.

### **14 MAINTENANCE OF OBLIGATIONS**

- 14.1 Unless expressly stated otherwise in this Decision, all obligations and requirements contained in Decision Notices and Directions made by ComReg applying to Eircom and in force immediately prior to the effective date of this Decision, are continued in force by this Decision and Eircom shall comply with same.

- 14.2 If any section, clause or provision or portion thereof contained in this Decision is found to be invalid or prohibited by the Constitution, by any other law or judged by a court to be unlawful, void or unenforceable, that section, clause or provision or portion thereof shall, to the extent required, be severed from this Decision and rendered ineffective as far as possible without modifying the remaining section(s), clause(s) or provision(s) or portion thereof of this Decision, and shall not in any way affect the validity or enforcement of this Decision.

### **15 WITHDRAWAL OF SMP OBLIGATIONS**

- 15.1 Decision No. D8/04 Designation of SMP and Decision on Obligations- Market Analysis: Wholesale unbundled access (including shared access) to metallic loops and sub-loops; Document 04/70, Decision No. D8.04 dated 15 June 2004 is hereby withdrawn.

- 15.2 Sections 15.1 of this Decision Instrument will take effect 28 days from the effective date or on the date on which all of sections 4, 5, 6, 7, 8, 9, 10 and 11 take effect, whichever is the later. All SMP obligations on Eircom in force immediately prior to the effective date of this Decision Instrument to which Eircom was subject to by virtue of its having had SMP in D8/04 are withdrawn with effect from 28 days from the effective date or on the date on which all of sections 4, 5, 6, 7, 8, 9, 10 and 11 take effect whichever is the later.

### **16 EFFECTIVE DATE**

- 16.1 Subject to the provisions of section 15.2, this Decision Instrument shall be effective from the date of its notification to Eircom and shall remain in force until further notice by ComReg.

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- 16.2 For the avoidance of doubt, sections 4, 5, 6, 7, 8, 9, 10, 11 and 15 of this Decision Instrument shall take effect 28 days from the effective date or when all of those sections take effect, whichever is the later.

**JOHN DOHERTY  
CHAIRPERSON  
THE COMMISSION FOR COMMUNICATIONS REGULATION  
THE [ ] DAY OF [ ] 2009**

## Appendix B – Consultation Questions

### List of Questions

- Q. 1. Do you have any comments on the Draft Decision Instrument? If so, please provide a written response.....17
- Q. 2. Do you have any other comments in relation to this document? If so, please provide a written response. 18

## Appendix C - Glossary of Terms

The glossary of terms represents many, but not necessarily all of the acronyms and phrases associated with both LLU and the various European regulators.

<i>Acronym</i>	<i>Full title</i>	<i>Description</i>
ARO	Access Reference Offer	
Bitstream	Bitstream	Bitstream is a service whereby an operator (typically, but not always, the incumbent) installs a high speed access link to the customers premises (e.g. by installing DSL equipment in the local access network) and then makes this access link available on a non-physical basis to third parties. The service may also include transmission to a higher level in the network where the DSL customer has a point of presence.
Broadband	Broadband	Telecommunication in which a wide band of frequencies is available to transmit information. Because a wide band of frequencies is available, information can be multiplexed and sent on many different frequencies or channels within the band concurrently, allowing more information to be transmitted in a given amount of time
Cable	Cable	A system of providing television to consumers via radio frequency signals. It is transmitted to televisions through fixed optical fibers or coaxial cables as opposed to the over-the-air method used in traditional television broadcasting (via radio waves) in which a television antenna is required.
ComReg	Commission for Communications Regulation	National regulatory agency for Ireland
DSL	Digital subscriber line	A family of technologies that provide digital data transmission over the wires of a local telephone network
DSLAM	Digital Subscriber Line Access Multiplexer	Allows telephone lines to make faster connections to the Internet. It is a network device, located near the customer's location, that connects multiple customer Digital Subscriber Lines (DSLs) to a high-speed Internet backbone line where multiple data streams are combined into one signal over a shared medium.
EC	European Commission	The European Commission embodies and upholds the general interest of the European Union, and is the driving force in the Union's institutional system. Its four main roles are to propose legislation to Parliament and the Council, to administer and implement Community policies, to enforce Community law (jointly with the Court of Justice) and to negotiate international agreements, mainly those relating to trade and cooperation.

ECJ	European Court of Justice	
ECTA	European Competitive Telecommunications association	An association which promotes the regulatory interests of European alternative fixed telecoms operators
ERG	European Regulators Group	Established by by the European Commission to provide a suitable mechanism for encouraging cooperation and coordination between national regulatory authorities and the Commission, in order to promote the development of the internal market for electronic communications networks and services, and to seek to achieve consistent application, in all Member States, of the provisions set out in the Directives of the new regulatory framework.
Fibre	Fibre Optic Cable	Optical fibre is a glass or plastic fibre designed to guide light along its length. Optical fibres are widely used in fibre-optic communication, which permits transmission over longer distances and at higher data rates than other forms of communication. Fibres are used instead of metal wires because signals travel along them with less loss, and they are immune to electromagnetic interference.
FTTC/N	Fibre to the cabinet/note	Where fibre optic cable connects an exchange to a streetside cabinet or similar with the remainder of the local loop being provided over copper
FTTH/P	Fibre to the home/premises	A form of fiber optic communication delivery in which the optical signal reaches the end-user's living or office space
FTTx	Fibre to the ...	A generic description of fibre in the access network
FWA	Fixed wireless access	The use of radio links for the transmission of voice and data communications
GLUMP	Geographic number portability and Unbundled Local Metallic Path service	Eircom provides OAOs with number portability combined with exclusive use of a metallic path between the incumbents exchange facility and a customer's premises
GPON	Gigabit Passive Optical Network	A Passive Optical Network (PON) is a point-to-multipoint fibre to the premises network architecture that doesn't require any active electrical components between the end-user terminating equipment and the respective network node. GPON (ITU G.984) is based on the combination of ATM, Ethernet, and TDM and allows a shared downstream speed up to 1.24 / 2.48Gbps and up to 622M / 1.24Gbps upstream.
HSDPA	High-Speed Downlink Packet Access	HSDPA is a 3G (third generation) mobile telephony communications protocol in the High-Speed Packet Access (HSPA) family, which allows networks based on Universal Mobile Telecommunications System (UMTS) to have higher data transfer speeds and capacity.
IP	Internet Protocol	Method for moving information from one network to another on the internet
IRO	Internal Reference Offer	

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ISP	Internet Service Provider	
KPI	Key Performance Indicator	
LLU	Local loop unbundling	The regulatory process of allowing multiple telecommunications operators use of connections from the incumbents telephone exchange's to the customer's premises.
Local Loop	Local loop	The physical circuit connecting the network termination point at the subscriber's premises to the main distribution frame or equivalent facility in the fixed public telephone network providers network
LS	Line share	Line share provides OAOs with shared use of a metallic path between an Eircom exchange facility and a customer's premises. Eircom retains the voice-band frequency spectrum of the circuit and continues to provide voice services and the OAO is able to use the remainder of the frequency spectrum.
LTE	(Long Term Evolution	A proposed 4th generation mobile broadband standard, the successor to 3 <sup>rd</sup> generation standards
MAN	Metropolitan area network	A network serving businesses and residences in an urban setting
Margin Squeeze	Margin Squeeze	A margin or price squeeze occurs when the difference between the wholesale price and the retail price of the final good or service does not give an efficient downstream firm a reasonable profit margin.
Mbps	Megabits per second	
MDF	Main distribution frames	A signal distribution frame for connecting equipment (inside an exchange) to cables and subscriber carrier equipment (outside an exchange).
NBS	National broadband scheme	Provision of broadband services to certain target areas in Ireland in which broadband services are not available or are unlikely to be available in the foreseeable future.
NGN	Next generation networks	The evolution in telecommunication core and access networks that will be deployed over the next 5-10 years. One network transports all information and services (voice, data, and all sorts of media such as video) by encapsulating these into packets
NRA	National regulatory agency	A state or government agency which regulates businesses in the public interest
OAO	Other alternative operators	Operators, other than the incumbent, providing telecommunication services
OfCom	Office of Communications	National regulatory agency for the United Kingdom
OSS	Operational support systems	
PSTN	Public switched telephone network	PSTN refers to the international telephone system based on copper wires and carrying analog voice data. This is in contrast to newer telephone networks based on digital technologies such as ISDN
SMP	Significant Market Power	

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Satellite	Satellite	Communication that involves the use of an active or passive satellite to extend the range of a communications, radio, television, or other transmitter by returning signals to earth from an orbiting satellite.
SLU	Sub loop unbundling	Process by which a sub-section of part of the local loop is unbundled (ie. The physical circuit connecting the network termination point at the subscriber's premises to the nearest cabinet).
ULMP	Unbundled local metallic path	ULMP provides OAOs with exclusive use of a metallic path between the incumbents exchange facility and a customer's premises
VOIP	Voice over internet protocol	The transport of voice traffic across the internet
VDSL	Very High Bitrate DSL	
WACC	Weighted Average Cost of Capital	A firm's cost of capital weighted by the proportion of debt to equity in its capital structure
WBA	Wholesale Broadband Access	Non-physical or virtual network access including 'bit-stream' access at a fixed location.
WUA	Wholesale unbundled access	Wholesale (physical) network infrastructure access (including shared or fully unbundled access) at a fixed location