



Review of the wholesale broadband access markets

Statement on market definition, market power
determinations and remedies
(~~✂~~ Redacted for publication)

Statement

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Contents

Section	Page
1 Summary	1
2 Introduction	7
3 Market definition	14
4 Market power assessment	52
5 Remedies	67
 Annex	 Page
1 Legal Instrument	121
2 Market definition methodology	158
3 Geographic analysis	165
4 Distribution and evolution of service shares	178

Section 1

Summary

Overview

- 1.1 Broadband is increasingly central to the lives of UK consumers and the success of businesses. It allows consumers to access and interact with a wide range of content and services and allows businesses to exploit new market opportunities and more efficient operating models. Competition has driven the success of the current generation of broadband services. The result has been greater choice, innovation, lower prices and high levels of broadband adoption.
- 1.2 Competition in the provision of these retail services depends on effective competition at the wholesale level, or, where this is not occurring, effective regulation. Competition at the deepest level at which it is likely to be effective and sustainable, based on investment by competitors in their own infrastructure, is likely to give the greatest benefits in terms of the mix of lower prices and faster innovation that residential and business consumers want. The Wholesale Local Access (WLA) market concerns access to this fixed telecommunications infrastructure – the connection between the consumer and the telecommunications network. It is therefore critical for all fixed line services. We published our conclusions on our review of the WLA market on 7 October 2010.¹
- 1.3 The Wholesale Broadband Access (WBA) market sits between the WLA market and the retail broadband market. The WBA market relates to the wholesale broadband products that communications providers (CPs) provide for themselves and sell to each other. It is important for consumers because these services are one of the building blocks of the retail broadband offers that consumers buy. As effective and sustainable competition based on investment in infrastructure develops, further regulation of wholesale broadband services may become unnecessary. However, the market is not yet effectively competitive everywhere and so some regulation in the WBA market continues to be required.
- 1.4 The increase in the number of consumers using their broadband connections for activities such as downloading or streaming videos and music is beginning to test the limits of current broadband networks. Equally, businesses and service providers are looking to deliver a wider range of content, applications and services over broadband. Super-fast broadband² will have a key role in addressing these requirements and thereby delivering significant benefits to UK consumers and businesses.
- 1.5 One of the main challenges facing Ofcom is to adapt the existing regulatory framework to reflect the emergence of super-fast broadband. In our WLA statement we set out how our decisions in that market aim to establish a framework to promote competition and to support continued investment and innovation in the deployment of Next Generation Access (NGA) networks that can support super-fast broadband services.

¹ *Review of the wholesale local access markets*, 7 October 2010

<http://stakeholders.ofcom.org.uk/consultations/wla/statement>

² Usually taken to mean broadband with download speeds greater than 24Mbps

- 1.6 We have taken account of the development of super-fast broadband in our analysis of the WBA market. We have concluded that at this stage we should consider current generation and next generation broadband services to be in the same market, although as the deployment of NGA networks develops it may become appropriate to reflect this evolution through a different approach to the WBA market in the future.
- 1.7 We have found that there is effective competition in almost 80 per cent of the UK. However, in just over one-fifth of the UK – covered by what we have called Market 1 and Market 2 - we have concluded that there is not sufficient competition and so we have imposed regulation to protect consumers.
- 1.8 Market 1 is made up of exchange areas in which BT is currently the only provider of wholesale broadband services, whereas Market 2 comprises exchange areas with two significant providers, or with three significant providers where BT's market share is 50 per cent or more. BT has Significant Market Power (SMP) in both of these markets and will be subject to a range of regulatory obligations, including general access and non-discrimination obligations and a requirement for charges to be cost oriented. In Market 1 we have decided that BT should also be subject to a charge control, the details of which will be the subject of a separate consultation.
- 1.9 We have also concluded that KCOM has SMP in the Hull Area, and have imposed a range of regulatory obligations upon it.
- 1.10 The aim of these regulations is to enable CPs to purchase wholesale products from the dominant providers at prices that allow them to compete effectively in the provision of retail services.

The market review

- 1.11 This document sets out our analysis of the state of competition in the WBA market and the measures we are taking to protect consumers in situations where competition alone is insufficient.
- 1.12 The decisions we have made will have significant implications for consumers. While the WBA market concerns services provided between different CPs, decisions taken in the context of this market review will ultimately affect the prices, choice and availability of broadband services in the retail market.
- 1.13 We periodically review various markets, according to both European and domestic legal requirements, including the Communications Act 2003 ("the Act"). The market review process is divided into three parts. First, we define the scope of the market that we are assessing (both the products in the market and its geographic scope). Then we assess whether any CPs have a position of SMP, which essentially means power to influence markets to a significant degree in a way that could harm consumers. Then, if any CPs have SMP, we assess the regulatory remedies that need to be imposed to address the SMP that exists.
- 1.14 We have published two consultations setting out our proposals in this market review. We published our first consultation ("the first consultation")³ in March 2010 and we published our second consultation ("the second consultation")⁴ in August 2010. The

³ *Review of the wholesale broadband access markets*, 23 March 2010

<http://stakeholders.ofcom.org.uk/consultations/wba/>

⁴ *Review of the wholesale broadband access markets: second consultation*, 20 August 2010

<http://stakeholders.ofcom.org.uk/consultations/wholesale-broadband-markets/>

first consultation discussed a full set of proposals whilst the second consultation focused on an amended approach to geographic market definition and the effect of this amended approach on our market power assessment and remedies proposals.

- 1.15 In this document, we set out the conclusions of our review of the WBA market in relation to market definition, SMP and the remedies that are needed to address this market power. As discussed above, the WBA market is closely related to the WLA market. Regulation in the WLA market is aimed at providing competing providers with access to the fixed network infrastructure used in connecting individual consumers to the telecommunications network. The intention is to encourage effective and sustainable competition based on investment by competitors in their own networks, as we believe this will provide the greatest benefit to consumers. The regulatory obligations which apply in the WLA market have been taken into consideration when reaching our conclusions on the state of competition in the WBA market.
- 1.16 On 16 November 2010 Talk Talk announced its intention to unbundle 700 further exchanges. We understand these plans are still in the process of development. We have considered the implication of this announcement on this market review.

Summary of decisions

Market definition

- 1.17 We conclude that the relevant wholesale broadband access product market is:

Asymmetric broadband access and any backhaul as necessary to allow interconnection with other communications providers which provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes both business and residential customers.

- 1.18 This means that services provided via copper, cable and fibre access networks are within the same market and broadband services of all speeds, including super-fast broadband services, are included in the market. Broadband access provided via mobile, wireless and satellite networks is outside the market.
- 1.19 We conclude that there are four separate geographic markets, as follows:⁵
- The Hull Area: (0.7 per cent of UK premises);
 - Market 1: exchanges where only BT is present or forecast to be present (11.7 per cent of premises)⁶;
 - Market 2: exchanges where two Principal Operators (POs)⁷ are present or forecast and exchanges where three POs are present or forecast but where BT's share is greater than or equal to 50 per cent (10.0 per cent of premises); and

⁵ Our analysis of the sizes of each market is based on the latest information we gathered, which was in June 2010.

⁶ In assessing forecasted plans we have only counted operators as present where they have firm plans to deploy in specific exchanges.

⁷ We define a Principal Operator within section 3 of this statement as an operator capable of providing a material constraint in the market.

- Market 3: exchanges where four or more POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is less than 50 per cent (77.6 per cent of premises).

Market power assessment

1.20 We have examined the market position of CPs in each of the geographic markets defined above. Our conclusions are that:

- BT holds a position of SMP in the provision of WBA services in Market 1;
- BT holds a position of SMP in the provision of WBA services in Market 2;
- No operator holds a position of SMP in Market 3. and
- KCOM holds a position of SMP in the provision of WBA services in the Hull Area.

Remedies

1.21 In order to address the competition problems identified above we are imposing a series of remedies designed to make sure that consumers benefit from a choice of provider wherever possible through better products and competitive retail prices.

Market 1

1.22 In Market 1 there is limited prospect in the near term of any wholesale competition. Therefore we are imposing general access and non-discrimination obligations on BT, together with a requirement that charges should be based on the costs of provision. These obligations will ensure that other CPs have the opportunity to use wholesale products supplied by BT to compete effectively at the retail level. We are also imposing obligations requiring BT to publish information that provides transparency of the services it provides in Market 1. In relation to transparency of financial information we have decided that BT should be subject to an accounting separation obligation to provide transparency as to the services it provides to external CPs and to its own retail divisions and a cost accounting obligation to provide transparent cost data. The details of these obligations will be the subject of a separate consultation.

1.23 In addition we have decided that BT's services in this market should be subject to a charge control. This additional remedy, the details of which will be subject to separate consultation, is aimed at ensuring that BT does not set excessive prices which would ultimately be passed on to consumers.

Market 2

1.24 BT also has SMP in Market 2 and so we have decided to impose general access, non-discrimination and transparency obligations for the same reasons as in Market 1 as set out above.

1.25 Given its position in the market there may be potential for BT to raise its prices to an excessive level. However, there is some wholesale competition in Market 2 and the potential for this to develop further, though the extent of any such further investment is uncertain. We consider that an approach to regulation that promotes investment where it is economic in order to provide effective and sustainable competition is appropriate in Market 2. However we also recognise that a safeguard to protect against the potential risk of prices rising to an excessive level is needed, in case this

additional investment does not materialise. We think strict price regulation would not be appropriate to achieve this. Instead, we are imposing a cost orientation obligation which allows BT a greater degree of pricing freedom. As in Market 1, we have also decided that BT's services should be subject to accounting separation and cost accounting obligations to provide transparency of financial information.

- 1.26 The different approach we are taking in Market 2, compared to Market 1, is mainly due to our assessment of the likely constraint on BT's pricing arising from current and future investment by other operators. We have also taken account of the possible impact our regulation may have on prospects for future investment and on those providers that have already made investments in Market 2.

The Hull Area

- 1.27 In the Hull Area we have decided to impose general access, non-discrimination and transparency obligations (including an accounting separation obligation) on KCOM. We are not imposing any pricing regulation or a cost accounting obligation.
- 1.28 We are aware that consumers in the Hull Area do not have a choice of provider because of the lack of entry into the market by providers other than KCOM. In assessing our approach to remedies, we have taken into account the absence of rollout plans of other providers. Our view is that imposing additional wholesale regulation (such as charge controls) would not encourage investment by these other providers.
- 1.29 This lack of competition could result in consumers in Hull paying higher prices and getting less attractive products than are available elsewhere in the UK. In that case, we would need to consider whether to impose additional regulation at the retail level (as additional wholesale regulation would not address our concerns). We have examined the retail offers available to consumers in the Hull Area. This shows that whilst consumers in Hull may not have access to the best offers available in some other parts of the UK, they do have access to products that are comparable in terms of price and specification to those available to many consumers in the rest of the UK (for example, the majority of customers in the Market 1 area). We do not expect this position to change within the next four years.
- 1.30 Therefore, whilst we will continue to monitor the position in Hull, we do not propose to carry out a further review of the retail market at this time.

Next steps

- 1.31 Today, we are imposing all the obligations that we have decided are needed to address our competition concerns in the WBA markets, with the exception of the charge control in Market 1, the accounting separation and cost accounting obligations in Market 1 and Market 2 and the accounting separation obligation in the Hull Area. The Legal Instrument in Annex 1 sets out the obligations we are imposing today.
- 1.32 As set out above we are imposing a charge control on BT in Market 1. This is the first time we have imposed a charge control in the WBA market. We will shortly publish a consultation that discusses our approach to this charge control.
- 1.33 In addition, we will shortly publish a consultation on BT's and KCOM's regulatory reporting obligations which will include our proposals on how BT should meet its accounting separation and cost accounting obligations in Market 1 and Market 2 and

how KCOM should meet its accounting separation obligation in the Hull Area. That consultation will set out the proposed legal instrument which will implement such SMP conditions.

Section 2

Introduction

Purpose of this statement

- 2.1 This statement sets out our conclusions on how we should regulate the wholesale broadband access (WBA) market over the next few years. In doing so, it considers the level of competition that exists, and is anticipated to exist, in this market.
- 2.2 The WBA market sits between the retail broadband market, which relates to the products that consumers buy, and the Wholesale Local Access (WLA) market, which relates to the access connection between the consumer and the network. In reviewing the WBA market, we are concerned with assessing whether there is sufficient competition based on competing broadband networks, or whether we need to impose additional remedies at the WBA level in order that operators can provide competing retail offers.
- 2.3 Ofcom published its latest review of the WLA market on 7 October 2010.⁸ We have taken the conclusions of that market review into account in our assessment of the WBA market.
- 2.4 Market reviews are carried out to assess the competitive conditions that exist in a market and, where there is not a sufficient level of competition, impose obligations (remedies) that address any potential negative effects that arise from the lack of competition. The ultimate goal is to ensure that customers enjoy sufficient choice and benefit from the lower prices and increased product innovation that arises from competition. The requirements to conduct market reviews, and the processes to follow when doing so, are closely defined by various legislation and guidance at a European and a national level. In reviewing the WBA market, we have followed this guidance in our assessment of whether there is sufficient competition in the supply of fixed broadband access services at the wholesale level in order to provide consumers with a choice of the retail broadband products they purchase.

Strategic context for this review

- 2.5 Access to the Internet plays an increasingly important part in the lives of UK citizens and consumers. Services provided over the Internet continue to evolve and now include access to government and social services, online shopping, social networking and viewing of high quality video. Broadcasters (such as the BBC and Sky) increasingly make content available online as well as through traditional broadcast methods. The Internet also plays an important role for business consumers, both in providing new ways to interact with their customers and in providing more flexible working for employees.
- 2.6 Consumers have benefited from competition in the provision of broadband services through choice of provider, lower prices and product innovation. Providers compete by differentiating their broadband products in terms of the features of the product (such as maximum speed and download limits) and by bundling broadband products with other services, notably fixed and mobile telephony and television services.

⁸ *Review of the wholesale local access markets*, 7 October 2010
<http://stakeholders.ofcom.org.uk/consultations/wla/statement>

- 2.7 This competition in the provision of retail services is dependent on effective competition at the wholesale level, or, where this is not occurring, effective regulation.
- 2.8 In the 2005 Strategic Review of Telecoms,⁹ we identified that competition at the deepest level at which it is likely to be effective and sustainable, based on investment by competitors in their own infrastructure, is likely to give the greatest benefits in terms of the mix of lower prices and faster innovation that residential and business consumers want. Based on the current network that exists in the UK, we consider that this benefit is maximised where competition between networks in the provision of broadband services is based on local loop unbundling (LLU). Where this competition develops, regulation of wholesale broadband is unnecessary.
- 2.9 However, LLU is unlikely to be successful in all parts of the UK. This means that in some geographic areas there is unlikely to be direct competition between broadband networks. In these areas regulation at the WBA level is necessary to ensure that consumers can choose between differing retail offers. Regulation at the WBA level is also needed to ensure rival providers are able to compete at the national level.

The Impact of super-fast broadband

- 2.10 Super-fast broadband is important in continuing the evolution of the UK broadband market. It supports higher speeds than have been experienced so far by UK consumers. Whilst broadband based on LLU has a maximum download speed of up to 24Mb/s, super-fast broadband will be able to offer speeds faster than this. By reducing the distance of the copper connection from the customer to the network (either by replacing the connection from the cabinet with fibre or by providing the whole connection to the customer with fibre), super-fast broadband deployments are also less likely to suffer from limitations currently experienced by consumers based on the distance they live from the local exchange.
- 2.11 BT has begun rolling out the Next Generation Access (NGA) network required to provide super-fast broadband services. Virgin Media has upgraded its cable network to allow it to provide super-fast broadband.
- 2.12 Just as for current broadband products based on LLU, we believe consumers will be likely to see the most benefit from competition at the deepest level at which it is effective and sustainable based on investment by competitors in their own infrastructure. Therefore, regulation that provides appropriate access to the NGA network will be vital in allowing providers of retail products to compete in super-fast broadband services.
- 2.13 Again, as for current broadband, wholesale broadband regulation will be required only where upstream regulation designed to provide access to the NGA infrastructure proves to be ineffective.
- 2.14 Our statement on the WLA market review considers NGA deployments in further detail.

⁹ *Ofcom's Strategic Review of Telecommunications*,
http://www.ofcom.org.uk/static/telecoms_review/index.htm

The regulatory framework for market reviews

- 2.15 The regulatory framework that applies to the issues covered in this document was set out in detail at Annex 6 of the first consultation we published as part of this review.¹⁰ This framework is based upon a number of EU Directives, which have been implemented into UK law by the Communications Act 2003 ("the Act").
- 2.16 The Act sets out our duties and obligations, including our general duty to further the interests of citizens in relation to communications matters and the interests of consumers in relevant markets, where appropriate by promoting competition. We discuss and discharge these duties and obligations in this document.
- 2.17 A market review has three stages:
- Definition of relevant markets (market definition);
 - Assessment of competition in each market, in particular whether any undertakings have Significant Market Power (SMP) in a given market (market power analysis); and
 - Assessment of appropriate regulatory obligations where there has been a finding of SMP (remedies).
- 2.18 In this market review, we have considered the need to maintain, amend or remove current regulations in this market, and the need for additional regulations.
- 2.19 In carrying out our duties under the regulatory framework we are required to take account of certain documents published by the European Commission ("the Commission") and the Body of European Regulators for Electronic Communications' (BEREC).¹¹ Following on from these, some of the main documents of which we have taken account in developing our decisions are:
- On market definition, the Commission's Recommendation on relevant product and services markets ("the Recommendation on Markets");¹²
 - On market analysis, the Commission's guidelines;¹³

¹⁰ *Review of the wholesale broadband access markets*, 23 March 2010

<http://stakeholders.ofcom.org.uk/consultations/wba/>

¹¹ In particular, pursuant to Article 19 of Directive 2002/21/EC of the European Parliament and of the Council of 7 March 2002 on a common regulatory framework for electronic communications networks and services (Framework Directive) and Article 3(3) of Regulation (EC) No 1211/2009 of the European Parliament and of the Council of 25 November 2009 establishing the Body of European Regulators for Electronic Communications (BEREC) and the Office.

¹² Commission Recommendation of 17 December 2007 2007/879/EC, OJ L344, 28.12.2007, p.65: http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_344/l_34420071228en00650069.pdf and also the accompanying Explanatory Note, *Commission Staff Working Document, 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 communication networks and services (Second edition)* (http://ec.europa.eu/information_society/policy/ecom/doc/library/proposals/sec2007_1483_final.pdf)

¹³ Guidelines for market analysis and the assessment of SMP - see <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF>

- On remedies, Common Positions produced by the European Regulators Group ("ERG") and BEREC;¹⁴ and
 - the Commission's NGA Recommendation.¹⁵
- 2.20 The current regulatory framework was amended in December 2009 by the EU 'Better Regulation' Directive.¹⁶ That Directive is due to be implemented in the UK by no later than 26 May 2011. The Government has recently consulted on its proposed approach in implementing the revised EU framework.¹⁷ The document, among other things, consulted on possible changes to Ofcom's role and powers under these amendments. Where appropriate, we have taken into account these amendments to the regulatory framework.

The 2008 WBA market review

- 2.21 In our last review of the wholesale broadband access market in 2008 ("the 2008 review"), we identified asymmetric broadband access as being the relevant product, taking into account that products based on ADSL and cable technologies dominate the wholesale broadband access market.¹⁸
- 2.22 Our analysis showed that competition was maturing at different rates across the UK such that we identified four separate geographic markets:
- The Hull Area; those areas covered by exchanges where KCOM was the only operator.
 - Market 1: those areas covered by exchanges where BT was the only Principal Operator (PO).
 - Market 2: those areas covered by exchanges where there were 2 or 3 POs.
 - Market 3: those areas covered by exchanges where there were 4 or more POs.
- 2.23 Having identified the product and geographic scope of the market(s), we assessed each market in turn to determine whether any operator or group of operators held a position of SMP, concluding that:
- KCOM held a position of SMP in the Hull Area;

¹⁴ Revised ERG Common Position on the approach to Appropriate remedies in the ECNS regulatory framework, May 2006; ERG Common position on Geographic Aspects of Market Analysis (definition and remedies), October 2008; and Common position on best practice in bitstream access remedies imposed as a consequence of a position of significant market power in the market for wholesale broadband access,

- see http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf, http://erg.ec.europa.eu/doc/publications/erg_08_20_final_cp_geog_aspects_081016.pdf and http://erg.eu.int/doc/publications/erg_06_69rev1_wba_cp.pdf

¹⁵ http://ec.europa.eu/information_society/policy/ecomm/doc/library/recomm_guidelines/nga/en.pdf - European Commission, 20 September 2010

¹⁶ <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0037:0069:EN:PDF> – Directive 2009/140/EC of the European parliament and of the Council, December 2009

¹⁷ *Implementing the Revised EU Electronic Communications Framework - Overall approach and consultation on specific issue*, 13 September 2010 - <http://www.bis.gov.uk/econmsframework>

¹⁸ *Review of the wholesale broadband access markets*, 21 May 2008, <http://www.ofcom.org.uk/consult/condocs/wbamr07/statement/>

- BT held a position of SMP in Market 1;
 - BT held a position of SMP in Market 2; and
 - No operator held a position of SMP in Market 3.
- 2.24 Given these findings of SMP we decided to impose the following regulatory obligations on KCOM in the Hull Area and on BT in both Market 1 and Market 2:
- Requirement to provide Network Access on reasonable request;
 - Requirement not to discriminate unduly;
 - Requirement to publish a reference offer;
 - Requirement to notify charges, terms and conditions;
 - Transparency as to quality of service;
 - Requirement to publish technical information; and
 - Requirement to account separately.
- 2.25 Given the finding of no SMP in Market 3, no regulatory remedies were applied in that market. However, we required BT to continue to provide network access to existing customers in exchanges in Market 3 for a 12 month notice period so that these customers could continue to operate while they made any necessary alternative arrangements.

BT's voluntary pricing commitments

- 2.26 In 2006, BT volunteered pricing commitments to Ofcom that set a floor and ceiling price for its WBA services.¹⁹ Following the 2008 review these commitments remained in place. The commitment to price above a floor price expired on 1 July 2009. The commitment to not price above a ceiling price is due to expire on 31 December 2010.

A forward look at future market developments

- 2.27 Rather than just looking at the current position, market reviews look ahead to how competitive conditions may change in the future. Our evaluation of the current market takes into account past developments and evidence. Then we assess whether any lack of effective competition is durable, by considering expected or foreseeable market developments over a reasonable period in the future.
- 2.28 The actual period used for this forward look should reflect the specific characteristics of the market and the expected timing for the next review. In this market review, we have looked at potential developments over the next four years.
- 2.29 In this market, the key anticipated change over the next four years is that a significant amount of NGA infrastructure will be deployed. This will support 'super-fast' broadband services, offering higher speeds than have been experienced so far by UK consumers. However, there is uncertainty about the extent and timing of NGA investment. This makes it harder to foresee how the existing competitive conditions

¹⁹ <http://stakeholders.ofcom.org.uk/telecoms/policy/broadband-services/broadband-pricing/>

will change over the next few years. It is possible that the WBA market will change quickly in the future, for example as the speed of NGA deployment picks up.

- 2.30 However, based on past data and the information before us, we are of the view that competitive and technological developments in the UK are not expected to materially affect our proposed market definitions within a four year period. Although services that require higher speed access may evolve as next generation rollout develops, we anticipate that the majority of broadband users' requirements will continue to be able to be met using current as well as next generation network access and speeds.
- 2.31 We also consider a four year forward look to be reasonable in this case as this period provides a reasonable degree of regulatory certainty to stakeholders in the UK. Such certainty is especially valuable at this point in time as it provides the right context for investment decisions during this important early phase of NGA deployment, in which the future market for NGA services is not yet clear. Whilst investment in NGA deployment may be considered to be more relevant to the WLA market, the WLA and WBA markets are closely related and our analysis of the WBA market takes account of the state of competition in the WLA market. This period of forward look also covers the entire period over which we will set the charge control that we have decided to impose in Market 1.
- 2.32 The four year forward look that we have used allows for some flexibility in the date of the next WBA market review and allows for the review to occur before the end of this four year period. Given the potential impact of developments in this market in the next few years (such as additional LLU rollout and NGA deployments), we will monitor closely the WBA market, and we will consider the timing of the next market review accordingly.
- 2.33 In considering the timeframes for the next review, we will consider the new procedures and timeframes for conducting market reviews introduced by the amendments to the EU regulatory framework.

The consultation process

- 2.34 In carrying out this review of the WBA markets, we have carried out two consultations. Our first consultation ("the first consultation"),²⁰ published on 23 March 2010, included a full set of proposals for product and geographic market definition, SMP assessments in the defined markets and remedies in markets where we had identified an undertaking as having SMP.
- 2.35 We received 16 responses to the first consultation. These responses were from communications providers with a direct interest in the WBA market, the European Commission and other stakeholders including industry groups, local government, an Ofcom Advisory Committee, and a member of the public. We have posted the non-confidential responses that we received on our website.²¹ The comments we received related to our approach to market definition, our assessment of SMP and our proposed remedies.
- 2.36 During the period of the first consultation, one of the operators active in the broadband market (Orange) entered into a long-term exclusive agreement with BT

²⁰ *Review of the wholesale broadband access markets*, 23 March 2010

<http://stakeholders.ofcom.org.uk/consultations/wba/>

²¹ Responses to the first consultation are published at:

<http://stakeholders.ofcom.org.uk/consultations/wba/?showResponses=true>

for the supply of WBA services. In the first consultation we considered that Orange played a significant role in the WBA market and as such we considered it to be one of seven POs. We considered that the potential impact of Orange's agreement with BT in the WBA market would mean we should no longer consider Orange as a PO as it would not impose a constraint in the WBA market. We took the view that this change in market conditions merited a second consultation. In addition, we were of the view that some of the responses to the first consultation (notably from BT and the European Commission) justified further consideration of our approach to market definition. Finally, we gathered updated information from the POs on their LLU rollout plans (and, in the case of Virgin Media, its plans for extending the reach of its cable access network) and took the view that these plans presented greater potential for these POs to compete in the WBA market than we had considered in the first consultation.

- 2.37 Therefore, on the 20 August 2010, we published a second consultation document ("the second consultation").²² In this consultation we revised our approach to geographic market definition and assessed the impact of this amended approach on our SMP analysis. We proposed that the conditions of competition would remain materially the same in each of the markets and said that we considered that the remedies we proposed in the first consultation remained appropriate.
- 2.38 We received 11 responses to the second consultation. These responses were again from communications providers with a direct interest in the WBA market, the European Commission and four members of the public. We have posted the non-confidential responses that we received on our website.²³
- 2.39 With this statement we are publishing our final conclusions on our review of the WBA market, taking account of the two consultations and the responses to them. On 16 November 2010, following the end of the second consultation period and just before we published this statement, Talk Talk announced its intention to unbundle a further 700 BT exchanges. We have included our analysis of the implications of this within this statement.

²² *Review of the wholesale broadband access markets – second consultation*, 20 August 2010
<http://stakeholders.ofcom.org.uk/consultations/wholesale-broadband-markets/>

²³ Responses to the second consultation are published at:
<http://stakeholders.ofcom.org.uk/consultations/wholesale-broadband-markets/?showResponses=true>

Section 3

Market definition

Summary

- 3.1 In this section we set out our conclusions relating to market definition and our reasoning in reaching these conclusions.
- 3.2 The purpose of this section is to define the relevant wholesale markets in which the assessment of market power will be undertaken. We first consider the relevant retail markets as they are logically prior to, and affect, wholesale markets. Once we have considered the retail product market and the geographic scope of this market we then consider the wholesale markets, starting with the wholesale product market before considering the geographic scope of the wholesale markets.
- 3.3 A detailed explanation of the methodology that we have applied to defining markets in this section is provided in Annex 2.²⁴
- 3.4 Following this process, we consider the wholesale product market to be:
- Asymmetric broadband access and any backhaul as necessary to allow interconnection with other communications providers which provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes both business and residential customers.
- 3.5 We consider that there are four separate wholesale geographic markets, as follows:
- The Hull Area: (0.7 per cent of UK premises);
 - Market 1: exchanges where only BT is present (11.7 per cent of premises);
 - Market 2: exchanges where two POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is greater than or equal to 50 per cent (10 per cent of premises); and
 - Market 3: exchanges where four or more POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is less than 50 per cent (77.6 per cent of premises).

Structure of this section

- 3.6 In the rest of this section we summarise our consultations, discuss the responses to the consultations and draw our conclusions on the market definition. The discussion is split into three sections as follows:
- Retail market definition (including product and geographic market definition).
 - Wholesale product market definition.

²⁴ Annex 2 includes definitions of some of the terms used in this section.

- Wholesale geographic market definition.
- 3.7 We also include a discussion on our view of Talk Talk's intention to unbundle further exchanges, and how this impacts our geographic market definition in paragraphs 3.169 to 3.190 below.

Retail market definition

Summary of consultation proposals

- 3.8 Our first consultation set out our assessment of retail product market definition in paragraphs 3.61 to 3.168, and our assessment of retail geographic market definition in paragraphs 3.169 to 3.177.
- 3.9 We did not make any amendments to our retail market definition in our second consultation.
- 3.10 In the first consultation we set out the following proposed retail product market definition:
- Asymmetric broadband internet access which, as a minimum, provides an always-on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial-up connection. This market includes both business and residential customers.
- 3.11 In making this proposal we considered that at the retail level:
- Narrowband and broadband internet access services are in separate economic markets;
 - Symmetric and asymmetric broadband internet access services are in separate economic markets;
 - Cable-based, ADSL-based and fibre-based (including high-speed) broadband internet access services are in the same relevant economic market;
 - Broadband internet access services using mobile, fixed wireless access and satellite are in separate economic markets to fixed broadband internet access services; and
 - Residential and business broadband internet access services are in the same relevant product market.
- 3.12 In addition, we considered bundling of telecommunications and media services by triple- and quadruple-play suppliers. That is, cases where broadband access services are provided with different combinations of fixed telephone access, calls, mobile phone contracts and pay TV services. Our assessment suggested that:
- Services that make up a bundled package should not be treated as a single market for the purpose of this market review.
 - Broadband access services purchased in a bundle are part of the same retail market as broadband access services purchased as a stand-alone package.

- 3.13 On the retail geographic market there has been increasing differentiation in prices by LLU operators²⁵ reflecting their geographic footprint as well as Ofcom's WBA geographic market definition.²⁶ On the other hand, BT still maintains a national price for all its packages.²⁷ Similarly, KCOM also sets a uniform price across the Hull Area.
- 3.14 We said that these developments in the retail market may suggest different geographic markets emerging at the retail level, although many ISPs are still maintaining a national pricing policy. We also noted that for the purposes of this market review, the retail market definition is used only to inform the analysis of wholesale markets. Since the geographic markets we define at the wholesale level would not be affected by these possible developments at the retail level, it is therefore not necessary to conclude on the precise scope of the retail geographic market but for completeness, we proposed two separate retail geographic markets:
- UK excluding the Hull Area; and
 - The Hull Area.

Summary and analysis of consultation responses

- 3.15 The majority of the responses to the first consultation agreed with our approach to retail product market definition for the purposes of informing our wholesale market definition. We did not receive specific comments relating to our proposal on the retail geographic market definition.
- 3.16 BT, David Hall Systems and Sky agreed that there is currently a chain of substitution linking the speeds of services delivered using current generation services with those delivered using next generation services. BT also noted that this definition may not hold in future if services develop with higher speeds that could only be delivered using NGA. As set out in paragraph 3.101 of the first consultation, we recognised that this could cause a break in the chain of substitution, and that in the future it could become more appropriate to define separate product markets based on speed.
- 3.17 As the market currently stands, we believe that there exists a chain of substitution that links together different speeds of broadband services at the retail level, regardless of the underlying technology used to deliver them.
- 3.18 We noted that a quantitative analysis using the Hypothetical Monopolist Test (HMT)²⁸ framework may not provide the complete answer to whether fibre-based broadband access is in the same economic market as cable- and loop-based services on a forward-looking basis. This is because it is difficult to assess switching behaviour by customers for a product they have not yet experienced. In conjunction with our qualitative assessment, the retail broadband pricing information in Annex 8 of our first consultation as well as the indicative Small but Significant Non-transitory Increase in Price (SSNIP)²⁹ test based on the results of our consumer survey (Annex 9) suggest that the pricing of current retail NGA services delivered using fibre is likely to be constrained by existing loop- and cable-based services.

²⁵ See for example, O2's "Access" product and Talk Talk's "Essentials" package.

²⁶ For example Plus.net defines its "low cost areas" as those exchanges in the Market 3 areas.

²⁷ BT also adopts national pricing for its Infinity products, although its availability is limited to exchanges where BT has deployed its NGA network.

²⁸ We discuss the HMT framework in Annex 2 of this statement.

²⁹ We discuss the SSNIP test in Annex 2 of this statement.

- 3.19 Two respondents (BT and David Hall Systems) raised a point regarding the increasing usage of alternative broadband technologies such as mobile broadband and their impact on the market under consideration and argued that more account should be taken of them.
- 3.20 The most recent evidence available to us indicates:
- At the end of Q1 2010, Ofcom estimated that around 14 per cent of UK households were mobile-only i.e. had mobiles as the sole form of telephony.³⁰ Therefore the majority of households are already paying for phone line rental (through BT or another CP). This reduces the marginal increase in household spending when choosing fixed broadband access compared to mobile broadband access.
 - Mobile broadband packages (offered via a USB modem or “dongles”) tend to have a fraction of the download limits compared to fixed broadband access. For example, O2 provides a 1GB package at £10 a month³¹ on its mobile network compared to BT’s £13.99 package with a 10GB download limit and Virgin Media’s £20 package with no download limit (reduced to £12.50 a month if taken with a Virgin Media phone line). With data access via smartphones, mobile operators are starting to use pricing to manage data demand – withdrawing ‘unlimited’ data plans for new subscribers, enforcing usage caps on the most data-hungry users and off-loading mobile data onto alternative networks such as WiFi.
 - Increasingly popular online activities such as content streaming and sharing are more likely to be bandwidth hungry services. Ofcom’s research showed that catch-up TV grew by a third over the year to Q1 2010 to be used by 31 per cent of internet users. Consumers watched an average of 48 minutes of video content accessed via an internet connection per week,³² or just over 3.5 hours per month.
 - Current maximum speeds for mobile broadband access advertised are 7.2 Mbps, with most people generally achieving less than 1 Mbps on average.³³ This is a fraction of the speeds achieved through fixed broadband access. As such, for video streaming it is unlikely that a mobile broadband service can offer a comparable service quality. In addition, given that a 30 minute TV programme streamed online would use around 175MB,³⁴ a 1GB download limit could only provide less than 3 hours worth of video streaming.
 - Ofcom’s most recent market research shows that satisfaction is significantly lower amongst mobile broadband than fixed broadband users.³⁵ Problems with broadband speeds and reliability are more likely to be encountered by mobile broadband users than those with a fixed-line connection.
 - Broadband access tends to be shared between members of a household, and sharing of mobile broadband access is not as straightforward as installing a

³⁰ See Figure 5.67 of Ofcom’s Communications Market Report 2010.

<http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/UK-telecoms.pdf>

³¹ See http://shop.o2.co.uk/promo/o2mobilebroadband/tab/18_months

³² See Figure 2.13 of Ofcom’s Communications Market Report 2010.

<http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/UK-tv.pdf>

³³ See paragraph 3.105 of the first consultation.

³⁴ See <http://shop.virginmedia.com/help/traffic-management/traffic-management-policy.html>

³⁵ Those who claim to be either extremely or very satisfied among those accessing the internet via a mobile or dongle out of the home is 64 per cent and 59 per cent respectively compared with 85 per cent of fixed-line users.

wireless router that is often included in a fixed broadband contract.³⁶ Together with the reliability, speed and data limits of mobile broadband access discussed above we do not believe it is a practical option for multi-occupancy households looking for broadband access.

- 3.21 For the reasons set out above as well as in paragraphs 3.103 to 3.116 of the first consultation, we consider it appropriate to exclude mobile broadband access from the retail product market definition. With the increasing popularity of netbooks³⁷ using mobile broadband networks (e.g., Apple's iPad), it may be that mobile broadband access will in future become an increasing demand-side constraint on pricing of fixed broadband. We will monitor changes in the market and keep this under review.
- 3.22 One respondent (FCS) believed that there was a case for considering separate markets for business and residential customers because businesses often require higher levels of quality and reliability for their broadband services. Sky, on the other hand, agreed that the price premium that businesses are prepared to pay will be constrained by residential broadband product pricing.
- 3.23 In the first consultation, we discussed the demand and supply substitution effects associated with residential and 'standard' business broadband products (see paragraphs 3.132 to 3.151 of the first consultation). On the demand side, a range of price/quality options are available for both 'standard' business and residential services, and these appear to constitute a continuous chain of substitution without an unambiguous break between business and residential packages. On the supply side, CPs serving one market would be able to move into the other quickly and with little additional cost since there is no real difference between the wholesale inputs used to provide the retail products.
- 3.24 We discussed 'higher quality' business broadband products in paragraphs 3.152 to 3.159 of the first consultation. In relation to these services, we note that BEREC's consultation on market definition for business services³⁸ states that "*it is worth stressing that the precise line that divides high end business services from "standard" services or other types of business services may be difficult to draw*" because of the non-standard business contracts that may include different service characteristics and service levels. In our first consultation we considered what service specifications may potentially differentiate "high end" services from the 'standard' business broadband products and concluded that a chain of substitution is likely to exist between the two. This is supported by our previous survey evidence as well as marketing literature available. We therefore consider that there is a single market including all grades of residential and business services.
- 3.25 Regarding our approach to defining markets, the Ofcom Wales Advisory Committee proposed an alternative approach starting with a market definition based on the value consumers derive from retail services. They envisaged that this would enlarge the market definition compared to that proposed in the consultation document to include services such as mobile. Subsequent analysis of market power would be based on a pre-specified threshold of market share and the existence of "patch monopoly".

³⁶ See <http://www.mobile-broadband.org.uk/guides/how-to-share-your-mobile-broadband-with-another-computer/> and <http://www.expertreviews.co.uk/wireless-routers/258631/t-mobile-mobile-broadband-share-pack> for examples.

³⁷ Sometimes known as mini notebooks, they are a rapidly evolving category of small, lightweight, and inexpensive laptop computers suited for general computing and accessing Web-based applications, and are often marketed as "companion devices", i.e., to augment a user's other computer access.

³⁸ http://www.erg.eu.int/doc/berec/bor_10_46.pdf

- 3.26 As set out in Annex 2 of this statement, we are required to take utmost account of the Commission's Recommendation on Markets and SMP Guidelines when defining markets and assessing SMP. We consider that, at a detailed level, the analytical approach proposed by the Ofcom Wales Advisory Committee does not appear to follow that of the Recommendation and SMP Guidelines. We do not therefore answer the points of detail in the Committee's response. We note however that our approach to geographic market definition focuses on assessing the level of competition in each geographic area and has been updated to take account of market share.
- 3.27 Whilst no respondents specifically raised our approach to retail geographic market definition we have reviewed the position we set out in the first consultation. We said that developments in the retail market suggested that different geographic markets may be emerging at the retail level, although many ISPs are still maintaining a national pricing policy. However, the current extent of retail broadband competition reflects the impact of regulation in the WBA market as well as further upstream. Regulated provision of WBA makes it possible for multiple retail suppliers to offer service nationwide, so that it may currently be reasonable to view competitive conditions as sufficiently homogeneous to allow definition of a single national retail market. But for the purposes of reviewing WBA markets we must abstract from the impact of current regulation in these markets, an approach known as the "modified greenfield" approach.
- 3.28 Defining retail markets as they would be in the absence of regulation in WBA markets would inevitably be a hypothetical exercise. However, it is reasonable to suppose that the geographic pattern of retail competition would come to resemble the pattern of competition in the WBA market itself, and the developments in retail market competition referred to above appear consistent with this idea. We also noted in the first consultation that for the purposes of this market review, the retail market definition is used only to inform the analysis of wholesale markets. Given this, we proceed to our geographic market definition in WBA markets by analysing competitive conditions at the WBA level directly. It is therefore not necessary to conclude on the precise scope of the retail geographic market.

Conclusion on retail market definition

- 3.29 Based on the assessment above and taking into account the comments received, we conclude that the following retail broadband market is the relevant downstream market to wholesale broadband access:

Asymmetric broadband internet access which as a minimum provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes both business and residential customers in the UK

Wholesale product market definition

Consultation proposals

- 3.30 Wholesale broadband access products are used as inputs for downstream retail broadband internet access products. Therefore, in the first consultation, having proposed definitions for the relevant downstream markets we then set out our assessment of the relevant market at the wholesale level. At this point it is worth recalling that market definition is a means to an end and not an end in itself. The aim

is to identify the products and geographic area over which we then carry out our market analysis to assess the case for imposing ex ante remedies.

- 3.31 Our market definition, as set out in the first consultation, is consistent with the Commission's guidance and case law, which begins by hypothesising a relatively narrow WBA product market and then considers whether this should be broadened. Our starting point was to consider whether loop-based broadband access forms a distinct wholesale market. We then considered a number of candidate substitutes for this product and the extent to which they impose a sufficient constraint to be included within the scope of the relevant market.

Self-supply by Cable and LLU operators

- 3.32 As set out previously, we considered retail broadband access products based on cable technology to be included in the product market. In paragraphs 3.186 to 3.189 of the first consultation, we set out our assessment that the indirect constraints from cable and LLU in the retail market are sufficient for them to be included within the scope of the relevant wholesale market. This built on our economic analysis for the 2008 review ("the 2008 review").³⁹ We note that our approach to self-supply is consistent with that taken by many other NRAs in this market.⁴⁰
- 3.33 Although broadband access products based on cable technology may not currently be available at the wholesale level, competition from the retail packages offered by cable operators can still constrain the ability of an operator selling wholesale services to price above the competitive level. It will do so provided the indirect constraint from switching at the retail level is sufficiently strong. This is likely because if a wholesale provider were to introduce a price increase, we believe it is reasonable to assume that this increase would ultimately be passed on to the end customer at the retail level (as it would be if downstream markets were competitive such that providers could not price above the competitive level). In such a situation the end consumer could avoid the price increase by switching to broadband access products based on cable technology. Similarly, retail level switching to LLU operators will also have a constraining effect on WBA charges, whether or not LLU operators supply a WBA product to third parties.
- 3.34 We therefore considered that price increases above the competitive level at the wholesale level would have to be passed on to the retail prices. We expected that there would be switching at the retail level, resulting in a reduction in the derived demand for wholesale products sufficient to render a price rise at the wholesale level unprofitable such that the market should be broadened to include cable-based and LLU-based services.
- 3.35 We noted that if an operator is found to hold a position of SMP in the WBA market under this broader market definition, this conclusion would only be strengthened by an alternative conclusion of a narrow wholesale market for loop-based local access only.

³⁹ For the complete discussion, see paragraphs 3.163 onwards of *Review of the wholesale broadband access markets 2006/07*, 15 November 2007

<http://stakeholders.ofcom.org.uk/consultations/wbamr07/>

⁴⁰ A report by BEREC published in March 2010 surveys the treatment of indirect constraints and shows how inclusion at the product market definition stage is common. See

http://www.erg.eu.int/doc/berec/bor_10_09.pdf

Fibre

- 3.36 We also considered whether NGA services provided using fibre should be included in the wholesale product market definition in paragraphs 3.190 to 3.196 of the first consultation.
- 3.37 Fibre services include both Fibre To The Home/Premise (FTTH/P) and Fibre To The Cabinet (FTTC) services. FTTC services use Very high bit rate Digital Subscriber Loop (VDSL) based technology at the cabinet to provide super-fast broadband over the existing copper network to the home/premise.
- 3.38 Our retail market analysis proposed a single market for broadband internet access at all speeds with no upper limit, and hence included high-speed services only available over fibre. The current market is such that fibre deployment is an overlay to existing copper and cable networks and the vast majority of online media can be accessed using current generation technology. Therefore at the retail level we considered that current generation broadband services provide a constraint on the price of fibre-based products through the chain of substitution.
- 3.39 Through indirect constraints at the retail level, we believe that there would be a single market for wholesale copper-, cable- and fibre-based products:
- If all three types of wholesale products were made available in the absence of wholesale regulation, a price increase in one is likely to encourage direct substitution to the others because they are all used to provide similar services at the retail level.
 - If only copper-based wholesale products were available, a wholesale price increase would be passed through to retail prices. Given the small (and in some cases zero) price differential between current and next generation products, this would encourage customers to take up the fibre-based alternative, thereby reducing the demand for the wholesale copper-based broadband product.
 - If no wholesale products were available, network operators that had deployed their own networks using copper, cable or fibre to provide the access network would compete at the retail level where the supply of fibre-based broadband access is constrained by the price of current generation (e.g. copper based) services.
- 3.40 We did not consider that an increase in the wholesale charge of either loop-based or cable-based broadband access would lead to any supply-side substitution using fibre-based access. This is because the investment required for next generation access deployment would not allow a CP to enter the market within a short time scale and at low cost.
- 3.41 On balance we believed that fibre-based broadband access should be included within the scope of the relevant wholesale market definition because of close substitution at the retail level. We note that, at least in the context of FTTC, this is consistent with the NGA Recommendation which states that WBA provided over VDSL should be considered as a chain substitute to existing WBA over copper-only loops.

Mobile

- 3.42 In the light of our analysis of retail markets, we believed that an insufficient number of customers would be willing to switch to mobile broadband as a result of an increase in fixed broadband prices for fixed and mobile internet access to be regarded as part of a single market. We did not consider that the indirect constraint would be sufficient to prevent a profitable SSNIP for fixed broadband access at the wholesale level. As set out in paragraphs 3.197 to 3.199 of the first consultation, we considered the possibility of direct substitution effects at the wholesale level. This would involve CPs using mobile broadband to offer fixed broadband. This is unlikely to be profitable for CPs because of the stark differences in service characteristics and customer experience between the two.
- 3.43 Given this, and our view that in the short term, the scale of investment required would not allow mobile network operators to profitably respond to a SSNIP by a hypothetical monopolist of fixed broadband services, we proposed to conclude that mobile broadband access is in a separate product market at the wholesale level.

Fixed wireless access

- 3.44 Fixed wireless access involves the use of wireless technology to deliver the “last mile” access to connect subscribers to the telecommunications network without the need for cables for example via WiFi or WiMax.⁴¹
- 3.45 Our retail market analysis suggested that fixed wireless access services are currently priced and positioned as a cheaper alternative to symmetric DSL (SDSL) and therefore targeted primarily at SMEs. In the business connectivity market review⁴² we also concluded that demand characteristics between ADSL and SDSL are such that one is unlikely to be a substitute for the other. On the supply-side the developments in fixed wireless technology are unlikely to materialise on a sufficient scale and with sufficient rapidity to affect the wholesale market definition under consideration. We therefore proposed that fixed wireless access should not be included in the wholesale WBA market definition, as set out in paragraphs 3.200 to 3.203 of the first consultation.

Broadband access using satellite

- 3.46 When considering satellite-based broadband access, our assessment in paragraphs 3.204 to 3.205 of the first consultation document showed that existing price differentials at the retail level mean that there is unlikely to be sufficient demand from business customers (and even less demand from residential customers) to undermine the profitability of a 10 per cent SSNIP for loop based broadband access at the wholesale level. The lack of indirect constraints at the retail level suggest that satellite-based local access is more appropriately considered to be outside the scope of the relevant wholesale market.

⁴¹ Worldwide Interoperability for Microwave Access (WiMax) is a technology that provides wireless transmission of data using a variety of transmission modes, from point to multipoint links to portable and fully mobile internet access.

⁴² *Business Connectivity Market Review*, 13 Feb 2009

<http://stakeholders.ofcom.org.uk/consultations/bcmr08/>

Business versus residential

- 3.47 We noted in paragraphs 3.206 and 3.208 of the first consultation that despite the differentiation between business and residential services at the retail level, such distinctions do not exist at the wholesale level. This was largely due to supply-side considerations whereby the same underlying wholesale input is used to provide downstream retail products to business and residential customers, and therefore the costs are the same. This means that there is extremely limited scope for a wholesale provider to price discriminate effectively between the two. An increase in the price of “business” access products would induce users to switch to “residential” access products and vice versa.
- 3.48 Whilst there may be a distinction in the ‘service wrap’ this is generally downstream of the wholesale broadband access level, i.e. it is provided by CPs who supply retail services to end users. These services may involve the use of wholesale broadband access as part of a standard virtual private network (VPN) connected to the internet or a closed VPN that is connected directly to a private network rather than the internet.
- 3.49 Based on this assessment, we proposed that the WBA product market should include business and residential markets. This is consistent with our previous market reviews as well as with the Commission’s Recommendation on Markets which does not define separate markets for business and residential broadband markets.

Bundling

- 3.50 We proposed that the presence of retail bundles did not affect the definition of the wholesale market. Our view is that although there has been an increase in demand for bundled products at the retail level⁴³ where there is bundling of different services at the retail level, this would create complementarities at the wholesale level rather than substitution. For example, a wholesale broadband access service would not be a substitute for a wholesale television service where broadband internet access and television are provided as a bundle at the retail level. The retail provider would need access to both. It is also likely to be the case, over the period of this market review, that in order to provide such retail bundles, the wholesale elements would need to be obtained from different wholesale suppliers. However, this may change in the future and as such may be more relevant for future market reviews.

Summary and analysis of consultation responses

- 3.51 The majority of respondents agreed with our proposed wholesale product market definition, and acknowledged that our approach reflected the current state of the market relevant for this market review.
- 3.52 The Commission in its response to our first consultation raised the issue of whether a purchaser of WBA services would partly absorb any price increase instead of fully passing it on to the retail end customer. If so this would dilute the indirect constraint provided from the retail market, potentially to the point where the constraint is no longer effective.
- 3.53 Our analysis of the strength of indirect constraints was set out in paragraphs 3.186 to 3.189 of the first consultation, building on the analysis contained in the previous

⁴³ Ofcom’s Communications Market Report 2010 showed that one in two households buy their communications services in a bundle, up from less than a third five years ago.

market review in 2008.⁴⁴ We concluded that, as our survey evidence suggests the strength of retail substitution has not materially changed since 2008 (if anything cable broadband is in a stronger position in relative terms than it was in 2008), the previous conclusion that retail substitution constrains wholesale pricing still holds.

- 3.54 In any case, as set out in the second consultation document at paragraphs 3.82 to 3.88 we also highlight that it is not necessary for full pass-through to occur for an indirect constraint to be sufficiently strong to justify placing two products in the same product market. All that is required is that a sufficient proportion of a price increase should be passed through, and that the response of retail customers should then be sufficient for a SSNIP in the wholesale price to be rendered unprofitable. Nonetheless we remain of the view that the assumption of a very high pass through is reasonable, based on two distinct reasons. Firstly, all of the available evidence suggests that cable is a strong competitor at the retail level and indeed may now be stronger than at the time of previous market reviews. Secondly, we believe that competition at the retail level is sufficiently strong that retailers using WBA would be unlikely to be able to absorb any significant increase in wholesale costs in the medium term.
- 3.55 Whilst it is difficult to empirically assess the historic cost pass-through,⁴⁵ there is some evidence that retail broadband prices closely reflect costs and therefore that it is reasonable to expect changes in wholesale prices to be passed on, for example, from geographic variations in prices. These variations indicate that wholesale cost differences, in particular those resulting from use of BT's WBA product rather than LLU, are reflected in retail prices. Our own analysis of costs and prices also suggests that any increase in wholesale costs could not easily be absorbed and would therefore be passed on to customers.⁴⁶
- 3.56 Furthermore, we also note that, under the logic of the HMT, the price of the wholesale broadband access input would be passed on in full. This is because the product in question must be assumed to be supplied at the competitive price prior to the hypothetical increase and, in this case, we would expect the retail level of the supply chain to be competitive. Our view is that there are no significant barriers to entry at the retail level and hence there is no SMP at the retail level as the bottlenecks in the supply chain relate to upstream inputs. In this context we would expect to see full pass through of a wholesale price increase. We further note that, absent regulation, wholesale supply might in some circumstances be priced on a "retail minus" basis (that is, the price is set equal to the retail price minus downstream costs of supply), since this compensates the incumbent for the full cost to it of wholesale supply including any loss of retail profit. In this hypothetical scenario there is an automatic link between the wholesale price and the incumbent's own retail price, which will help WBA purchasers pass on any increase in wholesale prices.
- 3.57 David Hall Systems suggested that the increasing deployment of fibre and the use of mobile broadband could have an impact on the product market definition and more account needs to be taken of any possible changes.

⁴⁴ See footnote 39 above.

⁴⁵ In Market 1 and Market 2 where BT has SMP, BT's WBA charges are subject to regulation (though not a charge control) and in practice have changed relatively little over time. In Market 3, BT is able to price WBA on a bespoke basis. It is difficult to empirically estimate the pass-through rate because of bundled offers at the retail level.

⁴⁶ See Annex 9 of the first consultation.

- 3.58 We recognise that fibre deployment could have an impact on the product market definition if users valued the additional service qualities associated with the wholesale fibre-based product that are not available on loop- and cable-based products. However, at the retail level we observe that consumers currently need significant price incentives to migrate to fibre-based services. This suggests that willingness to pay for additional speed is currently relatively low and that the indirect constraint is likely to be such that a profitable increase in the charge for the fibre-based product, above the competitive level, is unlikely to be sustainable.
- 3.59 Nonetheless, as services develop and consumers demand higher bandwidths (for example as a result of YouView⁴⁷) it may be the case that current generation broadband access will no longer be regarded as sufficient. This would result in a break in the chain of substitution at the retail level and could imply the existence of a separate wholesale market for fibre-based broadband access.
- 3.60 Similarly with mobile broadband access we recognised that there have been Long Term Evolution (LTE) trials which promise very high data rates, comparable with and even exceeding the existing retail fixed broadband products using fibre. However, it is unlikely that this would evolve over the next three or four years such that CPs could use it effectively as a direct substitute for wholesale fixed broadband access, or that sufficient consumers would be willing to regard mobile broadband as a substitute rather than a complement to fixed broadband.
- 3.61 In both cases, based on current market conditions, we do not expect either form of broadband access to change dramatically over the next few years, but will keep this under review as markets develop.
- 3.62 In response to our second consultation, BT suggested that the wholesale broadband access product should cover only services between the end user and the Broadband Remote Access Server (B-RAS). They argue that this is a continuation of the policy set in 2008 and would object to any expansion of the definition beyond the B-RAS as a result of this market review.
- 3.63 The 2008 review defined the market as including “any backhaul necessary to allow interconnection with other Communications Providers” because of the migration of wholesale broadband access products to next generation infrastructure and the inherent unpredictability at the time of the precise method in which these services will be delivered. Under such circumstances, we believed it was more appropriate to define a broader scope of the relevant market. The effect of this change in the definition from the 2004 WBA Market Review was that the backhaul can extend beyond the parent core node to a point which allows interconnection with other operators. We have not proposed further changes to the definition set in the 2008 review in this regard.

Conclusion on wholesale product market definition

- 3.64 Based on the analysis set out in our March 2010 Consultation and taking into account all the responses summarised above we consider the relevant wholesale broadband access product market to be:

Asymmetric broadband access and any backhaul as necessary to allow interconnection with other communications providers which

⁴⁷ YouView is a new application that allows users to watch TV through a broadband connection, available in 2011. <http://www.youview.com/>

provides an always-on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial-up connection. This market includes both business and residential customers.

Wholesale geographic market definition

- 3.65 In this section we summarise our proposals regarding geographic market definition presented in the first consultation and in the second consultation, and present our final conclusions in the light of the consultation responses we received. We set out in detail the analysis we conducted at each stage of the review process and the evidence it was based on, the responses we received to both consultations and the market developments that occurred over the course of the review. In doing so we take care to spell out how our thinking has changed and the reasons why.
- 3.66 Despite the changes to our geographic market definition over the course of the review, we would emphasise that our proposals have remained constant for the vast majority of delivery points (DPs) in the country: those situated either in exchanges where only BT has a significant presence or in exchanges that have experienced substantial entry and where competition is well established.
- 3.67 We would further note that the issue of geographic market definition involves an element of judgement since there is a wide variation in the competitive conditions across different areas of the country. We have sought a position that appropriately balances the competing views, considers fully all the available evidence and uses objective criteria to identify areas in which competitive conditions are sufficiently homogeneous to be regarded as a single market.
- 3.68 We would also emphasise that we have maintained essentially the same methodology for defining geographic markets throughout the review. While the selection criteria used in the market definition have been adjusted this is a relatively small amendment made within an established methodology. We do not see our changes as setting a rigid precedent for future market reviews in either this or other markets Ofcom regulates. Each review will consider the available evidence and make an appropriate decision about the relevant geographic market in each case.

Summary of data sources and analysis

- 3.69 Before setting out the consultation proposals and responses we summarise the sources of information we have used and the analysis we conducted as part of the geographic market definition assessment in this review. Full details can be found in Annexes 3 and 4 of this statement. We would highlight that although we provide a comprehensive presentation of our arguments and conclusions below, the full details of the analysis on which we have made our decisions is contained in the Annexes.
- 3.70 The main sources of information we have used are:
- BT Wholesale and Openreach data on wholesale input purchases (both WBA and LLU) by operator at the exchange level. The most recent data was obtained in June 2010.
 - Coverage data supplied by Virgin Media.

- The response to two information requests sent to the major Local Loop Unbundling Operators (LLUOs) and Virgin Media on their plans for network expansion (sent in September 2009 and June 2010).
- 3.71 Additionally, following the second consultation BT has identified two exchanges that were missing from our data. These are Haydon Wick (SSHYW) and Heathrow Terminal 5 (LWXEK). Haydon Wick covers some of the DPs previously covered by the Blunsdon (SSBBN) exchange which is part of Market 3. Analysis of our data showed that there are four POs present or forecast by December 2010 in Haydon Wick. BT is the only PO present in the Heathrow Terminal 5 exchange.
- 3.72 We discuss this data in Annex 3 in more detail.
- 3.73 This data allowed us to calculate WBA market shares at the exchange level, to calculate the coverage that each operator has across the country and to form an assessment of future trends based on roll out plans and the potential for migration of customers by the POs in exchanges they have unbundled from supply based on BT's WBA inputs to supply using their own network. When combined with similar work done during the 2008 review we have also been able to assess trends in the market over time.
- 3.74 Annex 4 presents a detailed analysis of patterns and trends in BT's service share across exchanges. It shows in detail the distribution of BT's service share in different groups of exchanges and how this has changed over time. We also show the impact of expected migration on BT's service share. We would highlight that while much of the discussion below is presented in terms of average service shares within different groupings of exchanges our analysis has taken full account of the broader distributions of service shares.
- 3.75 With regard to coverage and network expansion plans by the POs we received information on both committed plans (up to December 2010) and further uncommitted plans. Paragraphs A3.17 to A3.27 show the size of both committed and uncommitted investment plans. We have used both of these to form a view on the potential for further investment during the period covered by the review, along with data on average exchange size (and hence the viability of entry) and past trends. However, we have decided to only rely on committed plans in the exercise of counting the number of POs in an exchange for the purpose of the market definition.
- 3.76 Annexes 3 and 4 also contain sensitivity analysis regarding many of the decisions on thresholds we have made in this review, including the coverage threshold at which Virgin is treated as a PO and the threshold for BT's service share that defines the boundary between Market 2 and Market 3.

Summary of the first consultation

- 3.77 In the first consultation,⁴⁸ we defined geographic markets using the methodology first adopted in the 2008 review and subsequently set down in a Common Position published by the European Regulators' Group (now the Body of European Regulators for Electronic Communications).⁴⁹

⁴⁸ See paragraphs 3.211 to 3.300 of the first consultation.

⁴⁹ European Regulators Group, ERG Common position on Geographic Aspects of Market Analysis (definition and remedies), October 2008.

http://erg.ec.europa.eu/doc/publications/erg_08_20_final_cp_geog_aspects_081016.pdf

- 3.78 The methodology seeks to identify areas with sufficiently homogeneous competitive conditions and applies to those cases where it has been established that a national market cannot be defined on the basis of common pricing constraints. In the first consultation (and in keeping with our approach in the 2008 review) we identified the existence of local pricing in the WBA markets and concluded that a national market could not be defined on this basis.⁵⁰
- 3.79 The method we used involves three main steps:
- First, the basic geographic unit needs to be selected, for example post codes or exchange areas;
 - Second, the homogeneity of competition needs to be judged according to factors such as barriers to entry, the number of significant suppliers in the market, distribution of market shares and price-cost margins, and as such necessarily means the geographic market definition and SMP analysis are somewhat inter-related; and
 - Third, areas with similar competitive characteristics need to be aggregated in order to define the geographic areas over which to conduct the SMP analysis.
- 3.80 In keeping with our approach in the 2008 review, in the first consultation we selected BT's local exchange areas as the geographic unit of analysis. This is because LLU is a significant driver of competition in the WBA market and the geographic area in which an LLU operator can compete is determined by the areas served by the BT local exchanges which it has unbundled.⁵¹ It is also the basis on which BT and LLU operators have generally set their local 'de-averaged' prices.⁵²
- 3.81 Competitive conditions were assessed on the basis of a number of factors including market shares, network coverage and the number of Principal Operators (PO) present in the local exchange. As in the 2008 review POs were chosen on the basis of their ability to impose a material competitive constraint on BT. However, whereas an explicit national coverage threshold of 10 per cent was used in that review to identify POs, we chose not to set an explicit threshold in this review. As before, the group designated as POs includes those which are large enough to impose a material competitive constraint and excludes those which are clearly niche operators. In this review we identified those relatively large operators with a substantial presence across the UK as a whole on the basis of network coverage (along with national market shares) without a rigid market share threshold. To some extent therefore, this potentially involves more judgement but there remains a clear dichotomy between the POs and the other operators.
- 3.82 The operators classed as POs were: BT, Cable & Wireless Worldwide (C&WW), O2, Orange, Sky, Talk Talk and, in those local exchange areas where cable coverage exceeded 65 per cent of DPs, Virgin Media.⁵³ We excluded the operator Udata Infrastructure because its coverage was relatively low at only slightly above 10 per cent and because it can be regarded as having a 'niche' business model aimed exclusively at the public sector. Our threshold for Virgin Media's coverage of DPs in an exchange remained unchanged from the 2008 review. We recognised this

⁵⁰ See paragraphs 3.230 to 3.236 of the first consultation.

⁵¹ See paragraphs 3.237 to 3.240 of the first consultation.

⁵² For example, prior to the 2008 review BT set different prices in "dense" and "non-dense" exchange areas.

⁵³ See paragraphs 3.241 to 3.295 of the first consultation.

threshold was inevitably somewhat subjective but we considered a higher figure (above 50 per cent) was appropriate given the potential costs of expansion of the cable footprint. As with the 2008 review we conducted a sensitivity analysis that showed that the geographic market definition boundaries changed only to a very limited extent as the threshold for Virgin Media's coverage changed.⁵⁴

- 3.83 In designating these operators as POs, we envisaged that the competitive constraints they are able to impose on BT are primarily indirect, that is, it is competition at the retail level which constrains BT at the wholesale level. This reflects our view that switching at the retail level can act as an indirect constraint on BT's wholesale charges to downstream purchasers, which is a crucial element to our whole approach to WBA regulation. This point is discussed above in the product market definition section and further below when we discuss the Commission's response to the first consultation.
- 3.84 Using this approach, and after having assessed a number of indicators of the competitive conditions in each of the local exchange areas, we proposed four separate geographic markets, defined using the following proxies for the degree of competition:⁵⁵
- The Hull Area: (0.7 per cent of UK premises);
 - Market 1: exchanges where only BT is present (14.2 per cent of premises);
 - Market 2: exchanges where two or three POs are present or forecast to be present during the market review period (13.8 per cent of premises); and
 - Market 3: exchanges where four or more POs are present or forecast to be present during the market review period (71.3 per cent of premises).
- 3.85 By defining geographic markets on the basis of the number of POs present, we maintained the approach we adopted in the 2008 review. We proposed that this was the most appropriate (as well as practical) method of defining geographic markets since we believed that the number of POs present correlates closely with the strength of competition in WBA markets and therefore acts as an effective proxy. In particular, this is because the cost structure in this market gives LLUOs a clear incentive to compete effectively and gain market share in those exchanges that they unbundle.
- 3.86 We also maintained the approach of defining three markets (in addition to a separate market for the Hull Area), reflecting the fact that there is a middle ground between those areas where only BT is present and competitive areas where many POs are present. First we took the view, as in the 2008 review, that a natural break in competitive conditions occurs when there are at least two POs present and those exchanges can be regarded as heterogeneous with respect to those where BT is the only PO present. We also maintained the view that competitive areas (i.e. Market 3) could be defined where there are at least four POs present in a local exchange. This position followed from a detailed analysis of:⁵⁶
- patterns in PO coverage;

⁵⁴ See paragraphs A10.31 to A10.38 of the first consultation.

⁵⁵ See paragraphs 3.296 to 3.300 of the first consultation.

⁵⁶ See paragraphs 3.262 to 3.308 and Annex 12 of the first consultation

- market shares (including the potential for increases based on the migration of customers a PO supplies via WBA wholesale inputs in an exchange it has unbundled); and
 - barriers to entry and the potential for future LLUO rollout.
- 3.87 We argued that BT's average market share was high in exchanges with three POs (56 per cent based on the information available at the time) and that, while there was the potential for some further reductions because of the migration of customers currently supplied via BT's wholesale inputs, further reductions were not likely without additional entry. We took the view that further entry into these exchanges was unlikely given the relatively small exchange sizes (as the number of customers that a LLU operator connects in the exchange is one of the key drivers of efficient deployment). We also noted that only one operator other than BT had a significant coverage across the area comprising all exchanges with two and three POs and that the presence of others in this area was much more fragmented.
- 3.88 We noted in the consultation that future consolidation in the market may lead us to adopt a different approach to defining the geographic market (see paragraph 3.295).

Market developments between the first and second consultation

- 3.89 The assessment contained in the first consultation was based on the latest information available at the time. Before discussing the responses to our first consultation we highlight a couple of market developments that occurred subsequently and which are relevant for our analysis.
- 3.90 After the first consultation was published, one of the POs – Orange – entered into a long-term exclusive agreement to purchase WBA services from BT. Our understanding of the arrangement is that Orange will, following a period of migration, no longer provide services based on its own LLU deployments. Therefore, we took the view that Orange should no longer be considered a PO.
- 3.91 Another development has been the continuing rollout by LLUOs of their networks. Our first consultation foresaw little potential for rollout beyond the firm plans that operators had in place at the time. However, a subsequent information request revealed that LLUOs have developed further plans to unbundle local exchanges.

Responses to the first consultation

- 3.92 In broad terms respondents agreed with our methodology for defining geographic markets, including our choice of BT local exchanges as the geographic unit and the concept of defining POs, and agreed with our approach of defining three separate markets. Disagreement focussed on the precise boundary between Market 2 and Market 3 and as such on the precise size of the de-regulated area of the market

BT's response to the first consultation

- 3.93 BT provided an in-depth response backed up by a significant amount of analysis and evidence, including three expert reports (though one of these focused only on profitability in Market 1) that it had commissioned. BT agreed with our general methodology for defining geographic markets and agreed that it was appropriate to define three separate markets (in addition to a separate market for the Hull Area), including a market where BT is the only operator present (Market 1).

- 3.94 However, BT disagreed strongly with our conclusions regarding the correct boundary between Market 2 and Market 3. It argued that there is significant evidence that competition is intense and increasing in many exchanges that fell under our original proposed definition for Market 2, and that Market 3 should be defined by the presence of at least three POs instead of at least four.
- 3.95 BT commissioned two expert reports – one by Professor John Nankervis⁵⁷ and one by SPC Network⁵⁸ – and, drawing on these, made the following specific arguments in support of its position:⁵⁹
- Ofcom had not accounted properly for the conceptual link between geographic market definition and SMP analysis. BT argued, on the basis of a variety of concentration and competition measures, and retail pricing practices by LLUOs,⁶⁰ that it should not be regarded as having SMP in exchanges where three POs are present and that these exchanges can be regarded as competitively homogeneous with the exchanges in Market 3.
 - Ofcom had not put sufficient weight on forward-looking considerations. In particular we had failed to appreciate the potential for future rollout by focusing only on current plans and also by using an entry model with overly conservative assumptions. We also failed to account for the impact of migration of LLUO's off-net customers in exchanges that have been unbundled.
 - Ofcom's approach wrongly implied that the effect of the acquisition of Tiscali by Talk Talk *per se* would confer significant market power on BT in those exchange areas in which the merger has the effect of reducing the number of POs from four to three, and which otherwise would therefore have stayed in Market 3. Hence, the 21 exchanges that mechanistically move from Market 3 to Market 2 as a result of the merger should be excluded from Market 2 (and remain in Market 3).
 - Ofcom underestimated the strength of Virgin Media. It should be classed as a PO when it has 50 per cent coverage of a local exchange area, instead of 65 per cent.
 - Ofcom arbitrarily excluded one operator (Uptdata Infrastructure) from the analysis even though strictly speaking it meets the proxy criteria used to define a PO.

Other responses to the first consultation

- 3.96 Most other respondents to the first consultation were satisfied with our geographic market definition assessment. In particular most of the other POs (C&WW, O2, Orange, Sky and Virgin Media) all agreed with our assessment for the geographic boundaries between the different markets. Talk Talk did not specifically comment on our geographic market definition but agreed with our SMP analysis based on it. Vodafone stated that it "broadly concurs with the analysis and rationale as explained

⁵⁷ We have published a non-confidential version of this report: Economic Modelling of broadband penetration in the UK 2006-2010, Revised 26 June 2010

<http://stakeholders.ofcom.org.uk/consultations/wba/?showResponses=true>

⁵⁸ Wholesale Broadband Access: Geographic Market Definitions in the UK, Prepared for BT plc, 28th May 2010. http://stakeholders.ofcom.org.uk/binaries/consultations/wba/responses/BT_Annex_3.pdf

⁵⁹ BT also commissioned a report from Dot econ on our proposals for a charge control in Market 1.

⁶⁰ LLUOs typically set a uniform on-net retail price. As most of LLUO's unbundled exchanges are located in Market 3 exchanges (as defined in 2008), this means their retail prices in Market 2 exchanges largely reflect competitive conditions in Market 3.

in the consultation documents and supports Ofcom's preferred options in both markets".⁶¹

- 3.97 The European Commission reiterated comments it had made during the 2008 review, where it argued that geographic markets should be defined using more criteria than just the number of operators present in a local exchange, including the levels and trends in market shares.

Further work to address the respondents' comments

- 3.98 We considered all the responses to the first consultation in detail and conducted a significant amount of further analysis, which we presented in the second consultation. This included commissioning an expert opinion on the econometric work BT provided and revisiting our analysis of market conditions in exchanges where three POs are present or forecast, both in the light of BT's arguments and using new data we obtained on market shares and on LLUO's firm rollout plans.
- 3.99 We noted in our second consultation that, in terms of the proportion of DPs affected in the country, the extent of disagreement regarding the geographic market definition was relatively limited. In particular, BT agreed with our proposals regarding the majority of exchanges which account for over 90 per cent of UK premises. Based on the geographic market definition as proposed in the first consultation, BT disagreed with our proposals only in relation to local exchanges where three POs were present or were forecast to be present, of which there were 243. These 243 exchanges represent 4.3 per cent of BT's local exchanges and serve 6.5 per cent of UK premises. In its response BT argued that these exchanges should be assigned to Market 3, instead of Market 2, and hence de-regulated. Overall, however, there was a substantial measure of agreement with our proposals from BT and the other respondents.
- 3.100 After considering BT's response in detail, we disagreed with a number of aspects of the analysis and did not believe it had made a sufficiently convincing case that the boundary between Market 2 and Market 3 should be changed from four POs to three POs.⁶² In summary:
- We accepted that the econometric evidence supplied by BT was conducted in a careful manner using a detailed dataset. However, we queried some of the methodological choices (for example the use of penetration rates rather than market share to measure BT's position in an exchange).
 - We noted that much of BT's analysis on market shares in different exchanges focused on operators that BT identified as 'Tier A'. We felt this categorisation was somewhat subjective.
 - We also noted that the Herfindahl-Hirschman Index (HHI) measures⁶³ of market concentration presented by BT to support its arguments showed high levels of concentration across all three markets according to standard benchmarks. Given this we did not feel HHI was particularly useful in this context.

⁶¹ David Hall Systems Ltd offered the view that exchanges where three POs are present should be differentiated from exchanges where two POs are present. The response, however, did not make clear whether the three PO exchanges should then be aggregated into the definition for Market 3, as BT argues.

⁶² See paragraphs 3.19 to 3.47 in the second consultation for the full details of our response to BT.

⁶³ HHI is defined as the sum of the squared values of market shares in the market.

- BT referenced academic work showing that the largest benefits from entry in a market come with the addition of the second or third firm. We took the view that the academic paper BT cited only covered very specific examples. Nonetheless, we accepted that the presence of three firms in a market could, in principle, be sufficient to generate effective competition in some instances.
 - BT argued that LLUOs' practice of setting common retail pricing across exchanges they have unbundled linked Market 2 and Market 3 exchanges (as defined in the first consultation) and caused a 'spill over' in competitive conditions from the latter to the former. We took the view that these effects would show up in BT's market share and that, in any case, it is hard to predict pricing strategies on a forward looking basis.
 - We remained of the view that Uptdata Infrastructure should not be counted as a PO since it has a low national coverage and adopts a niche business model.
 - We disagreed that the threshold for Virgin Media to be counted as a PO in an exchange area should be reduced from 65 per cent to 50 per cent coverage in an exchange area (we also noted that this made little difference in practice⁶⁴).
- 3.101 However, despite some reservations regarding some of BT's arguments we did acknowledge that it had made a strong case that some exchanges allocated to Market 2 in the first consultation could be regarded as sufficiently competitive. In the light of new data received from operators we also accepted that the view we took in the first consultation regarding the potential for future rollout had been overly cautious. We also acknowledged that there is heterogeneity within exchanges where three POs are present or forecast and that conditions in the more competitive exchanges within Market 2 were close to those in the Market 3 exchanges.
- 3.102 In the light of comments from both BT and the Commission, and market developments following the first consultation, we accepted that a geographic market definition based only on the number of POs in an exchange may no longer be appropriate and that the addition of a service share criterion in the definition may help us to identify better the boundary between Market 2 and Market 3 (we refer to service shares not market shares to emphasise that it is a measure at the exchange level and not across a 'market' as such).

Summary of the second consultation

- 3.103 In the second consultation we revised the geographic market definition in the light of comments from respondents and market developments subsequent to the first consultation, including the wholesale agreement between BT and Orange and new information on LLUO's rollout plans. In our view the wholesale arrangement between BT and Orange means that Orange can no longer be regarded as a PO for the purposes of market definition and, where market shares are used in the review, its WBA volumes should be added to BT's. The new rollout plans we obtained from LLUOs showed continuing expansion by operators and suggested that the potential for new rollout is higher than we had anticipated when we first consulted.
- 3.104 We maintained the definition of Market 1 (i.e. where BT is the only PO present) and focused on revising the boundary between Market 2 and Market 3, which in practical terms separates those areas where BT is regarded as having SMP from those areas where it does not.

⁶⁴ See paragraphs A6.32 to A6.34 of the second consultation for the relevant sensitivity analysis.

- 3.105 We proposed to add a service share criterion⁶⁵ to those exchanges where three POs are present or forecast such that exchanges where BT's current service share is less than 50 per cent would now fall within Market 3. As in the first consultation exchanges where two POs are present or forecast would fall in Market 2 and exchanges where four or more POs are present or forecast would fall in Market 3. Our view was that in these exchanges a PO count was sufficient to indicate the state of competition and that it is only in exchanges where three POs are present or forecast that an additional service share criterion is needed.
- 3.106 We proposed to measure BT's service share after adjusting for the migration of POs' off-net customers. That is, we recognised that a PO has a strong incentive to migrate customers to its own network in areas where it has unbundled an exchange and we expect this to happen within the forward look covered by the review. In measuring BT's service share we also chose to include self-supply by POs (including Virgin Media). We explained that in our view retail competition from these operators would act as an indirect constraint at the wholesale level.⁶⁶
- 3.107 A 50 per cent threshold was chosen to separate Market 2 and Market 3 on the basis that this is the standard threshold at which SMP can be presumed according to Commission guidance and case law and that, compared to a lower threshold (most obviously 40 per cent, below which the existence of SMP is usually thought to be unlikely), is also high enough to allow for the effects of continued rollout by POs. In choosing this threshold we did not take an explicit view on either the likely fall in BT's share over the period covered by the view or the exact level at which SMP can be considered a risk.
- 3.108 We noted that introducing an additional service share criterion in the exchanges served by BT and two competing POs as an additional proxy for geographic market definition has a number of advantages. It is consistent with SMP indicators, accounts for heterogeneity within exchanges where three POs are present or forecast and allows the impact of Virgin Media to be taken into account in exchange areas where its coverage is more limited.⁶⁷ It also allows smaller adjustments to geographic market definition to reflect the potential for further rollout beyond current plans.⁶⁸
- 3.109 Our proposed definitions were:
- The Hull Area: (0.7 per cent of UK premises);
 - Market 1: exchanges where only BT is present (11.7 per cent of premises);
 - Market 2: exchanges where two POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is greater than or equal to 50 per cent (10.0 per cent of premises); and
 - Market 3: exchanges where four or more POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is less than 50 per cent (77.6 per cent of premises).

⁶⁵ The term service share is used rather than market share to make clear that each individual exchange is not being defined as a separate market in the sense used in market reviews.

⁶⁶ See paragraphs 3.82 to 3.88 in the second consultation.

⁶⁷ This is because a service share criterion at the retail level captures better the actual impact of Virgin Media where its coverage does not cover the entire footprint of the exchange area.

⁶⁸ In contrast, a geographic market definition based on a PO count alone can only be changed in large increments.

Responses to the second consultation

3.110 Respondents generally accepted that an additional criterion of service share could be used to refine the definition of the boundary between Market 2 and Market 3. Disagreement centred on the precise service share threshold to use and largely reflected differing views on two key issues:

- The likely future reductions in BT's service share (including the extent of future rollout plans by POs and the speed and scale of migration); and
- The level of service share at which SMP should be presumed in this context.

BT's response

3.111 BT's response included further work by Professor Nankervis, including a response to the academic peer review we commissioned and new empirical work, and a response by SPC Network to our comments on their analysis.

3.112 BT's main response argued that the scope for future reductions in its service share was larger than we had appreciated and that our approach to geographic market definition remained too cautious. BT further argued that market conditions, in particular the practice by other operators of setting common retail prices across their networks, means that the market share thresholds at which it has SMP are higher than those usually used in competition law (where there is a presumption of SMP if market shares exceed 50 per cent). BT proposed that a 60 per cent market share threshold should be used to define the boundary between Market 2 and Market 3.

3.113 BT argued that we had not accounted for likely additional rollout beyond December 2010, the last date for which we have information on POs' committed rollout plans. This is despite the fact that between the two consultations significant new rollout plans have materialised. BT believes a sense of likely rollout could be obtained by looking at a time series and projecting it forward and notes in paragraph 16 of its response:

"We do not believe that Ofcom should just have taken firm plans into account but could have reasonably assumed at least some additional roll-out will take place over the following regulatory period. For example, a simple means of projection would be to take a time series of roll-out and project that forward. It is simply not adequate to freeze rollout for a 4 year forward look."

3.114 BT believes the service share threshold in our geographic market definition should be revised upwards to reflect this.

3.115 As well as not accounting sufficiently for additional market entry during the market review period, BT argued that we had not sufficiently allowed for the size of the reductions in its market share once entry has occurred. BT presented new empirical work by Professor Nankervis which claims to show that when [X] enters an exchange where [X] is already present, the decline in BT's service share increases from [X] per year to [X] per year. BT acknowledges that this is only one possible pattern of entry but argues this pattern will constitute a significant amount of new entry over the next few years.

3.116 As well as the possibility of further reductions in its market share BT also argued that the threshold at which it has SMP in an exchange is higher than 50 per cent. This is

because a PO's common retail pricing across their networks causes 'spillovers' in competitive conditions from more competitive exchanges to less competitive ones. BT maintains that these spillover effects are present regardless of the impact on its market share in any given exchange. BT also refers to the competitive effects of bundling at the retail level and consolidation, arguing that bundling creates intense competition and that the acquisition of Tiscali by Talk Talk has created a stronger competitor in the market.

3.117 BT also argued that we had underestimated the impact of Virgin Media. BT argues that during the 2008 review we changed our definition of when Virgin Media qualifies as being present in an individual exchange and that we should revert to an assessment based on Virgin's presence at the postcode level.⁶⁹ This would better capture Virgin's ability to target consumers and expand its coverage. BT also reasserts its belief that Updata should be regarded as a PO. It points out that all CPs engage in targeting specific customers to some degree and Ofcom defines a single market with respect to all classes of customers.

3.118 SPC Network offered the following additional views in a separate report, provided as part of BT's response:

- HHI measures remain a useful measure of variations and changes in concentration in this sector but argued that benchmarks used primarily for mergers are not appropriate.
- Retail churn rates are relevant given the close link between retail and wholesale markets. They argue that churn at the retail level is indicative of wholesale churn given the size of the main operators and their use of their own networks.
- There are many examples in the economic literature of three competitors being sufficient for effective competition. SPC cites several additional instances.
- The 'spill over' effects from the practice of POs of setting common retail across their networks that will largely reflect conditions in more competitive exchanges will be felt over time and will not necessarily be reflected in current market shares.
- We take an overly mechanistic approach to the impact of mergers and acquisitions.

3.119 In addition to the work cited above, Professor Nankervis also provided some work addressing Professor Verboven's suggested modifications to the empirical analysis provided in response to our first consultation.⁷⁰ The new model estimates the effect of the number of LLUOs on total broadband penetration (levels and growth rates) at the exchange level.⁷¹ The work purports to show that the impact on total broadband penetration of having three LLUOs present in an exchange is the same as having two LLUOs present. Prof Nankervis argues that this further supports the analysis provided in response to the first consultation.

⁶⁹ This was the approach originally adopted in the 2008 review before Virgin was able to supply data based on individual premises.

⁷⁰ Professor Verboven's comments can be found at:

<http://stakeholders.ofcom.org.uk/binaries/consultations/wholesale-broadband-markets/annexes/verboven-report.pdf>

⁷¹ Professor Nankervis' earlier work only looked at penetration at the level of an individual operator and also looked only at changes in growth rates, not levels. The new work excludes Virgin Media because of the absence of data, and only looks at the impact of LLUOs.

- 3.120 BT again highlighted that there are 26 exchanges where it has not yet deployed broadband.

Other responses

- 3.121 Sky expressed concern at our modifications to the geographic market definition and proposed instead that a 40 per cent service share threshold in exchanges where three POs were present or forecast should be adopted. Sky made three main points.
- 3.122 First, Sky argued that it is imprudent to base market definitions on uncommitted rollout plans as these in practice are subject to change and delay. Sky notes that market reviews are now conducted at three year intervals and that a forward looking assessment over this time horizon can only be made on the basis of tangible factors.
- 3.123 Sky further argued that there is a lack of indirect constraints at the boundary of Market 2 and Market 3. It noted that WBA prices in Market 2 areas have remained 'stubbornly high' despite increased entry and that discounts are only available in Market 3 (via BT's Wholesale Broadband Connect service).
- 3.124 Sky also argued that we had made errors in our assessment of trends in service shares. It argued that the fact of a declining trend is not enough in itself to choose a 50 per cent threshold. Sky referred to our arguments that BT's service share has declined more rapidly in those exchanges where it is currently under 50 per cent. It noted that, by definition, there is less scope for measured reductions in BT's share in those exchanges where it is currently above 50 per cent and that this may in part explain the differences. Sky also noted the difference in the reduction in exchanges where BT's service share is less than 50 per cent compared to those exchanges where its share is over 50 per cent is not large (a 28 per cent fall compared to 22).
- 3.125 C&WW also argued that a 40 per cent service share threshold would be more appropriate to separate Market 2 and Market 3. It argued that we had taken an overly optimistic view with regard to rollout, migration and service share thresholds. In particular it argued that migration and entry are uncertain and that our proposals mean immediate deregulation in exchanges where competition is not yet sufficiently developed. C&WW also argued that a 40 per cent service share threshold was the appropriate benchmark for SMP in the context of ex-ante regulation and that 50 per cent is more relevant for ex-post competition law analysis.
- 3.126 The response also noted that our decision would establish a significant precedent for future market reviews and that as a result a full consultation period should have been implemented (we chose a six week consultation period rather than ten weeks).
- 3.127 Virgin Media accepted our proposal but argued that Ofcom should monitor closely those exchanges where BT currently has a high market share that we intend to move to Market 3. Virgin Media argued that we should take action if competition fails to materialise in these exchanges.
- 3.128 David Hall Systems agreed with our new approach and said it felt a more realistic analysis of the degree of competition BT faces in the Market 2 exchanges had now been undertaken.
- 3.129 FCS argued that BT has SMP on a national basis at the wholesale level because resellers have no option other than to purchase from BT. Their response in effect argues that indirect constraints are not effective in any part of the country.

- 3.130 The Commission's response to our second consultation indicated acceptance of our modifications. It recognised that the addition of exchange level service shares "*may contribute to a more precise assessment of competitive conditions*". The Commission did however invite us to look at additional criteria such as barriers to entry and marketing characteristics to further substantiate our aggregation of exchanges. The Commission also repeated the view it put forward in its first response that indirect constraints should be accounted for at the SMP stage of the analysis. However, it noted that even if consideration of indirect constraints were transferred to the SMP stage the overall assessment would not change.
- 3.131 We note that neither O2 nor Talk Talk, both purchasers of large volumes of WBA inputs from BT, chose to respond to our second consultation.

Our view on responses to the second consultation

- 3.132 We begin by stressing again that the area of disagreement among the various positions is related to the exact definition of the boundary between Market 2 and Market 3 and is relatively small when placed in the context of the WBA market as a whole. The following table shows the impact of differing proposed service share thresholds on the size of Market 2 and Market 3. The table shows that the difference between the varying positions accounts for only five per cent of UK DPs (that is, a 13 per cent to eight per cent change in the number of DPs in Market 2 or, alternatively, an increase in DPs in Market 3 from 74.6 per cent to 79.6 per cent). The percentage difference in terms of number of exchanges is larger since the relevant exchanges are smaller than average.

Table 3.1 the impact of service share thresholds on exchange allocation (number of exchanges (% UK DPs))

	BT service share threshold		
	40%	50%	60%
Market 2	781 (13%)	660 (10%)	558 (8%)
Market 3	1,419 (74.6%)	1,540 (77.6%)	1,642 (79.6%)

Our comments on BT's response

- 3.133 As the above table illustrates, BT's position on the geographic market definition is close to our own position in terms of the size of Market 2 and Market 3. We acknowledge many of the points BT makes including the strength of many of BT's competitors and the long run trends in its market share. However, we believe that, to the extent that they are valid, BT's points are already reflected in our proposed market definition.
- 3.134 On some points, however, we do disagree with BT. BT states that we have not allowed for the possibility of additional rollout beyond December 2010. This is not the case and we clearly stated in our second consultation that our choice of a 50 per cent threshold in part helped to reflect the impact of additional entry that is likely over the period covered by the review.⁷² However, we think it is correct to be cautious in

⁷² See paragraph 3.94 of the second consultation.

making such adjustments. There is no certainty about the likelihood or timing of future rollout by POs or about the impact on exchange level service shares. Also, as the data on future rollout is subject to change as POs review their plans, a forward trend analysis would not be able to identify the specific exchanges where rollout would occur. As such it would not be possible to accurately identify those exchanges where uncommitted plans will result in rollout allowing the exchange to be moved into the de-regulated market.

- 3.135 Regarding Professor Nankervis' work on the impact of [X] and [Y] in an exchange, we do not believe this provides a case for raising the 50 per cent service share threshold used in our definition since it is likely that a significant amount of the effect measured in the study was caused by migration and the potential for migration is already fully accounted for in our market definition.⁷³ Because we allocate all of an LLUO's retail customers to the LLUO's wholesale market share in an exchange it has unbundled, even where they are currently supplied by BT wholesale inputs, BT's service share is already adjusted for the likely effect of migration and we do not need to adjust the threshold used in our definition. Furthermore, as already mentioned, our choice of a 50 per cent threshold acknowledges the potential for further reductions in BT's service share in the future. We also think it is particularly dangerous to extrapolate from the past performance of specific POs (as opposed to projecting aggregate trends). This is a dynamic market in which the relative strengths of POs will change over time and while we accept there is a general downward trend in BT's share, we do not feel the performance of specific POs can legitimately be extrapolated into the future, particularly as their commercial and marketing strategies might change.
- 3.136 With regard to the effect of POs' practice of adopting common retail prices across exchanges they have unbundled we maintain the view that this is best captured via an assessment of exchange level service shares. In adopting this position, we have not concluded that this practice has little impact on competition in the market. We fully recognise that POs set common retail prices across exchanges they have unbundled and that, as the majority of unbundled exchanges fall within Market 3 (as defined in 2008), retail prices will therefore largely reflect the conditions they face in the more competitive exchanges. However, if specific pricing practices cause POs to compete more aggressively in Market 2 than they otherwise would, we expect this to be reflected in BT's service share⁷⁴. The extent to which BT's market share is reduced provides an indication of the size of the impact of these pricing practices on

⁷³ Prof Nankervis estimates that the entry of [X] increases the rate of decline of BT's service share from 7 to 16 per cent per annum. Professor Nankervis states that "arguably this is an underestimate as it does not include the impact of migration" (see page 3 of his note of 1 October 2010). It is unclear what is meant by this since the service share measure used in the analysis means past migration is fully incorporated into the 16 per cent estimate. Migration has been an ongoing process and the migration we expect over the next few years is a continuation of an established practice rather than a new phenomenon. Some other reported results appear hard to interpret or counter-intuitive. For example, Professor Nankervis finds that "there is an estimated increase in the *level* of BT's service share of 24 per cent when [X] enters a market where BT and [Y] are already present" (emphasis in original).

⁷⁴ Our expectation that any effect on competition would show up in BT's market shares is based on standard economic theory. It would only be where a firm aimed solely to maintain its market share at all costs that aggressive pricing strategies by competitors would fail to show up in market shares despite increasing competition in the market. In general, a profit maximising firm, on the other hand, would react by yielding some of its market share rather than reducing its margins excessively. The greater the effect of the aggressive pricing the greater the reduction in market share we would expect to observe.

competition in the market. We apply the same reasoning to the impact of bundled offers on the market.

- 3.137 With respect to SPC Network's argument that the effects of common retail pricing across an LLUO's network footprint will show up over time we would note that our choice of a 50 per cent threshold already incorporates headroom for further reductions in BT's share beyond that caused by migration alone. This therefore includes further reductions owing to the impact of POs' pricing practices. We would also note that if the effects of common retail pricing on market share only show up over an extended period of time (as argued by SPC Networks) it suggests the strength of the competitive effects they create is relatively modest.
- 3.138 We stress that our choice of a 50 per cent threshold was not based on an exact prediction regarding either the likely reduction in BT's share over the period covered by this review or the precise level of market share at which SMP is likely to be present in the market. Instead we have sought a threshold which balances both the need to account for likely reductions in BT share and to avoid deregulating exchanges where competition is not sufficiently effective. We think the 50 per cent threshold strikes the right balance.
- 3.139 On Virgin Media's presence we maintain that the use of premises level data to assess its presence in any BT local exchange is the best approach as it reflects the exact presence of the cable network – i.e. it shows who can actually switch to Virgin Media in the event of a price rise by BT or one of the LLUOs. The change adopted in the 2008 review reflected the availability of superior data. While we recognise that Virgin Media has expanded its network to some degree we do not think it would be appropriate to measure Virgin Media's coverage at the post-code level rather than premises level. Any appreciable expansion within a given postcode requires substantial investment for a cable network owing to the necessary civil engineering, and we take the view that this would not be likely to occur in response to a small price rise. We also note that to the extent that Virgin Media had specific, committed plans for network expansion, these were included in our analysis.
- 3.140 We would also note that under our revised geographic market definition the impact of Virgin Media's presence is captured in those exchanges where three POs are present or forecast but where Virgin Media itself is not counted as a PO because it does not cover 65 per cent of DPs. This is because its effect will be reflected in BT's service share. Furthermore, we would repeat the point made in the second consultation that Virgin Media is treated as a full PO even where its coverage is only marginally above 65 per cent in a given exchange. Therefore we do not accept that our methodology understates Virgin Media's presence in general.
- 3.141 We continue to maintain the view that Udata should not be counted as a PO for the purposes of market definition. While we accept that all operators may engage in targeting to some extent, we believe the narrowness of the customer segment addressed by Udata means it can be legitimately regarded as niche. This is not to say it has no effect on competition in the market. However we do not view the constraint provided by Udata across the entire customer base served by a particular exchange as being substantial enough that the simple fact of its presence can be used to identify differences in competitive conditions between local exchanges (and again we note that its presence will still affect BT's service share and hence is captured to a degree in our market definitions).
- 3.142 Regarding the economic literature cited by SPC Network, we accept that three competitors *can* be sufficient for effective competition in a market in some instances

and indeed the proposed definitions in our second consultation reflect this view. However, it would certainly be incorrect to state that the economic literature taken as a whole establishes a presumption that competition is effective where there are three firms. Instead additional indicators of competition are needed to determine whether competition is effective (in this case we believe an additional service share criterion serves as a useful proxy).

- 3.143 Similarly, regarding the various measures of competition presented by SPC Network, we accept that there are variations in competitive conditions in exchanges where three POs are present or forecast and have modified our geographic definition accordingly. However, we maintain that the concentration measures presented do not establish that all exchanges where three POs are present or forecast can be regarded as competitive.⁷⁵
- 3.144 Professor Nankervis has supplied new work adopting some of Professor Verboven's suggestions and we have sought comments from Professor Verboven on this work.⁷⁶ The new work shows the effect of the number of POs present in an exchange on both the levels and growth rates of total broadband penetration between October 2008 and March 2010.⁷⁷ Professor Nankervis finds that there is no significant difference in either penetration levels or growth rates in exchanges with three LLUOs compared to those with two and argues that this supports the original findings provided in response to our first consultation.
- 3.145 It is inherently difficult to draw robust inferences about future behaviour from statistical analysis of the type conducted by Professor Nankervis. However, we have asked Professor Verboven to comment on the new work and his response is published alongside this statement. Professor Verboven accepts that the analysis appears careful, but questions whether the reported results unambiguously support the conclusion that the effect of the presence of a third LLUO is similar to that of a second LLUO.⁷⁸ In particular the growth effects seem different but the extent of this is hard to judge because of the rounding used in the report.⁷⁹ Nevertheless, it appears that the impact of LLUO competition on total broadband penetration is not strong regardless of the number of competitors. In our view this suggests that total broadband penetration is not a useful measure of differences in competitive conditions across exchanges. As such, and given the other limitations of this type of analysis, our view is that it does not provide clear evidence in support of BT's position.

⁷⁵ As part of its discussion on our interpretation of competition indicators BT suggests that we are arguing SMP regulation has helped BT because it has increased its market share as a result (see paragraph 9 of BT's response). However, this is not our position. While regulation may increase the market share of BT at the wholesale level this is not the same as saying it has increased BT's profits, since entry by resellers on regulated terms will increase competition and put downward pressure on retail margins. An unregulated firm aiming to maximise profits in this market would probably be expected to raise prices at both the wholesale level and retail level and accept the resulting loss of market share.

⁷⁶ Professor Nankervis also clarified a minor query concerning some of the data.

⁷⁷ The main changes in the new work are the use of total broadband penetration rather than operator-specific penetration, the use of a log-linear function to estimate growth rates rather than an S-shaped 'diffusion' function and allowance for variation across exchanges in growth rates as well as levels,

⁷⁸ Professor Verboven also notes that the work is limited in that it does not distinguish between the identities of different POs.

⁷⁹ In addition t-statistics show that growth effects are only significantly different from zero for those exchanges with three, four or five LLUOs present.

- 3.146 BT notes that we do not take a view on whether the acquisition by Talk Talk of Tiscali has increased competition in the market.⁸⁰ We do not believe it is necessary to do so, even if this question were considered to be within the scope of this review. We believe that we have addressed BT's concern through our revisions to the criteria used for market definition. Again, we can expect any competitive effects in exchanges where three POs are present or forecast to be captured in Talk Talk's service share and therefore to be reflected in our definition.
- 3.147 We agree with BT that there are 26 exchanges where it has not currently deployed broadband equipment. Given the very small number of exchanges involved, we have included these within Market 1 rather than defining a new, separate market. There are no other POs deployed in these exchanges and so if BT were to deploy during the forward look of this review it is likely these exchanges would then have the same characteristics as Market 1 exchanges. As we discuss in section 4 on SMP and section 5 on remedies, the remedies imposed in Market 1 would only come into effect if BT chose to deploy broadband capability in these exchanges.

Our comments on other responses

- 3.148 With respect to Sky's comment that we had placed too much weight on unplanned entry, we would stress that our 50 per cent threshold allows for future reductions in BT's share (from all sources of competition) and is not based on an explicit forecast of the scale of entry. BT's market share has fallen for a variety of reasons as competition has matured in the market and entry is only one of a number of factors.
- 3.149 We would also note that our geographic market definition is still determined primarily by the number of POs present or forecast to be present in each exchange and we only use firm forecasts of entry when measuring this. In particular, where there are only two POs present or forecast to be present in an exchange we make no adjustment for the possibility of additional entry.
- 3.150 Sky argued that our assessment of market share trends⁸¹ was flawed. We observed that BT's service share had fallen faster in exchange areas where BT's share was less than 50 per cent than in those where BT's share was above 50 per cent. Sky does not elaborate on its argument in detail, but it appears to amount to a claim that this observation is in part an artefact of the way in which Ofcom defined the two groups of exchanges (i.e. on the basis of a service share criterion) and has little evidential value.
- 3.151 While we acknowledge that the rate of change in service share will not be completely independent of the choice of threshold, we think the observed differences in the decline in BT's share are likely to indicate, at least to some degree, differences in competitive conditions between the two sets of exchanges. The analysis illustrates that those exchanges where BT's share has fallen below 50 per cent (after adjusting for migration) are not merely those that started with a lower share at the beginning of the period being measured (i.e. in February 2008) and is, at the least, consistent with the view that these are the areas where competition has been more effective in driving reductions in BT's share over the relevant period.
- 3.152 In any case, our conclusions on the 50 per cent service share threshold were primarily based on aggregate trends and did not rely on the analysis to which Sky

⁸⁰ See paragraph 27 of BT's response to the second consultation.

⁸¹ See paragraph 3.99 and Annex 7 of the second consultation for our assessment of these trends

refers.⁸² We still hold the view that further reductions in BT's market share are likely and that a 50 per cent threshold captures this.

- 3.153 With regard to indirect constraints, much of Sky's discussion is, in fact, referring to a lack of direct constraints. For example, Sky discusses the inability of a wholesale purchaser to enter the market or the inability of a retailer to secure supply from another WBA operator.⁸³ Our view has always been that both direct and indirect constraints will form the basis of competition in the WBA market. Thus even when purchasers of wholesale inputs have few alternatives to BT, demand substitution at the retail level can constrain BT's ability to raise prices or reduce service quality. We discuss below our arguments on indirect constraints in more detail.
- 3.154 C&WW's comments overlapped to a large degree with those of Sky and many of these have been addressed in the preceding discussion on Sky's comments. C&WW raised the additional issue that many of the market developments we anticipate will take time to materialise whereas deregulation happens immediately. We are required to base our conclusions on a "forward look" of likely developments over the market review period. Our approach explicitly recognises firm rollout plans that will have effect during the review. On more speculative developments that could occur during the review period we have accepted they could have an impact and have introduced the service share criteria to recognise this as, in general, we expect the level of competition to increase across the market during the period of this review. We have not de-regulated exchanges based on uncommitted rollout plans even though some of these plans will be implemented. Our view is that this would be premature and could lead to de-regulation before the full extent of future competition can be assessed at the exchange level. In addition, we propose transitional measures in areas which are subject to a change of regulatory status as a result of this review. We think this is the right balance in recognising the potential for competition to develop whilst providing protection through regulation where it does not develop.
- 3.155 On the issue of the level of market share at which we think SMP is a risk we would note that the Commission's guidance on SMP in telecommunication markets refers to standard competition law thresholds and does not state that a lower threshold is more relevant for ex-ante regulation.⁸⁴ Furthermore, we repeat that we have not formed a precise view on the level of market share at which SMP is likely to be present when setting a 50 per cent threshold, but instead have balanced the likelihood of further reductions in BT's share against the risk of inappropriately deregulating exchanges where competition is insufficiently developed.
- 3.156 As set out above, we have not implemented a new methodology for geographic market definition, merely refined our definition based on the existing methodology, and the scale of the resulting changes was limited. We do not see our decision here as establishing a significant precedent for future market reviews. Each review will conduct its own analysis based on the specific circumstances in the market in question. Therefore, we believe a six week consultation period was sufficient given the relatively small nature of the changes to the geographic market definition we proposed when we re-consulted.

⁸² Our primary arguments are contained in paragraph 3.94 of the second consultation, whereas the analysis Sky cites is in paragraph 3.99. Our conclusions in paragraph 3.101 were based on both the aggregated and disaggregated analysis.

⁸³ See paragraphs 13 to 21 of Sky's response to the second consultation.

⁸⁴ See Commission's guidance on SMP (2002/C 165/03) in particular paragraph 75. <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF>

- 3.157 The Commission's response to our second consultation invited us to consider additional indicators of competitive conditions to further substantiate our conclusions on geographic market definition, including behavioural indicators such as pricing and marketing strategies. The Commission also invited further evidence to justify our conclusion that indirect constraints from cable would be effective, and in particular that price increases at the wholesale level would be passed on in full at the retail level. It repeated its view that such constraints are better addressed at the SMP stage rather than the market definition stage.
- 3.158 We provided additional information to the Commission on these issues as part of a response to an information request received subsequent to the publication of the second consultation. The Commission's request asked us to support our findings by providing further information on a number of areas, including:
- Evidence of price differentials across differing areas, including wholesale and retail price discounts.
 - Information on further structural and behavioural evidence to support our findings, including barriers to entry, marketing and sales strategies, service quality and the nature of demand.
 - Further evidence that cable-based services impose indirect constraints. Information on what would occur if indirect constraints from cable were taken into account at the SMP stage rather than the market definition stage.
 - An assessment of obstacles to migration.
- 3.159 With regard to prices, we noted that evidence is difficult to obtain at the wholesale level since prices were either subject to regulation (in Market 1 and Market 2) or consist of bespoke pricing that BT is not obliged to publish (in Market 3). However, we attempted to calculate average retail prices in each of the three markets we identified. Based on a number of assumptions⁸⁵ we estimated that the average retail price in Market 1 was around £5 per month higher than in Market 2 which in turn was about £2.50 higher than in Market 3. This analysis is subject to a number of limitations but nevertheless is consistent with our conclusions on geographic market definition.
- 3.160 Regarding barriers to entry we noted that each LLU operator will make different assumptions when making a business case for LLU deployment, but that the number of POs present in an exchange will act as a good proxy for the level of barriers to entry. Our view is that this is consistent with the ERG Common position on Geographic Aspects of Market Analysis (definition and remedies). Similarly we argued that rollout plans by LLUOs will act as a reasonable proxy for where marketing activities will be focussed.
- 3.161 We argued that the combination of a PO count combined with a service share criterion will act as a very powerful indicator of the competitive conditions in a local exchange in this market. We regard it as very unlikely that where we identify an exchange as competitive based on our criteria other indicators of competitive conditions, including the behavioural indicators mentioned by the Commission, would

⁸⁵ Specifically, we assume customers buy the lowest package available (including bundles) and we use BT Retail's prices for supply based on BT's wholesale inputs. We also made assumptions about the allocation of revenues in bundles. These assumptions tend to understate differences between markets.

indicate the opposite. We also note that indicators such as the size of entry barriers and marketing strategies were very hard to measure with precision but will be reflected in the PO count and market shares.

- 3.162 With respect to indirect constraints, our position is set out in paragraphs 3.32 to 3.35 and 3.52 to 3.56 of this Statement. We set out at paragraph 3.56 above our view (which we also put forward in our second consultation) that the logic of the Hypothetical Monopolist Test supports the assumption of full pass-through of prices and that, as there are no significant barriers to entry at the retail level we would expect to see full pass through of a wholesale price increase.
- 3.163 In our response to the Commission's information request we noted that evidence on pass-through of wholesale price increases is difficult to obtain because prices in regulated areas have changed little and the prevalence⁸⁶ of bundled offers makes an assessment of pass-through very difficult. The retail price of a bundle will reflect costs and demand for all services in the bundle and isolating the pass-through of wholesale costs for one element would be difficult. However we noted that PO practice was to set lower prices within their network footprints and one significant PO had told us that this was driven by cost differences. Furthermore, we noted that retail margins in off-net regions were low. This suggests wholesale price differences are reflected in retail prices and hence any change in wholesale prices would be passed on in full.
- 3.164 We are also of the view that, with sufficient competition at the retail level, a wholesale price increase need not be passed on in its entirety in order for indirect constraints to be effective. While we think the increase would be passed on in full for the reasons outlined in paragraphs 3.52 to 3.56, indirect constraints could still be effective if the downstream purchaser were able to absorb a proportion of the price rise. For example, if only say 90 per cent of the increase were passed on we would still expect much the same effects on the profitability to the WBA operator of the wholesale price increase.
- 3.165 The Commission repeated its view that indirect constraints should preferably be considered at the SMP analysis rather than the market definition stage. We accept that, in most circumstances, it should be possible to reach the same conclusions whether constraints are taken into account at the market definition stage or in the SMP assessment.⁸⁷ The key point is to identify the constraints correctly.
- 3.166 However, we believe that it is correct and consistent with the logic of the analysis in this case to reflect constraints at the market definition stage and to include products providing such constraints in the geographic market definition. Moreover, even if in theory it should be possible to achieve the correct identification of constraints and therefore reach the same conclusion in any case, there are particular difficulties where geographic markets are defined on the basis of homogeneity of competitive conditions, as in the case of WBA. In these circumstances it is necessary to maintain consistency between the criteria used to assess competitive conditions at the market definition stage and the criteria used to assess SMP. To take account of the constraints from cable only in the SMP assessment would have been particularly difficult and would likely have necessitated significant changes to our method or the criteria used to identify areas with homogeneous competitive conditions.

⁸⁶ See pages 55 – 65 of the Communications Market Report

http://stakeholders.ofcom.org.uk/binaries/research/cmr/753567/CMR_2010_FINAL.pdf

⁸⁷ This and other points are discussed in the report Ofcom commissioned from CRA during the 2008 review: http://www.crai.com/ecp/assets/Indirect_constraints_and_captive_sales.pdf

- 3.167 We therefore think that in the specific case of assessing geographic markets within the WBA market, where the effect of indirect constraints may be significant, including cable within the market definition exercise is helpful in more accurately assessing the constraints that may arise.
- 3.168 Regarding the barriers to migration of POs' retail customers from supply based on WBA inputs from BT to supply based on their own networks in exchanges that have been unbundled, we noted two main barriers. Firstly, the operator may offer a different set of products for supply based on its own network and, second, customers may resist migration. However, we said that the products offered on POs' own networks tended to have higher functionality and/or lower prices. Furthermore, we noted that customers ought to experience no disruption as a result of migration and are unlikely to resist the change. As such we did not consider the barriers to be significant.

Our analysis of developments since the second consultation

- 3.169 Just a few days before our statement was due to be published, on 16 November 2010, Talk Talk stated its intention to extend its LLU footprint.⁸⁸ Talk Talk has provided information to us in response to a formal information request in relation to these plans for expansion.
- 3.170 Talk Talk has not currently committed to deployment in any specific exchanges. Rather, it is in the process of assessing the feasibility of deployment in a number of exchanges. In its public statements it presented this deployment as a medium term plan. Further, it indicated that the implementation period for the full rollout could be around three years.⁸⁹
- 3.171 Consistent with our approach to uncommitted plans from other POs, we do not consider that it would be appropriate for us to attempt to select which exchanges Talk Talk may unbundle in the future, or the order they may unbundle them, as part of our geographic market definition exercise. This could lead us to assign exchanges to a market based on an assessment that turns out to be incorrect.
- 3.172 In our view there are two possible approaches for us at this late stage in our market review. First we could delay publication of the statement until Talk Talk is in a position to provide firm plans for which exchanges it plans to unbundle and rough timescales for the completion of this. Alternatively, we could conclude the review if we consider that the conclusions remain appropriate, taking account of Talk Talk's plan.
- 3.173 It is our understanding that it is unlikely that Talk Talk would be able to provide firm information on the exchanges it will unbundle for several months (not before [X]). In waiting until then, we consider it could be appropriate to also then gather updated data from other POs on their rollout plans. The information gathered through this process from Talk Talk and the other POs may suggest that further analysis and consultation is required. As such, it is not clear that a delay in concluding the review could be restricted to updated information from Talk Talk, or to a specific timeframe.

⁸⁸ <http://www.talktalkgroup.com/ttg-events/16-11-10.html>

⁸⁹ On the conference call to present the results, Talk Talk Group CEO Dido Harding suggested the rollout period could be in the region of three years:
<http://www.talktalkgroup.com/ttg-events/16-11-10.html>

- 3.174 In considering whether delaying the conclusion for an indefinite period is the most appropriate approach, we have considered the implications of Talk Talk's announcement.
- 3.175 Given Talk Talk's existing coverage, it may be expected that additional rollout would mainly occur in exchanges where other POs (except BT) are not present. However, there could also be a small number of exchanges that could move from Market 2 to Market 3.
- 3.176 Given the timeframes for assessing the feasibility of deployment and for the deployment itself, it is unlikely in our opinion that Talk Talk will be in position to exert a practical constraint in any new exchanges for a period of six to nine months. As noted above, rollout in some exchanges could occur up to three years from now though we accept that Talk Talk may seek to deploy more quickly than this.
- 3.177 Our approach to market definition is that we should not count a PO as present in an exchange until the PO has confirmed specific rollout plans. As Talk Talk has not yet identified the exchanges it plans to unbundle, our current approach results in exchanges staying in the market to which they have been allocated.
- 3.178 In carrying out a market review we are required to take a forward look at how competitive conditions may change over the period of the review. Whilst accepting that deployment in Market 1 exchanges will have an impact, we are also mindful that, based on the timescales above, a significant portion of the market review period will be characterised by BT being the only provider even in exchanges that Talk Talk chooses to unbundle. As such, our regulatory approach needs to balance the potential for further competition towards the end of the review period with BT's position of being a monopoly provider for the earlier part of the review period. We note that C&WW made a similar point in relation to our approach to the boundary between Market 2 and Market 3, where it argued that we were prematurely deregulating exchanges based on a forecast of where three POs are or will be present and the effect of this on competition.
- 3.179 If the outcome of waiting until February/March for Talk Talk to identify the specific exchanges it plans to unbundle was that we simply moved exchanges into the relevant market (that is, we did not change our approach to market definition, SMP or remedies), the main effect on those exchanges that move from Market 1 to Market 2 would be that they would no longer be included within the charge control we have decided to impose in Market 1. They would still be subject to all the other remedies such as cost orientation and non-discrimination that we impose in Market 2.
- 3.180 Alternatively, we have also considered whether the imposition of a charge control in exchanges where BT is the only PO but where future entry will occur is still appropriate. We think this is a useful exercise in the particular circumstances facing us because we need to assess whether the uncertainty of delaying the conclusion of the review is justified, or whether an immediate conclusion results in a regulatory outcome that remains appropriate even in the face of the updated information available to us.
- 3.181 Our argument in Market 2 for not imposing a charge control rests on the potential for a charge control to inhibit future entry or, alternatively, to limit returns of those POs that have already entered. We note that:
- Sky argued in response to the second consultation that a charge control in Market 2 would not act to inhibit future investment;

- Talk Talk has made a decision to invest in further unbundling in the knowledge that we had proposed to impose a charge control in Market 1; and
- No PO has invested in LLU or cable in the Market 1 exchanges and so the opportunity for that investment to be undermined is not relevant.

3.182 It is clear that at the start of the period covered by the review BT's position in Market 1 exchanges where Talk Talk subsequently deploys would be the same as that for all other exchanges in Market 1. BT would be the only provider and would, as such, face no competitive constraints. Based on the potential for migration of customers from BT wholesale products onto Talk Talk's own network, and considering the effect when a second PO is present in other exchange areas, we are of the view that even if Talk Talk deploys towards the start of the review period BT's market share would be likely to be at least 70 to 80 per cent in the exchanges where Talk Talk deploys at the end of the review period. The information available from Talk Talk indicates that deployment would be over the period of the review and so the effect on BT's share would be less than this in many of the exchanges. Where BT's share is at this level and it faces competition from only one other provider, a charge control may still be considered to be an appropriate remedy.

3.183 It also needs to be remembered that market definition is not an end in itself but rather is a means to setting market boundaries within which SMP and the need for certain remedies can be assessed. In carrying out a geographic market analysis where exchanges are grouped, it is inevitable that a range of exchanges with slightly differing competitive conditions may be grouped together. For example, our assessments have included exchanges where two POs are present or forecast to be present in Market 2, along with exchanges where three POs are present or forecast to be present. It could be argued that the competitive conditions in exchanges where two POs are forecast to be present are sufficiently different to exchanges where three POs are already present and that therefore they should be grouped differently. However, this could lead to very small markets that would be unmanageable at a practical level. But it could be argued that exchanges where two POs are forecast to be present (but only one is currently present) are also similar to exchanges where only one PO is present, so that they should be included within Market 1. We have attempted to address this by only including firm forecasts of PO rollout in our assessment. This effectively reduces the period when only one PO is present and increases the period when two POs are present and BT is subject to the constraint of the second PO. In the case of the exchanges that Talk Talk aims to unbundle, it is not clear these could be treated in this way, since the time when BT is the only PO would be significant when compared to the overall period of the forward look.

Exchanges that could move from Market 2 to Market 3

3.184 We note above that we would need to understand the specific exchanges which Talk Talk plan to unbundle before we would be able to make a case for moving them from one market to another. This is also true in relation to Market 2 exchanges where a move to Market 3 could be based on two reasons:

- Exchanges where there are currently two POs present or forecast but where BT's service share is below 50 per cent; or
- Exchanges where there are three POs present or forecast.

3.185 Clearly, as set out above, carrying out this level of analysis (particularly looking at exchange level service shares) could add to the timescales by which the review

would be delayed and again, could lead to the need for re-consultation and, potentially, re-consideration of remedies. For example, a movement of exchanges where three POs are currently present or forecast from Market 2 and into Market 3, when coupled with the movement of exchanges where currently there is only BT present (with a forecast deployment by Talk Talk during the review) into Market 2 could represent a sufficient shift in competitive conditions in Market 2 that a more stringent approach to price regulation would be warranted. As such, we do not consider that it can necessarily be assumed that exchanges can simply be moved between the markets without a reconsideration of the SMP analysis and remedies.

- 3.186 We have also taken into account the greater potential for further deployment in Market 2 exchanges by including a service share criterion which recognises the potential for deployment in Market 2.

Conclusion

- 3.187 We accept that Talk Talk's announcement indicates that the scope for LLU deployment in Market 1 is greater than we had previously considered.
- 3.188 The aim of geographic market definition is to assess the markets in which market analysis can be undertaken. The grouping is based on assessing the extent of heterogeneity between different exchanges. We have considered the implications of delaying our conclusions until information is available that allows us to analyse the specific list of exchanges that Talk Talk plans to unbundle. This would lead to a period of uncertainty which would be open ended since we could not commit to the conclusions we would draw based on the information provided, or whether we would need to re-consult.
- 3.189 We also consider that for the period covered by this review the exchanges where Talk Talk intends to deploy will be likely to have similar conditions to the markets in which they are currently allocated. This is because of the rollout timescales which mean that Talk Talk are unlikely to have any exchanges unbundled within the next nine months, and rollout will be ongoing throughout the forward look period of this review. Therefore it is our view that exchanges allocated to Market 1 where Talk Talk subsequently deploys can, for the purposes of the market analysis exercise, be considered to have competitive conditions that are sufficiently similar to exchanges in Market 1 where Talk Talk does not deploy. In the next review, when Talk Talk's deployment has been confirmed, the effect of this deployment can be taken into account. A similar argument holds for exchanges in Market 2. In the specific situation of this market review we do not think it is inappropriate that exchanges where BT is expected to have very high market share and will face only a single competitor entering at some point during the market review period should be subject to a charge control. By comparison, exchanges in Market 2 where there are two POs present or forecast to be present are more likely to be subject to the constraint of the second PO for the entire period of the review (since the forecast includes only confirmed plans expected to be implemented by December 2010).
- 3.190 Therefore, we conclude our market definition remains appropriate. As we have set out in section 2, the option exists to commence the next review before the end of the forward look period we have taken in the event that material changes in the market occur.

The Hull Area

- 3.191 Our conclusions on the geographic scope of the Hull Area remained unchanged between the first and second consultations. We defined the Hull Area as a separate market since the competitive conditions differ from the rest of the UK and KCOM is a monopolist at the retail level.
- 3.192 KCOM was the only respondent who commented on the Hull Area and it stated that in general it accepted the conclusions we reached with respect to the Hull Area.

Conclusion on market definition

- 3.193 Based on the above, we consider the relevant WBA product market to be:

Asymmetric broadband access and any backhaul as necessary to allow interconnection with other communications providers which provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes both business and residential customers.

- 3.194 We consider that there are four separate geographic markets, as follows:

- The Hull Area: (0.7 per cent of UK premises);
- Market 1: exchanges where only BT is present (11.7 per cent of premises);
- Market 2: exchanges where two POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is greater than or equal to 50 per cent (10.0 per cent of premises); and
- Market 3: exchanges where four or more POs are present or forecast and exchanges where three POs are present or forecast but where BT's share is less than 50 per cent (77.6 per cent of premises).

Relationship with the Commission's Recommendation on relevant product and services markets

- 3.195 In formulating our approach to market definition, we have taken utmost account of the Commission's approach, which is primarily set out in the Recommendation on Markets and the accompanying explanatory memorandum (the "EM"). In 2003, the Commission issued the Recommendation on Markets identifying product and service markets within the electronic communication sector in which *ex ante* regulation may be warranted. The Commission revised the Recommendation on Markets in 2007.
- 3.196 Wholesale broadband access is defined in the Recommendation on Markets as follows:

"This market comprises non-physical or virtual network access including 'bitstream' access at a fixed location. This market is situated downstream from the physical access covered by market 4 listed above, in that wholesale broadband access can be constructed using this input combined with other elements."

- 3.197 Ofcom's approach to market definition set out in this section is consistent with the approach set out in the Commission's Recommendation on Markets and SMP Guidelines,⁹⁰ taking into account the specific characteristics of the market in the UK. Where appropriate, we have also considered the NGA Recommendation. In this market review, we have considered the existing market conditions, taking into account past performance and data. We have also taken into account expected or foreseeable market developments over the course of the four year forward look period.
- 3.198 On the basis of this assessment, we consider that the relevant product market in the UK as defined above is consistent with the wholesale broadband access market listed in the Commission's Recommendation on the Markets.

⁹⁰ 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). <http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF>

Section 4

Market power assessment

Summary

- 4.1 Market definition is not an end in itself. The definition of the relevant economic market is carried out in order to identify the products and the geographic area over which an assessment can be made of operators' ability to act to an appreciable extent independently of competitors, customers and consumers, i.e., whether there are any operators that hold a position of SMP within a particular market.
- 4.2 In this section we set out our conclusions on the market position of CPs in each of the relevant markets defined in section 3. Our conclusions are that:
- BT holds a position of SMP in the provision of WBA services in Market 1;
 - BT holds a position of SMP in the provision of WBA services in Market 2;
 - No operator holds a position of SMP in Market 3; and
 - KCOM holds a position of SMP in the provision of WBA services in the Hull Area.
- 4.3 In this section we set out the analysis that leads us to these conclusions. Throughout this section we have updated figures to include the two exchanges BT highlighted were missing from our previous analysis (Haydon Wick and Heathrow Terminal 5). Based on our market definition, Haydon Wick falls within Market 3 whilst Heathrow Terminal 5 is in Market 1. Thus, the number of exchanges in Market 1 and Market 3 has changed. However, given the relative sizes of these exchanges and the fact that Haydon Wick serves DPs that were already included within Market 3, the volumes and percentage data presented below has not changed from the second consultation.
- 4.4 We also include a discussion on our view of Talk Talk's intention to unbundle further exchanges, and how this impacts our SMP analysis.

Approach to market power assessment

- 4.5 Section 4 of the first consultation set out the approach that we took in producing our proposals on market power. We have maintained the same approach in reaching our final conclusions. Namely, in assessing whether an undertaking has SMP in the relevant markets defined above, we have taken utmost account of the SMP Guidelines and we have also considered the application of the Of tel Market Review Guidelines⁹¹ and the ERG working paper on SMP.⁹²
- 4.6 The SMP Guidelines and the ERG working paper identify criteria for the assessment of SMP. From these, in the first consultation we identified the following criteria as being particularly relevant to our analysis of the WBA market: market shares; barriers to entry and expansion; economies of scale and scope; and countervailing buyer

⁹¹ *Of tel's market review guidelines* -

www.ofcom.org.uk/static/archive/of tel/publications/about_of tel/2002/smpg0802.htm

⁹² http://www.erg.eu.int/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf

power. We also identified a number of other criteria as somewhat relevant to the assessment of SMP in WBA markets, recognising that there is significant overlap between these and the former criteria.

Assessment of SMP against relevant criteria

- 4.7 In this section we discuss the details of our analysis regarding SMP in each of the four markets we defined. There were no fundamental changes in our analysis between the first and second consultations, though changes to the geographic market definition and updated information on rollout plans have altered the specific figures for some of the indicators used including market shares and average exchange size. In particular, Market 2 as defined in the second consultation has a higher BT market share and a smaller average exchange size. We consider this indicates that in the amended Market 2, BT's SMP is likely to be at least as strong as we considered in the first consultation.
- 4.8 A number of specific issues relevant for an SMP assessment in the WBA market have already been discussed as part of the geographic market definition assessment. These are fully reflected in our SMP analysis and, for clarity, we set them out here:
- We acknowledge that the data we obtained after the first consultation suggests a greater possibility for new entry and expansion than we originally anticipated. This has been reflected in our revised geographic market definition.
 - We accept that POs have a strong incentive to migrate customers currently supplied using BT wholesale inputs to their own networks whenever possible and that it is appropriate to adjust market shares to reflect this.⁹³
 - While we acknowledge the importance of bundled offerings in the retail market and the practice of POs adopting common retailing prices across their network footprint, we think the impact of these will be reflected to a large degree in observed market shares at the retail level.
 - Similarly, while we accept that BT faces a number of large competitors, often with a significant presence in other sectors (including pay TV and mobile), we think the impact of this will be reflected in market shares.

Market power assessment in Market 1

- 4.9 Market 1 comprises those 3,389 exchanges where BT is currently the only operator present. In these exchanges BT currently only faces competition from either small operators that are not categorised as a PO or from Virgin Media where it has less than 65 per cent coverage in an exchange area. Over the period of this review, entry by POs (for example, Talk Talk) may provide greater levels of competition in Market 1 exchanges. We have set out in section 3 how we have considered the potential for future entry in Market 1. Market 1 accounts for 11.7 per cent of UK DPs.

⁹³ Market shares were not adjusted for migration in our first consultation, however, we fully accounted for it in our geographic market definition and SMP assessment and hence our decision to adjust the shares we present in this Statement does not in itself make a difference to our conclusions.

Consultation proposals

- 4.10 In both consultations we proposed that BT has SMP in Market 1 because of its near-monopoly position, the significant barriers to entry in this market and the absence of countervailing buyer power. We repeat here the details of our analysis and decision.

Current and future shares

- 4.11 The following table shows BT's market share in Market 1, based on data for June 2010.

Table 4.1: Market shares in Market 1

	BT	Other operators
WBA volumes (000s)	2,092	26.8
Market shares	98.7%	1.3%

- 4.12 Regarding future shares we took into account firm forecasts for future rollout so that where expansion by Virgin Media or deployment of LLU by one of the other POs is planned to occur in an exchange, these exchanges have been moved to Market 2. As such, in Market 1, BT remains the only PO.
- 4.13 In the consultations we said that BT's market share will only change if there is entry into these exchanges which has not, so far, been forecasted by other POs. However, given the barriers to entry discussed below any such entry is likely to be minimal and, as such, BT's share in Market 1 is unlikely to change materially over the next four years.

Barriers to entry

- 4.14 We said that Market 1 is characterised by very significant barriers to entry and expansion for existing and potential competitors to BT in the market for wholesale broadband access, primarily in the form of sunk costs (that is, costs which could not be recovered on exit) and economies of scale. These are described below.

Sunk costs

- 4.15 Sunk costs are costs which must be incurred in order to enter a market but which cannot be recovered on exit. Where an incumbent has already sunk the costs of entry, later entrants will be deterred from following suit and the incumbent is likely to be able to exploit its SMP by increasing prices without encouraging entry. This is because, whatever the pre-entry price set by incumbent broadband access operators, what matters for the profitability of new entry is the price that would arise from competition between firms post-entry. If the expected post-entry price would be such that entrants' post-entry profits would fail to recover the sunk costs of entry and the entrant foresaw this, then entry would not take place.
- 4.16 There are two broad options available to a company wishing to compete in the provision of wholesale broadband access products. The first is to build a

comprehensive access network, which could address end-users directly. The second is to take advantage of the LLU remedy.

- 4.17 Any company looking to build a competing comprehensive network in this market would incur both the costs of providing individual access and the costs of the support infrastructure. At the time of this review, Ofcom understands that there are no firms considering such investment.
- 4.18 The LLU remedy imposed in the review of the wholesale local access market means that operators seeking to use LLU do not have to incur the costs of provisioning an access network since these operators are able to purchase LLU inputs from BT and provide services in this manner. However, this can still require significant sunk costs, including co-location at BT's exchanges and securing access to backhaul services.
- 4.19 By contrast, BT possesses comprehensive infrastructure in this market. It has a ubiquitous access network and the associated DSLAMs and backhaul required to provide the broadband service. The greater part of this sunk cost is contained in BT's access network to homes and businesses. The provision of DSLAMs and a backhaul network would be a smaller, yet still significant cost.
- 4.20 Accordingly, the high sunk costs of entry and the potential for reduced prices post-entry are deterrents to new operators entering this wholesale broadband access market.
- 4.21 Further rollout by LLU operators beyond December 2010 is uncertain. The barriers to entry are likely to be highest in the smaller, more remote exchanges that categorise Market 1. We said that, as such, rollout into the Market 1 exchanges beyond December 2010 is likely to be limited.

Economies of scale, scope and density

- 4.22 A large proportion of the costs associated with installing ADSL equipment in an exchange in order to offer wholesale or retail broadband access is fixed and so WBA provision is subject to significant economies of scale and density.
- 4.23 Moreover, the exchange areas which make up Market 1 have characteristics which limit the ability of operators to achieve significant scale efficiencies. These exchange areas serve a relatively low number of end-users and therefore the potential sales of wholesale broadband access products are limited. On average, each exchange within Market 1 serves 978 DPs, whereas the national average is c.5,048 DPs and the averages for Market 2 and Market 3 are 4,334 and 14,315 DPs respectively. Thus, if an operator using LLU believes that they can achieve (say) a 10 per cent share of broadband retail sales in an exchange and with the current penetration of broadband services at 63 per cent, then the number of customers it will achieve in the average exchange in Market 1 is 61 ($978 \times 0.63 \times 0.1$). This is in contrast with the numbers of customers it will achieve in the average exchange in Market 3 of 901 ($14,315 \times 0.63 \times 0.1$).
- 4.24 The average exchange size in Market 1 has decreased since the time of the last review, reflecting the fact that the limited entry that has occurred centred on the larger exchanges. As such, the largest exchanges in Market 1 in the last review have moved into Market 2 but these exchanges are, in general, smaller than the average Market 2 exchanges. In the 2008 review we noted that the average exchange in Market 1 served 1,381 DPs whereas the current figure is 978, a fall of roughly 29 per cent. This suggests there is currently an even greater barrier to entry in this market.

- 4.25 As the incumbent, BT is able to benefit from the scale economies available in this market as a result of its monopoly position and it would be very difficult for other operators to achieve similar scale economies. The small size of each exchange limits the potential market for wholesale broadband access products and thus the maximum achievable size for any one operator. An operator would need to achieve a higher market share to gain a certain absolute number of lines than in a larger exchange.
- 4.26 We said that BT's economies of scale present a significant barrier to entry in Market 1. The small size of the exchanges in this market leads to an efficient scale being more difficult to achieve thus cementing BT's first mover advantage, resulting in there being little or no constraint on BT's behaviour in the market.

Countervailing buyer power

- 4.27 We said that we do not believe that countervailing buyer power is present in Market 1. In Market 1 there are no alternative options available other than BT for buyers of the wholesale broadband access product. We have also considered whether any other factors would suggest that a buyer might be able to exercise countervailing buyer power in this market, taking into account that wholesale broadband access is not a two-way access service like, for example, mobile call termination. It does not appear that any buyer, regardless of size, would be in a position to bargain aggressively with BT in the purchase of wholesale broadband access services.

Consultation responses

- 4.28 Most respondents focused their comments on geographic market definition rather than the SMP analysis. They tended to contest the relative size and composition of the three geographic markets rather than the SMP finding in each of the markets. No stakeholder who responded to both consultations modified their views regarding SMP in Market 1 between the consultations.
- 4.29 There was a broad consensus regarding our SMP findings. Talk Talk, Virgin Media, Rutland Telecom, Orange, Sky, The Communications Workers' Union (CWU) and C&WW all agreed with our conclusions on SMP. Vodafone stated that it "broadly concurs with the analysis and rationale as explained in the consultation documents and supports Ofcom's preferred options in both markets".
- 4.30 C&WW noted that the lower quality of the WBA product supplied in Market 1 and Market 2 areas (specifically a lack of 21CN upgrades) could be further evidence of market power.
- 4.31 The Commission commented that we had not presented sufficient evidence regarding the strength of the indirect constraints that cable and LLU-based supply impose on the WBA market. However, the Commission noted that we do adjust our geographic market definition according to whether we think indirect constraints are sufficient. It concluded that, in this case, it does not significantly affect the regulatory outcome whether this is considered at the market definition stage or the SMP stage and that the question of which is the better approach can therefore be left open.
- 4.32 BT's response was largely focused on our geographic market definition however it also made a number of criticisms of our SMP analysis, including:

- We had not allowed for the impact of retail level bundling on the wholesale market. BT believes this increases the market share threshold at which a firm has SMP.
- We underestimated the competitive constraints imposed by mobile, fixed wireless and satellite internet. While recognising that mobile broadband is often a complement, BT argues that some end users will treat it as a substitute.
- Regarding Market 1 BT rejected the argument that it earns a return above its cost of capital. It also believes there is some potential for entry.
- BT also said that it was incorrect to determine that it held SMP in the 26 exchanges allocated to Market 1 where it does not currently provide service (at either the wholesale or retail level)

Our views on responses

- 4.33 Regarding the issues raised by BT, we noted above that we do not agree that the presence of bundles at the retail level affects the interpretation of market shares. In any case, BT's market share is currently close to 100 per cent in Market 1. We also do not agree that competition from mobile, fixed wireless or satellite is relevant for an SMP assessment since these have been excluded from our product market definition because the evidence shows that they are insufficiently close substitutes to constrain an increase in price above the competitive level. Finally, while there may be scope for some entry we do not think this will be sufficient to alter our conclusions on market power in a market with high barriers to entry where BT holds a near-monopoly position.
- 4.34 As we have set out above in section 3, we agree with BT that there are 26 exchanges in which it has not currently deployed broadband equipment. Given the very small number of exchanges involved, we think the most pragmatic approach is to include these within Market 1 rather than defining a new, separate market. There are no other POs deployed in these exchanges and so if BT were to deploy during the forward look of this review it is likely these exchanges would then have the same characteristics as Market 1 exchanges. This is because these exchanges are very small. BT would only be in a position to exercise market power in these exchanges if it were supplying services in these exchanges. As such, as we address in section 5, the remedies we are imposing would only apply in these exchanges if and when BT deploys broadband in them.
- 4.35 Regarding rates of return in Market 1, we note it is very difficult to draw firm conclusions about the returns BT has been earning since the result is sensitive to the way in which costs are allocated across markets. Our conclusions on SMP in Market 1 do not rest on our price and profitability analysis since BT has a near monopoly in this market and there are significant entry barriers.

Our analysis of developments since the second consultation

- 4.36 Our view in the two consultations, as discussed above, was that deployment in Market 1 is likely to be very limited. However, we note that between the first and second consultations the size of Market 1 reduced by 2.5 per cent (from 14.2 per cent to 11.7 per cent) based on updated rollout plans. The further rollout plans announced by Talk Talk a few days before the conclusion of this market review may, over the life of the market review period, lead to entry into exchanges covering a

similar, or slightly larger, portion of Market 1. Therefore, we accept that there exists potential for deployment in Market 1.

- 4.37 However, we also note that the POs other than Talk Talk have a much smaller coverage footprint. As set out in Table 4.4 below, the other POs will have, based on their forecasts to December 2010, coverage of less than half of Market 2 exchanges. As such, it is our view that in the period of this forward look, investment by other POs in exchanges currently assigned to Market 1 is not likely to be significant, because they are likely to focus investment in the Market 2 exchanges in which they are currently not deployed as the greater size of these exchanges is likely to provide more opportunity to gain the scale needed to make investment economic.
- 4.38 Therefore, it remains our view that in the Market 1 exchanges, including those where Talk Talk (or other POs) may deploy over the course of this review, barriers to entry remain high.
- 4.39 Further, in exchanges that Talk Talk unbundles towards the start of the review, it may be expected that BT's share will fall to 70 to 80 per cent during the period of the review. Conversely, the decline in share will be less in exchanges where Talk Talk deploys later and there remain just less than 3,000 exchanges where BT remains the only PO and as such will maintain a market share of around 100 per cent. Therefore, on average, BT's share is likely to be above 80 per cent even by the end of this review in the exchanges allocated to Market 1.
- 4.40 We discuss below that we do not consider that any PO is likely to be able to exert countervailing buyer power to a material extent on BT in Market 2. Whilst the presence in the future of Talk Talk in some exchanges would, in theory, provide an alternate source of supply in these exchanges, we do not consider that the buyer power this would give to purchasers of WBA services in Market 1 could be stronger than the power they currently have in Market 2, which we have concluded is not a material constraint on BT.

Conclusion on SMP in Market 1

- 4.41 Based on the above and taking into account the greater potential for entry suggested by Talk Talk's intention to deploy in a further 700 exchanges, we conclude that BT has SMP in Market 1.

Market power assessment in Market 2

- 4.42 Market 2 comprises those 660 exchanges where either two POs are present or forecast to be present or three POs are present or forecast to be present and BT's service share (adjusted for migration) is above 50 per cent.⁹⁴ Market 2 accounts for 10 per cent of UK DPs.

Consultation proposals

- 4.43 In both consultations we proposed that BT has SMP in Market 2 because of its high market share, the significant barriers to entry and the absence of countervailing buyer power. We repeat here the details of our analysis.

⁹⁴ We have not updated the base data for this calculation since the second consultation and as such our analysis is based on June 2010 data.

Current and future shares

- 4.44 Tables 4.2 and 4.3 outline markets shares in Market 2 based on June 2010 volume data, allowing for the expected migration of POs' retail customers from supply based on BT's WBA inputs to supply based on their own networks following entry (and during the forward looking period). The geographic market boundaries were updated between the first and second consultations using the firm rollout plans provided by the POs.

Table 4.2: Market shares in Market 2

	BT	Other operators
WBA volumes (000s)	1,182	646
Market share	64.7%	35.3%

Table 4.3: Other POs market share in Market 2

	Other POs
WBA volumes (000s) – all other POs combined	644 ⁹⁵
Number of other POs with share over 20%	1
Number of other POs with share over 15% but less than 20%	0
Number of other POs with share over 10% but less than 15%	0
Number of other POs with share less than 10%	4

- 4.45 BT faces some competition in Market 2. Currently, only one PO other than BT has coverage of over 20 per cent of Market 2 exchanges. The firm rollout plans of all POs (except BT) indicate an increase in coverage for this PO to over 80 per cent of premises and that the coverage of another PO will increase to around 50 per cent.
- 4.46 BT, facing fewer competitors in this market compared to Market 3, is able to maintain a much higher market share. Following the planned market entry, and assuming that LLU operators will migrate all off-net customers onto their LLU based network post entry, BT is still expected to retain an average market share of 64.7 per cent across all the exchanges in the market. Whilst there is scope for further investment in Market 2 we expect BT's market share to remain high over the next four years.
- 4.47 As with Market 1, it is possible that, absent the availability of regulated wholesale products, LLU investment would increase, thus reducing BT's (wholesale) market share. However, as discussed below, whilst there is more potential for future entry than in Market 1, we consider that there are still barriers to entry in this market so that future entry during the next four years is unlikely to be sufficient to significantly reduce BT's market power.

⁹⁵ This figure differs from the figure in Table 4.2 above as the latter also includes volumes for those LLU operators not counted as a PO.

- 4.48 Given this, the current market shares provide good reason to believe that BT has SMP in this market and, absent regulation, would be able to raise wholesale prices to the ultimate detriment of end users.

Pricing and profitability

- 4.49 In the first consultation we presented analysis based on BT's pricing and profitability in both Market 1 and Market 2 (as defined in the 2008 review). BT is subject to a voluntary price ceiling in Market 1 and Market 2 until 31 December 2010. We observed that it had kept prices close to its voluntary ceiling in both Market 1 and Market 2 despite the greater competition in Market 2 and lower costs associated with larger average exchange sizes. This is in contrast to BT's pricing practices before separate geographic markets were defined in the 2008 review. In 2005 BT offered discounts in exchanges it defined as being "dense cell" exchanges, and these exchanges tended to be the larger exchanges where costs were lower. We observed that since costs are typically lower in Market 2 than Market 1 exchanges, the uniform pricing across these two markets suggests BT is earning a greater return in these exchanges.
- 4.50 We acknowledged that the pricing and profitability data does not necessarily indicate excessive pricing or profitability. However, we noted it is consistent with the possibility that, absent regulation, BT could price above the competitive level.

Barriers to entry

- 4.51 In the first consultation we said that we thought that barriers to entry in Market 2 were still significant, though less so than in Market 1.⁹⁶ The exchanges which we have moved to Market 3 under our revised approach are those where entry has been more successful than on average in Market 2. This suggests that barriers to entry are likely to be greater (and in any event certainly not less significant) in the revised Market 2 than in the definition proposed in the first consultation.
- 4.52 As discussed above in section 3, in addition to using service shares, our amended geographic market definition also includes operators' latest rollout plans. This has resulted in the average size of exchanges in Market 2 reducing, from 5,445 DPs, as proposed in the first consultation, to 4,334 DPs. We, therefore, believe that the barriers to entry and expansion in this market may be higher than in those considered in Market 2 as defined in the first consultation.

Sunk costs

- 4.53 In the first consultation we noted that BT had already incurred the sunk costs of entry to serve all customers in Market 2.⁹⁷ By contrast, given the limited extent of entry into Market 2, most other POs would have to sink significant additional costs to achieve comparable coverage in Market 2. This remains the case under the revised definition of Market 2.
- 4.54 The following table shows the coverage of Market 2 exchanges by each PO in June 2010 and the forecast coverage based on their firm rollout plans (which we have assumed will be implemented by December 2010), based on information provided by each PO. We have not included the more speculative rollout plans indicated by POs in Table 4.4.

⁹⁶ See paragraphs 4.69 to 4.70 of the first consultation

⁹⁷ See paragraph 4.71 of the first consultation

Table 4.4: PO coverage in Market 2

	Number of POs present broken down by the percentage of exchanges in Market 2							
	>10%	>20%	>30%	>40%	>50%	>60%	>70%	>80%
Jun 10	3	2	2	2	2	1 (BT)	1 (BT)	1 (BT)
Dec 10	4	3	3	3	2	2	2	1 (BT)

- 4.55 Table 4.4 shows that by December 2010 we expect only two POs, other than BT, to be present in more than 40 per cent of the exchanges in Market 2, with only one being present in more than 70 per cent of the exchanges. This suggests that there remain barriers to entry and expansion in this market such that there are likely to be limited constraints on BT's behaviour over the forward look period of this market review.

Economies of scale/scope

- 4.56 The fixed costs associated with unbundling an exchange means that the average cost per end user is subject to significant economies of scale. We said that, based on the amended geographic market definition, the average size of exchanges in Market 2 is 4,334 DPs, whereas the averages for Market 1 and Market 3 are 978 and 14,315 DPs respectively. Thus, Market 2 may present a greater opportunity for LLU operators compared to Market 1. However, planned rollout has already been factored into the geographic market definition and further entry is likely to be inhibited by the still relatively small size of the average local exchange in Market 2, which make it more difficult for entrants to achieve sufficient size to benefit from economies of scale. We believe that this is likely to limit the extent of any further entry or expansion by competitors to BT in Market 2 and that therefore BT will retain SMP in this market during the period covered in this market review.

Countervailing buyer power

- 4.57 We took account of Office of Fair Trading (OFT) guidelines⁹⁸ on buyer power which state that what is important is not just the size of the purchaser but whether they have alternatives to the seller in question.
- 4.58 Other than BT, only one PO has a presence in the majority of Market 2 exchanges. However, this PO does not currently have firm plans to roll out to the whole of Market 2. This PO could in theory provide an alternate source of supply to purchasers of wholesale broadband access products in the exchanges in which it has deployed. However, to date, its wholesale sales have been relatively small and it mainly supplies smaller ISPs rather than other POs. In addition, as it is not present in every exchange in Market 2, there will be some Market 2 exchanges where a CP will need to purchase from at least one other PO (and in practice probably several other POs). At least one PO does not currently supply WBA to third parties and as set out above a number of the POs have limited coverage of Market 2. Alternatively, a CP can get complete coverage of Market 2 from BT. Therefore it seems unlikely that any buyer, regardless of size, would be in a position to bargain aggressively with BT in the

⁹⁸ Office of Fair Trading: Assessment of market power
http://www.offt.gov.uk/shared_offt/business_leaflets/ca98_guidelines/oft415.pdf

purchase of wholesale broadband access services in Market 2, although we recognise they will be in a somewhat better position than in Market 1.

- 4.59 For this reason we do not believe that any current wholesale customer is likely to be able to exert countervailing power to a material extent in Market 2.

Consultation responses

- 4.60 As noted above respondents generally agreed with our SMP findings, including those in Market 2. Talk Talk, Virgin Media, Rutland Telecom, Orange, Sky, CWU and C&WW all agreed with our conclusions on SMP. Vodafone stated that it “broadly concurs with the analysis and rationale as explained in the consultation documents and supports Ofcom’s preferred options in both markets”. David Hall Systems, in response to the second consultation, said it believed a more appropriate SMP assessment had been conducted, given the changes to geographic market definition. FCS argued that BT has SMP in all three markets we identified.
- 4.61 C&WW noted that lower quality in Market 1 and Market 2 areas (specifically a lack of 21CN upgrades) could be evidence of market power.
- 4.62 Many of the points BT raised in its response to our first consultation have already been discussed in relation to Market 1. BT further stated that we are overly pessimistic about the potential for entry in Market 2. It argued that the breakeven threshold (the size of exchange at which deployment of LLU is likely to become profitable) for entry is lower than we have appreciated, that LLUOs gain brand benefits from wider coverage, that we understate the size and strength of competitors and, in the wholesale market, underestimate the degree of countervailing buyer power.
- 4.63 With respect to those exchanges remaining in Market 2, we maintained the view that economies of scale/density provide an appreciable barrier to entry. We recognise that each operator will make investment plans on the basis of different assumptions and required rates of return and that we might see additional entry beyond current plans during the four year forward look covered by this review. We reflect this in our choice of criteria to define Market 2, as we describe above. Given this, our view remains that entry into Market 2 is unlikely to be sufficient to erode BT’s market share to the point where it no longer has SMP during the period covered by this market review.

Conclusion on SMP in Market 2

- 4.64 For the reasons set out above, we conclude that BT has SMP in Market 2.

Market power assessment in Market 3

- 4.65 Market 3 comprises those exchanges where four or more POs are present or forecast to be present, or where three POs are present or are forecast to be present and BT’s service share was less than 50 per cent in June 2010. There are 1,540 exchanges in this market accounting for 77.6 per cent of UK DPs.

Consultation proposals

- 4.66 Our consultations concluded that no operator had SMP in Market 3 since no operator has a significant market share and there are low barriers to entry.

Current and future market shares

4.67 Tables 4.5 and 4.6 outline markets shares in Market 3 based on June 2010 volume data.

Table 4.5: Market share in Market 3

	BT	Other operators
WBA volumes (000s)	4,557	10,141
Market share	31.0%	69.0%

Table 4.6: – Other POs market share in Market 3

	Other POs
WBA volumes (000s) – all other POs combined	10,131 ⁹⁹
Number of other POs with share over 25% but less than 30%	0
Number of other POs with share over 20% but less than 25%	2
Number of other POs with share over 15% but less than 20%	1
Number of other POs with share less than 15%	2

4.68 As can be seen BT's market share is well below the standard 40 per cent threshold used to indicate a risk of SMP. Following the Market 3 proposal set out in our second consultation BT's market share is slightly higher, 31.0 per cent compared with 28.5 per cent as set out in the first consultation. The main reasons for this are:

- the expansion of Market 3 which results from incorporation of the latest rollout plans provided by POs in our forward looking assessment;
- the fact that some exchanges where three POs are present or forecast to be present have been moved from Market 2 to Market 3 as a result of our amended geographic market definition; and
- the removal of Orange as a PO so that its volumes are counted within BT's share.

4.69 Although no PO, other than BT, has 100 per cent coverage of Market 3, three are forecast to have coverage of over 85 per cent based on their firm rollout plans (which we have assumed would be implemented by December 2010), with two having coverage of over 90 per cent. In fact, one of these will have coverage of 99.3 per cent.

4.70 We anticipate that over the period covered by this review the general pattern of market shares will remain broadly as now. That is, several large competing providers

⁹⁹ Note the difference between this figure and that shown for other operators in Table 4.5 is accounted for because the figure in Table 4.5 also includes volumes for those LLU operators not counted as a PO.

will be present in this market with none having a market share significantly higher than the others.

Economies of scale/scope/density

- 4.71 As discussed above, sunk costs and economies of scale, scope and density can be significant barriers to entry and expansion. The fixed costs associated with unbundling an exchange means that the average cost per end user is subject to significant economies of scale. With our updated geographic market definition proposals the average size of exchanges in Market 3 is 14,315 DPs, whereas the averages for Market 1 and Market 2 are 978 and 4,334 DPs respectively. Thus, Market 3 presents a greater opportunity for LLU operators compared to Market 1 and Market 2 as evidenced by their actual investment and their current market shares. The average number of POs in exchanges in Market 3 is five.
- 4.72 The number of entrants suggests that sunk costs and economies of scale are not a significant barrier to entry in this market, whilst the market share data suggests no single operator has a significant scale advantage.

Countervailing buyer power

- 4.73 The pattern of market shares and the limited barriers to entry and expansion indicate that the market can be regarded as competitive hence the concept of countervailing buyer power is not relevant for an SMP assessment.

Consultation responses

- 4.74 Most respondents agreed that no operator has SMP in Market 3. FCS, however, argued that BT has SMP on a national basis because resellers have little choice but to purchase wholesale inputs from it (i.e. indirect constraints are not effective).
- 4.75 As we have discussed above we disagree with this assessment and believe that indirect constraints from cable and LLU operators where they are present or forecast to be present constrain the ability of BT to exercise market power at the wholesale level.

Conclusion on SMP in Market 3

- 4.76 For the reasons outlined above, we do not believe any operator has SMP in Market 3.

Market power assessment in the Hull Area

- 4.77 Our SMP analysis for the Hull Area has remained unchanged since the first consultation. In our first consultation we proposed that KCOM has SMP in the provision of wholesale broadband access in the Hull Area for the reasons set out below.

Market growth and market shares

Current market shares

- 4.78 KCOM is vertically integrated and is the sole supplier of retail fixed broadband access in the Hull Area and can therefore be assumed to have 100 per cent of the market for wholesale fixed broadband access in the Hull Area.

Future shares

- 4.79 KCOM's share of the wholesale broadband access market is not expected to change in the period of this review. There is no planned expansion of cable coverage into the Hull Area and no confirmed plans to deploy ADSL equipment in KCOM's exchanges and to use the LLU remedy, though we note that KCOM has indicated it has had some discussions on this matter.

Barriers to Entry and Expansion

- 4.80 The Hull Area is characterised by very significant barriers to expansion and entry for potential competitors to KCOM in the market for wholesale broadband access, primarily in the form of sunk costs and economies of scale. These are described below.

Sunk costs

- 4.81 The arguments relating to sunk costs in the market in the Hull Area are largely the same as those made for Market 1 above.
- 4.82 In addition, of particular significance in this market are the fixed costs associated with purchasing products from KCOM, including the costs of developing interconnection with KCOM. This relates both to deploying network to the Hull Area to connect to KCOM and the operational support systems required to order, maintain and manage LLU products. We understand that to date no operator has taken LLU from KCOM in this market and that no operator currently has firm plans to do so over the period considered by this review.
- 4.83 Sunk costs are therefore a significant barrier to entry into the WBA market in the Hull Area.

Economies of scale, scope and density

- 4.84 The fixed costs associated with broadband-enabling an exchange are subject to significant economies of scale and density. As the number of lines served from each exchange increases, the average costs per line associated with broadband enabling will fall. There are also fixed costs which operate above the level of the individual exchange, for example the costs of building backhaul networks. These costs are also reduced on a per unit basis if these backhaul links serve a large number of end-users. Therefore it is in the interest of operators to secure as large a number of lines served as possible in each exchange area and to serve as many end-users as possible with backhaul infrastructure.
- 4.85 KCOM has obtained the available scale economies in this market as a result of its legacy monopoly position. However, due to the limited number of end-users in the Hull Area¹⁰⁰, these economies of scale appear to be very difficult for other operators to replicate as an entrant would need to take a large share of the market or suffer a significant cost disadvantage. KCOM's economies of scale therefore look to be a significant barrier to entry in the Hull Area.

¹⁰⁰ There are in the region of 200,000 DPs in the Hull Area.

Countervailing buyer power

- 4.86 We do not believe that countervailing buyer power is relevant for the analysis of SMP in the Hull Area. We have had regard in particular to the OFT guidelines, which states that the strength of buyers and the structure of the buyers' side of the market may constrain the market power of a seller. The OFT Guidance notes that the relevant consideration in assessing the impact of buyer power on the ability of the seller to set a price is whether a buyer would have choice or, in other words, the benefit of an 'outside option'. In the Hull Area there are no alternative options available other than KCOM for buyers of the wholesale broadband access product.

Responses to the consultation

- 4.87 KCOM stated that in general it agreed with the conclusions we had reached regarding the Hull Area. However it expressed the view that future NGA investment by competitors in the Hull Area remains a real possibility and that Ofcom should keep the area under review.
- 4.88 KCOM also stated that it has received expressions of interest from local operators regarding the possibility of purchasing LLU inputs from KCOM and that the possibility of LLU based entry over the period covered by this review cannot be ruled out.
- 4.89 We note KCOM's comments that the possibility of LLU based entry cannot be ruled out. However, at this point in time we consider it is not certain that any such entry will occur in the forward look of this review and so we have not accounted for the impact any such entry could have. Also, as for the rest of the UK, we will keep NGA investment in the Hull Area under review but currently there are no firm plans that would impact our SMP assessment.

Conclusion on SMP in the Hull Area

- 4.90 For the reasons set out above we conclude that KCOM has SMP in the Hull Area.

Conclusion on SMP

- 4.91 Based on the above discussion, our conclusions are that:
- BT holds a position of SMP in the provision of WBA services in Market 1;
 - BT holds a position of SMP in the provision of WBA services in Market 2;
 - No operator holds a position of SMP in Market 3. and
 - KCOM holds a position of SMP in the provision of WBA services in the Hull Area.

Section 5

Remedies

Summary

5.1 In this section we set out our conclusion on the regulatory remedies we have decided to impose to address, respectively, BT's SMP in Market 1, BT's SMP in Market 2 and KCOM's SMP in the Hull Area. The remedies we have decided to impose are summarised in Table 5.1 below.

Table 5.1: Remedies by market

Market	Operator	Remedy
Market 1	BT	Requirement to provide network access on reasonable request Requirement not to unduly discriminate Requirement to publish a reference offer Requirement to notify charges, terms and conditions Transparency as to quality of service Requirement to notify technical information Basis of charges Charge control Cost accounting Requirement to account separately
Market 2	BT	Requirement to provide network access on reasonable request Requirement not to unduly discriminate Requirement to publish a reference offer Requirement to notify charges, terms and conditions Transparency as to quality of service Requirement to notify technical information Basis of charges Cost accounting Requirement to account separately
The Hull Area	KCOM	Requirement to provide network access on reasonable request Requirement not to unduly discriminate Requirement to publish a reference offer Requirement to notify charges, terms and conditions Transparency as to quality of service Requirement to notify technical information Requirement to account separately

5.2 The majority of the remedies listed above were imposed as a result of the 2008 review and are currently in place. The new remedies are:

- In Market 1, the charge control, basis of charges and cost accounting obligations.
- In Market 2, the basis of charges and cost accounting obligations.

- 5.3 We are not imposing any new obligations on KCOM in the Hull Area.
- 5.4 In Market 3 we have concluded that no operator holds a position of SMP and, as such, we do not impose any SMP obligations on any operator. However, for exchanges that move from Market 1 or Market 2 to Market 3, we are imposing a period of notice of 12 months during which BT will continue to be required to provide Network Access on reasonable request to its existing customers in these exchanges.
- 5.5 In addition, there are seven exchanges that move from Market 3 to Market 2. The obligations we have decided to impose in Market 2 will apply in these exchanges from the end of March 2011.

We also include a discussion on our view of Talk Talk's intention to unbundle further exchanges, and how this impacts the remedies we have decided to impose. In particular, we consider the implications for the charge control in Market 1 in paragraphs 5.92 to 5.93 below.

The legal background to SMP remedies

- 5.6 Section 87(1) of the Act provides that, where Ofcom has made a determination that an undertaking is dominant in a particular market, it must set such SMP services conditions as it considers appropriate and as are authorised under the Act. Section 87(1) implements Article 8 of the Access Directive.
- 5.7 Paragraphs 21 and 114 of the SMP Guidelines state that NRAs must impose one or more SMP services conditions on a dominant provider, and that it would be inconsistent with the objectives of the Framework Directive not to impose any SMP services conditions on an undertaking which has SMP.
- 5.8 The Act (Sections 45-50 and 87-92) sets out the obligations that Ofcom can impose if it finds that any undertaking has SMP. Sections 87 to 92 implement Articles 9 to 13 of the Access Directive and Articles 17 to 19 of the Universal Service Directive.
- 5.9 Recital 27 of the Framework Directive provides that *ex-ante* regulation should be imposed only where there is not effective competition and where competition law remedies are not sufficient to address the perceived problem. In order to provide a full analysis, Ofcom has considered whether it could rely on competition law alone, while noting the obligations referred to above.
- 5.10 Section 3 of the Act sets out Ofcom's general duties. Section 3(1) states that Ofcom's principal duty is to further the interests of citizens in relation to communications matters and consumers in relevant markets, where appropriate, by promoting competition. Specifically, Section 3(2)(b) states that Ofcom is required to secure the availability of a wide range of electronic communications services throughout the UK. Section 3(4)(b) explains that, in meeting these requirements, Ofcom must have regard to the desirability of promoting competition in relevant markets. Section 3(4)(e) states that Ofcom must have regard, in performing its duties, to the desirability of encouraging the availability and use of high speed data transfer services throughout the UK. Also, in furthering the interests of consumers, Ofcom must have regard to choice, price, quality of service and value for money. Additionally, Section 4 of the Act sets out the Community duties on Ofcom which flow from Article 8 of the Framework Directive.
- 5.11 In considering whether to impose any SMP services conditions, we have considered all of these requirements. In particular, we have considered the requirement to

promote competition in relation to the provision of electronic communications networks and electronic communications services.

5.12 Also, SMP services conditions must be appropriate (Section 87(1) of the Act) and satisfy the tests set out in Section 47(2) of the Act. These are that each condition must be:

- objectively justifiable in relation to the networks, services or facilities to which it relates;
- not such as to discriminate unduly against particular persons or a particular description of persons;
- proportionate to what the condition is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

5.13 Section 88(1) of the Act further provides that Ofcom must not set an SMP charge control condition except where:

- it appears to us from the market analysis carried out for the purpose of setting that condition that there is a relevant risk of adverse effects arising from price distortion, and
- it also appears to us that the setting of the condition is appropriate for the purposes of (i) promoting efficiency; (ii) promoting sustainable competition, and (iii) conferring the greatest possible benefits on the end-users of public electronic communications services.

Aims of regulating wholesale broadband access

5.14 In Section 4 of this statement, we have concluded that BT has SMP in the provision of wholesale broadband access services in Market 1 and separately in Market 2 and that KCOM has SMP in the provision of wholesale broadband access services in the Hull Area. Article 16 of the Framework Directive provides that

“where an NRA determines that the relevant market is not effectively competitive, it shall identify undertakings with SMP on that market... and... shall on such undertakings impose appropriate specific regulatory obligations... “.

5.15 The Commission considers that in most cases it is preferable to apply regulation at the wholesale level.¹⁰¹ We agree with the Commission's view. Regulation at the wholesale level could be used to address SMP concerns in the relevant wholesale market and hence, in turn, increase competition in the downstream markets that rely on these wholesale inputs.

5.16 The application of regulation at the wholesale level rather than at the retail level also fits with the Community requirement that NRAs take measures which meet the objective of encouraging efficient investment in infrastructure and promoting innovation. The introduction of regulation in wholesale markets is likely to encourage providers to purchase wholesale products and combine them with their own capabilities so as to provide competition to BT and KCOM in downstream markets.

¹⁰¹ For example see the EM.

- 5.17 Regulation at the wholesale level would also help to ensure that the objectives of Sections 4(7) and 4(8) of the Act are met. These are that we take measures which encourage the provision of Network Access and service interoperability for the purpose of securing efficient and sustainable competition and for the purpose of securing the maximum benefit for the persons who are customers of CPs and of persons who make such facilities available. Regulation at the wholesale level would be likely to, as noted above, help to increase the level of competition in the downstream markets and this would in turn help to ensure that the benefits in terms of price, choice and quality would be optimised for retail consumers of broadband internet services.
- 5.18 In assessing the appropriate level of regulation to be applied, we have also taken into account the SMP Guidelines which state at paragraph 15 that regulation should aim to promote an open and competitive market, and at paragraph 16 that *ex-ante* regulations should be imposed to ensure that an SMP provider cannot use its market power to restrict or distort competition on the relevant market or leverage market power on to adjacent markets.
- 5.19 We have also taken full account of Oftel's Access guidelines, which were published on 13 September 2002, on the imposition of access obligations under the new Directives.¹⁰² These describe the circumstances in which we would consider the imposition of wholesale access obligations to be appropriate, give guidance on the nature of the wholesale products we would expect to be supplied as a result of an obligation to provide access, and describe the conditions under which products should be made available.
- 5.20 In addition, we have considered the Revised ERG Common Position on the approach to appropriate remedies in the electronic communication networks and services (ECNS) regulatory framework¹⁰³ ("the ERG Remedies Position") and, in particular, the statement that
- "...there is a presumption that *ex ante* regulation is appropriate on the 18 markets in the Recommendation on Markets if a position of SMP is found."¹⁰⁴
- 5.21 The ERG Remedies Position sets out that in the case of markets where there is a single firm having SMP, remedies should be considered to address the following concerns:
- entry-deterrence;
 - exploitative behaviour; and
 - productive inefficiencies.
- 5.22 The ERG Remedies Position sets out that, in the case of a single firm having SMP in a wholesale market such as that for wholesale broadband access, the following remedies should be considered to address the concerns set out above:

¹⁰² These guidelines can be found at

http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm

¹⁰³ See http://erg.eu.int/doc/meeting/erg_06_33_remedies_common_position_june_06.pdf

¹⁰⁴ See page 9 of the ERG Remedies Position. Note: the number of markets was reduced to 7 in the Recommendation on Markets in 2007

- a requirement to publish a reference offer;
- an obligation to meet reasonable requests for access to, and use of, specific network elements and associated facilities;
- an obligation for access charges to be cost-orientated;
- a requirement to pre-notify changes in tariffs;
- the setting of price controls; and
- an obligation not to discriminate.

5.23 The ERG has also published a *common position on best practice in bitstream access remedies imposed as a consequence of a position of significant market power in the market for wholesale broadband access*¹⁰⁵ (“the ERG Bitstream Position”). The ERG Bitstream Position sets out a methodology for dealing with remedies in the wholesale broadband access market. We have considered each of the suggested remedies in the ERG Remedies Position and the ERG Bitstream Position in this section.

Impact Assessment

5.24 Section 7 of the Act sets out Ofcom’s obligations in relation to carrying out Impact Assessments. In this section we discuss our options for imposing regulatory remedies in markets where we have concluded that an undertaking has SMP. We discuss the impact of each option on stakeholders and how each option relates to Ofcom’s duties. As such, the analysis set out in the remainder of this Section constitutes an Impact Assessment under Section 7 of the Act.

5.25 We are also obliged to assess the potential impact of all our functions, policies, projects and practices on race, disability and gender equality.¹⁰⁶ This review is based on assessing the ability of communications providers to compete at the wholesale level and, as set out in section 3, is based on an analysis of competitive conditions in the coverage areas of BT’s local exchanges. As such we do not believe our conclusions will have any particular effect on one group of consumers over another.

Structure of the rest of this Section

5.26 We first summarise the consultations and discuss the responses to the consultations and our analysis of the responses. We then set out the specific remedies we are imposing in Market 1, Market 2 and the Hull Area.

5.27 As such, we have structured the rest of this section as follows:

- Market 1 and Market 2:
 - Summary of the consultations.
 - Summary and analysis of responses.
- Market 3:

¹⁰⁵ See http://erg.eu.int/doc/publications/erg_06_69rev1_wba_cp.pdf

¹⁰⁶ Our obligations are set out in Annex 6 of the first consultation

- Summary of the consultations.
 - Summary and analysis of responses.
 - Conclusions (including transitional arrangements for exchanges moving to Market 3 or moving from Market 3 to the regulated markets).
- The Hull Area:
 - Summary of the consultations.
 - Summary and analysis of responses.
- The general access, non-discrimination and transparency obligations in Market 1, Market 2 and the Hull Area.
- Pricing remedies in Market 1 and Market 2.

Market 1 and Market 2

Summary of the first consultation

Market 1

- 5.28 In the SMP section (section 4) of the first consultation we said that Market 1 was characterised by a lack of competitors to BT due to very high barriers to entry through high sunk costs and the lack of economies of scale, scope and density for new entrants. This resulted in BT maintaining a high market share, which provided it the ability and incentive to behave to an appreciable extent independently of competitors, customers and ultimately consumers. To address this we considered three general options for remedies:
- Option 1: no remedies;
 - Option 2: general access and non-discrimination remedies; and
 - Option 3: price controls in addition to general access and non-discrimination remedies.
- 5.29 We said that an absence of regulation would be unlikely to result in the development of effective competition in downstream services (in terms of price, rollout, service quality and product differentiation) because in the absence of regulation, BT would have little incentive to provide services to competitors of its own downstream divisions. The consequence of this would be a restriction of competition in Market 1 and in the provision of downstream broadband services. We therefore ruled out option 1.
- 5.30 We said that, in order to promote competition in the provision of downstream broadband services, a suite of regulatory remedies requiring BT to provide Network Access would be required. These remedies would aim to ensure that other providers can obtain wholesale products from BT. The Network Access provided by BT should be that required by third parties to compete in the retail market, including the ability to differentiate their products as far as possible from those of BT's retail divisions. However, it would not be appropriate to require BT to provide any type of Network

Access required by third parties. A requirement to provide Network Access could result in BT being requested to develop multiple products at potentially high costs with very limited customer demand. It would only be appropriate to require BT to meet those requests that are reasonable (for example, have a high expected customer demand, or a low cost of development, or can be charged at a premium to recover costs of development).

- 5.31 If BT is only required to provide Network Access it may discriminate in favour of its own retail divisions. This discrimination may take the form of setting excessive prices for wholesale products or in providing products of inferior quality or functionality. Therefore, we said the obligation to provide Network Access would be more likely to be effective if it is supported by an obligation not to unduly discriminate. We further argued that additional obligations related to ensuring transparency would be required to provide third parties with access to the information they need in order to make informed decisions about purchasing BT's wholesale products.
- 5.32 We proposed that BT should be required to publish a reference offer and that it should publish charges, terms and conditions and technical information related to the product with sufficient notice so that third parties could act on the information in a timely manner. Without this, BT could change products or pricing with insufficient or no notice to its wholesale customers with the intent of discriminating in favour of its retail divisions. We also proposed to impose an obligation to require BT to provide transparency as to quality of service as directed by Ofcom.
- 5.33 This set of general access, non-discrimination and transparency obligations are currently in place in Market 1 following the last market review in 2008 and have been effective in promoting competition in the downstream retail market.
- 5.34 However, it was our view that BT may have the incentive to set prices above the competitive level. BT's competitors at the retail level would be forced to pay these high prices in order to provide service on a national basis. As such we considered four methods of price regulation:
- Retail minus;
 - Cost orientation;
 - Safeguard cap; or
 - Charge control.
- 5.35 We did not consider that a "retail minus" cap on its own would provide sufficient protection from excessive pricing in Market 1 because in Market 1 there is no operator other than BT and we were of the view that significant entry is unlikely during the forward look period of this review. We consider that the position of SMP held by BT is entrenched and the market is not moving towards becoming effectively competitive.
- 5.36 We were also concerned that a safeguard cap may not constrain BT's pricing if the current prices were materially above the competitive level.
- 5.37 If we were to impose just a cost orientation obligation on BT, along with guidance as to the interpretation of this (for example, we could provide guidance that BT's prices

must, as a “first order test”, be between DLRIC¹⁰⁷ and DSAC¹⁰⁸), BT would be required to adjust its prices to comply with the obligation if its current pricing was outside this range. As such, BT’s prices would be somewhat constrained based on the costs incurred in Market 1.

- 5.38 However, we proposed to impose a charge control and a cost orientation obligation. A cost orientation obligation constrains the incumbent from charging its competitors prices for individual services that are either too high, or too low, compared with a level reflective of competitive market conditions. However, it may not by itself provide a sufficient control on average charges across a number of services. Further it is unlikely to encourage the incumbent to reduce its costs over time by becoming more efficient in the provision of such services. Under Ofcom’s preferred method of charge control regulation, RPI+/-X, incentives are created on the dominant provider to increase its efficiency, thereby imitating the effect of a competitive market. If the firm can reduce its costs below the level expected when the cap was set, then the firm retains the increased profits, at least for the period the control is in place.
- 5.39 Imposing a charge control in addition to a cost orientation obligation would allow for this as the charge control could be structured to incentivise efficiency improvements and/or investment by BT in Market 1, which would be of benefit to all purchasers of WBA products (and, ultimately, would result in better products and lower prices for consumers). It would also provide more certainty over the life of the control period about the maximum level of WBA charges.
- 5.40 Therefore, we proposed to impose all of the following conditions on BT in Market 1:
- Requirement to provide Network Access on reasonable request;
 - Requirement not to unduly discriminate;
 - Transparency obligations;
 - Requirement to publish a reference offer;
 - Requirement to notify charges, terms and conditions;
 - Requirement to publish technical information
 - Transparency as to quality of service; and
 - Requirement to account separately.
 - Charge control;
 - Basis of charges (cost orientation); and
 - Cost accounting.

Market 2

- 5.41 We again considered three options:

¹⁰⁷ Distributed Long Run Incremental Cost.

¹⁰⁸ Distributed Stand Alone Costs.

- Option 1: no remedies;
 - Option 2: general access and non-discrimination remedies; and
 - Option 3: price controls in addition to general access and non-discrimination remedies.
- 5.42 In the SMP section (section 4) of the first consultation we said that we considered that BT had SMP in Market 2 but that, unlike Market 1, there had been some entry by competitors to BT. Whilst there was some competition in the market and the potential for further entry (although in the first consultation we considered this to be limited), we said that we did not expect an absence of regulation would promote a significant level of efficient investment by POs, leading to effective competition. It was our view that in the absence of regulation, BT would have little incentive to provide services to competitors of its own downstream divisions. The consequence of this would be a restriction of competition in Market 2 and in the provision of downstream broadband services. We therefore ruled out option 1.
- 5.43 As in Market 1, we said that, in order to promote competition in the provision of downstream broadband services, a suite of regulatory remedies requiring BT to provide Network Access on reasonable request would be required. These remedies would aim to ensure that other providers can obtain wholesale products from BT. Again we said it would only be appropriate to require BT to meet those requests that are reasonable.
- 5.44 In the first consultation we also said that, as for Market 1, we considered that general access and non-discrimination obligations supported by relevant transparency obligations were required in Market 2 because we did not consider that, in the absence of these remedies, the limited existing and potential future market entry was enough to provide sufficient consumer choice.
- 5.45 This set of general access, non-discrimination and transparency obligations are currently in place in Market 2 following the last market review in 2008 and have been effective in promoting competition in the downstream retail market.
- 5.46 We also considered whether price controls were required.
- 5.47 We noted that whilst BT had some flexibility in the level it set wholesale broadband access prices under the obligations imposed in the 2008 review, its ability to price excessively in areas where competition from POs did not develop was constrained by a voluntary price ceiling and that we had effectively imposed a “retail minus” cap on BT’s wholesale broadband access price by imposing general access and non-discrimination remedies. This would act in addition to the ex post competition law requirement for BT not to squeeze out downstream rivals.
- 5.48 We said that it was now our view that the rate of LLU deployment had decreased and, whilst recognising the possibility for further rollout in Market 2, we did not expect this to be substantial. Furthermore, we noted that BT’s voluntary commitment to set wholesale broadband access prices below an agreed ceiling expires on 1 January 2011. In light of this, and the scope for some further investment and competition benefits to emerge over the market review period, we considered a number of options for how we might approach price regulation in Market 2:
- Retail minus;

- Cost orientation;
 - Safeguard cap; and
 - Charge control.
- 5.49 We said that a “retail minus” cap is effectively imposed through a combination of the general access and non-discrimination remedies that we proposed to impose to address SMP in Market 2. Therefore, we considered whether obligations in addition to the “retail minus” cap were required.
- 5.50 We said that whilst it is appropriate to take a light touch approach to price regulation in Market 2 due to the existence of some competition, at this stage some form of price control or safeguard, in addition to “retail minus”, is likely to be proportionate to the scale and nature of any further investment benefits in the market.
- 5.51 Our view was that a strict charge control which aimed to reduce BT’s prices to LRIC plus an appropriate mark-up for common costs could lead to lower prices but could also stifle any further investment in LLU, thus reducing consumer choice. As such our view was that a charge control was not appropriate in Market 2 at this time.
- 5.52 In considering whether a cost orientation or a safeguard cap would supplement the “retail minus” cap we said that the standard approach to cost orientation would be to interpret it as allowing BT to price up to DSAC as a “first order” test. BT would be likely to be required to adjust its prices to comply with the obligation if its current price was outside this range. Further, the cost orientation obligation would apply to each and every charge so that BT would not be able to set charges such as transfers at excessive levels. This would provide BT with more flexibility in setting prices than a cost-based charge control, but could provide a stronger safeguard against excessive prices than “retail minus” cap alone. Whilst there was the possibility for BT to price at or close to the DSAC level, we noted that its pricing could be constrained by:
- The small size of Market 2, which would mean the added complexity of managing separate pricing approaches for different markets may not be worthwhile;
 - BT’s historic practice of national pricing, if continued, would mean that BT’s retail price in Market 2 would be set at the same level as in Market 1 and Market 3 and this could act to constrain the level of wholesale charges in Market 2;¹⁰⁹ and
 - There may be some constraint from the wholesale competition that exists in Market 2.
- 5.53 We said a safeguard cap may be able to address some of the concerns arising from a cost orientation obligation by, for example, providing greater certainty of the maximum price that could be charged. However, we said that it is not clear at what level the safeguard cap should be set. Without carrying out a full analysis of BT’s costs in Market 2, we would not be certain that the safeguard cap level was based on costs in Market 2. Where an arbitrary safeguard cap leads to prices being set in a way that does not reflect costs, there is a risk that efficient investment will be discouraged if the safeguard cap level is too low or that prices can be set at an excessive level if the safeguard cap is too high and other POs do not make significant further investments.

¹⁰⁹ We note in section 3 above that the BT owned subsidiary Plus.net prices on a differential basis by market. BT Retail maintains national pricing

- 5.54 Because our aim in Market 2 is to have a regulatory approach that takes into account the investment by other operators (both current and potential future) while at the same time ensuring BT's pricing is not excessive, we proposed that a cost orientation obligation was the most appropriate approach. While we considered that some form of price cap is necessary to protect against the risk of excessive pricing, there is a risk that a charge control or safeguard cap could be set at a level that deters efficient and sustainable investment.
- 5.55 Therefore, we proposed to impose all the following conditions on BT in Market 2:
- Requirement to provide Network Access on reasonable request;
 - Requirement not to unduly discriminate;
 - Transparency obligations:
 - Requirement to publish a reference offer;
 - Requirement to notify charges, terms and conditions;
 - Requirement to publish technical information;
 - Transparency as to quality of service; and
 - Requirement to account separately.
 - Basis of charges (cost orientation); and
 - Cost accounting.

Impact of the proposed remedies on NGA

- 5.56 In the first consultation we proposed that services of all speeds are in the same product market and that, therefore, services provided over NGA networks must be considered in addition to those provided using LLU when we consider our geographic market definition. Our geographic market definition uses local exchanges as the relevant geographic unit. BT has indicated it plans to build its NGA networks from 800 – 1000 of its current 5500+ local exchanges. This means an end-user premise may be connected to a different local exchange for NGA than it currently is for current generation services. Where a PO invests in infrastructure deployments at the 800 – 1000 local exchanges that BT uses as the handover points for its NGA deployments, it is in the interest of the PO to compete for as many customers connected to the NGA network as possible to maximise the return on its investment. This includes customers that were previously connected to a different exchange via the current generation copper access network. The level of competition for all NGA customers served by any specific exchange will therefore be the same.
- 5.57 Whilst BT has not currently selected the exact exchanges yet, it is likely that the exchanges chosen to host NGA will be in the Market 3 area. These are the larger exchanges and are likely to be located closer to the core of BT's network. As such, using these local exchanges is likely to be more efficient than using smaller, more remote exchanges that are more likely to be in Market 1 or Market 2. Where the NGA handover points are provided in Market 3 exchanges, no remedies will apply in the WBA market, because there will be sufficient POs able to access the upstream WLA remedy.

- 5.58 If, however, BT decides to locate NGA handover points in exchanges within the Market 1 or Market 2 areas, we proposed that the relevant remedies in the market would apply, with the exception of the proposed charge control obligations in Market 1. We proposed to exclude WBA services that use NGA from the charge control because of the immaturity of the technology such that we did not have firm details of the products or the costs that would be incurred. We considered that imposing a charge control before services developed could have a detrimental effect on investment (by BT or other CPs). We proposed that this approach was consistent with our approach in the WLA market. We also said that the current generation broadband products would provide a constraint on pricing of the next generation products.

Summary of the second consultation

- 5.59 In the second consultation we took the view that, whilst the size of Market 1 had changed (in terms of the percentage of UK premises covered), the competitive conditions in the revised Market 1 remained the same. Similarly, whilst Market 2 had reduced in size, we said that competitive conditions in the revised Market 2 remained broadly the same. As such, we said the remedies we had proposed in the first consultation remained appropriate.
- 5.60 We asked respondents for their views on this, taking into account our revised market definition and SMP analysis in the second consultation.

Responses to the consultations in relation to Market 1 and Market 2

- 5.61 We present below the responses to the two consultations that we have received, and our consideration of these responses. Comments on the general access and non-discrimination obligations we proposed in Market 1 and Market 2 were generally similar, so we discuss these together. We then discuss the comments we received in relation to price regulation in Market 1 and Market 2.

Summary and analysis of responses related to the general access and non-discrimination obligations

- 5.62 In general, most respondents agreed with our proposals for general access and non-discrimination obligations in both Market 1 and Market 2, which would result in us maintaining the existing remedies.
- 5.63 Rutland Telecom agreed in general but argued that we should address issues relating to Openreach's deployment of Fibre To The Cabinet (FTTC) and potential conflicts between these deployments and other CPs' use of Sub Loop Unbundling (SLU), such as by improving access to ducts and poles. Rutland also suggested a "more fundamental review of control and operation of the BT infrastructure". This could involve separating Openreach from BT. Rutland further argued that "if regulation cannot lead to equivalence between BT FTTC/NGA and SLU, we would look to Ofcom to look at ways in which CPs and private investors can assess risks and make informed decisions". Rutland suggested preventing BT from investing in NGA where other CPs had deployed SLU for a fixed period of time or requiring BT to declare exchange areas where it will not deploy FTTC.
- 5.64 We note that Rutland's comments relate to the relationship between the SLU remedy provided by BT from its Openreach division and BT's own NGA deployments, particularly FTTC. We have set out our approach to regulation of SLU and BT's own NGA deployments in our WLA statement.

- 5.65 David Hall Systems said more measures were needed but that it was difficult to identify what these would be. It argued that BT should, for example, not only notify changes to prices, terms and conditions but should also provide information on the reasons and implications of such changes. It also argued that it may be appropriate for cost accounting measures to be established or reviewed by an independent third party.
- 5.66 We do not agree that BT should set out reasons and implications for changes to its prices, terms and conditions. It is our view that we have imposed sufficient obligations on BT to ensure that it provides reasonable access to its network for the provision of WBA services and that it does not discriminate in providing such access. As such, our competition concerns in this market are likely to be addressed as long as BT is in compliance with all the obligations imposed on it.
- 5.67 The CWU suggested the obligation to publish information related to transparency as to quality of service should also be applied to Virgin Media. It also suggested the obligation to publish information related to network access provision on reasonable request and to provide transparency as to quality of service should also be applied to Virgin Media in Market 2. However, as we have not found Virgin Media to have SMP in Market 1 or Market 2 it would not be appropriate (and indeed, would not be in accordance with Ofcom's duties or powers) to impose obligations on it.
- 5.68 Whilst agreeing in general with the set of proposed remedies, one respondent stressed the importance of transparency and argued that BT should be required to publish information relating to quality of service measures. The obligation that is currently in place requires BT to publish information as directed by Ofcom and, to date, we have not required BT to publish any such data. We proposed to maintain this approach.
- 5.69 The respondent argued that the lack of complaint should not be taken by Ofcom to mean that there were no concerns. Rather, the lack of transparent information may mean that purchasers of BT's WBA services do not have the information required to raise such complaints. These comments would apply equally in both Market 1 and Market 2. It therefore urged Ofcom to impose obligations to publish quality of service information (such as Key Performance Indicators (KPIs)) or, alternatively, to carry out an assessment to ensure the non-discrimination obligations are being met.
- 5.70 The provision of KPIs by BT should not be required for CPs to make their own assessment of whether the level of service they receive is below that expected based on the product terms and conditions. Where a CP is concerned that they are receiving a lower level of service than they should, we would expect them to raise these directly with BT in the first instance.
- 5.71 We recognise that, in the absence of KPI data, it may be difficult for CPs to assess whether to raise complaints regarding the provision of services on a non-discriminatory basis. However, we are also mindful that any requirement on BT to publish information should be applied proportionately in response to a specific competition concern. The obligation we are imposing allows for the imposition of such reporting requirements on BT, where they are warranted.
- 5.72 In addition, whilst we do not consider that BT's Undertakings obligations replace the need for SMP conditions to be imposed in the WBA market we are aware that BT currently provides its WBA services (specifically IPstream Connect) on an EOI basis in Market 1 and Market 2 and this provision of service is subject to review by the

Equality of Access Office (EAO).¹¹⁰ As such, we would also expect concerns relating to the provision of these services in a non-discriminatory fashion to be raised via this alternate reporting mechanism. Therefore we do not consider that it would be proportionate to require BT to publish KPI information at the current time.

- 5.73 BT agreed with our proposals in relation to the general network access and non-discrimination obligations in general. However, in its response to the first consultation, BT has argued that Conditions EAA3.7 and EAA10.7 are superfluous given that EAA4.2 and EAA11.2 provide that the Dominant Provider must give 28 days' notice of changes to charges, terms and conditions where it provides existing or new Network Access.
- 5.74 In the first consultation we proposed to impose on BT an obligation to publish a reference offer in Market 1 and, separately, in Market 2.¹¹¹ These were, respectively, conditions EAA3 and EAA10.¹¹² In addition we proposed to impose on BT an obligation to notify charges, terms and conditions in Market 1 and, separately, in Market 2.¹¹³ These were, respectively, conditions EAA4 and EAA11. Conditions EAA3.7 and EAA10.7 set out in our first consultation and applying to Market 1 and Market 2 respectively provide: "The Dominant Provider shall give Ofcom at least ten days prior written notice of any amendment to the Reference Offer coming into effect, unless such amendment is directed or determined by Ofcom or is required by a notification or enforcement notification issued by Ofcom under sections 94 or 95 of the Act."
- 5.75 In relation to this point in BT's response, we accept that Conditions EAA4.2 and EAA11.2 are sufficient to cover the scenarios covered by Conditions EAA3.7 and EAA10.7 in all material respects and we agree that the latter are therefore unnecessary. We have therefore removed Conditions EAA3.7 and EAA10.7 from the legal instrument in Annex 1.
- 5.76 BT also highlighted that there are 26 exchanges currently listed within Market 1 where BT does not provide broadband services. BT argues that these exchanges should be excluded from Market 1.
- 5.77 We have discussed in section 3 above our view on the inclusion of these exchanges within Market 1. Our view is that whilst these exchanges are included within the definition of Market 1, the remedies imposed in Market 1 would apply only if BT chose to deploy a broadband capability in these exchange areas. As such, unless and until BT rolls out broadband in these exchanges, the remedies discussed in this section would not apply in these exchanges.
- 5.78 Finally, in response to the second consultation, BT also indicated that there are seven exchanges which move from Market 3 into Market 2 and become re-regulated in our amended geographic market definition. BT proposed that in these cases, SMP obligations should not be imposed immediately. Instead:
- Existing contracts should run their course; and

¹¹⁰ See the Equality of Access Office reporting of BT product KPIs for WBA products: <http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Ourundertakings/KeyPerformanceIndicators/KeyProductPerformanceIndicators/ipstream.htm>

¹¹¹ See paragraphs 5.95 to 5.106 of the first consultation in relation to our proposal in Market 1 and paragraphs 5.239 to 5.247 in relation to our proposal in Market 2.

¹¹² See Annex 5 for SMP conditions.

¹¹³ See paragraphs 5.107 to 5.116 of the first consultation in relation to our proposal in Market 1 and paragraphs 5.248 to 5.256 in relation to our proposal in Market 2.

- A period of notice of two months should be allowed for changes to prices, terms and conditions. This is essentially required to allow BT to comply with all the SMP conditions, for example the requirement to give 28 days' notice for pricing changes.
- 5.79 We agree that a period of notice is reasonable. BT has indicated that many of its external contracts for non-standard pricing in these exchanges will expire at the end of March 2011. As such, we think allowing a period of notice until these contracts expire is a pragmatic approach, giving a notice period until 31 March 2011 (a period of approximately four months). This period will apply for all contracts including internal supply to BT's own retail divisions. After this date, the SMP conditions will come into effect. We also note that this relates to only seven exchanges and so the materiality is minimal.
- 5.80 A number of respondents (in particular, private individuals) argued that more should be done to encourage LLU rollout in Market 1 to address the high prices relative to Market 3.
- 5.81 In the WBA market we take account of the level of LLU deployment in assessing the market that each exchange is in. The LLU remedy imposed in the WLA market review is available at all BT's exchanges and so any operator is able to enter all exchanges that it considers to be economically viable. Market 1 is defined as those areas where no POs have entered (or has firm plans to enter at the time of this review) but defining an exchange to be in Market 1 does not preclude entry by any LLU operator that considers it to be worthwhile to do so.
- 5.82 Our focus in Market 1 is to ensure consumers have a choice of supplier based on wholesale inputs provided by BT and that they are protected from excessive pricing. As such, we proposed the general access, non-discrimination and transparency obligations to allow other providers to compete at the retail level with BT to provide customer choice, and we proposed to impose a charge control to ensure pricing was not excessive. We discuss responses to our proposal for a charge control below.

Summary and analysis of responses in relation to the proposed charge control in Market 1

- 5.83 The majority of respondents agreed with our proposal to impose a charge control in Market 1. One respondent argued that in the interim period between the end of BT's voluntary pricing commitment and the commencement of any charge control in Market 1, an interim cap should be imposed.
- 5.84 BT's voluntary pricing commitment expires on 31 December 2010. As the charge control will not take effect from that date, BT has offered a further commitment not to increase prices of IPstream Connect Max or Max Premium in Market 1 until 1st April 2011, except to reflect changes in the prices of underlying Openreach input products. BT may extend this commitment depending on when the charge control takes effect. In addition to this, the other obligations we have decided to impose will apply from the date of this statement. Given this, we do not consider that it would be proportionate to impose an interim cap prior to the commencement of the charge control.
- 5.85 Rutland agreed with the proposal to impose a charge control but added that prices for SLU and/or prices for FTTC need to be regulated to allow for equivalence between SLU and BT's FTTC deployments. We do not discuss this further here as

we have discussed our approach to regulating SLU and BT's NGA deployments in our WLA statement.

- 5.86 BT disagreed with our proposals for a charge control in Market 1. BT argued two main points. First, Ofcom has not demonstrated that BT is pricing excessively. Second, there is no indication that broadband penetration or other indicators for the provision of broadband access vary significantly in different geographic areas.. BT also disagreed with Ofcom's argument that there has been a change in market conditions since the 2008 review, such that a change in approach to regulation is warranted. BT also argues that a charge control "will tend to discourage continued growth and take-up of broadband services, especially in rural areas".¹¹⁴ BT argues that a proportionate response would be an extension of voluntary pricing commitments. BT's detailed arguments are:
- Ofcom has not demonstrated how it has calculated the cost of capital and as such has not shown how it has calculated whether profitability is excessive in Market 1.
 - In considering returns, Ofcom should take account of the disparity that arises between accounting and economic rates of return. In particular, ROCE for a single year should not be considered a good indicator and Ofcom should consider profitability analysis over a longer period of time than was included in the first consultation.
 - Ofcom should take account of the risk BT took at the time of its investment decisions (the downside risk).
 - "Real options" should be taken into account to reflect the investment decisions BT has made in Market 1.
 - Ofcom needs to take account of the effect of averaging the cost of capital across a number of projects. There is a danger that in taking this approach, BT may make a loss on the more risky projects it undertakes if the cost of capital does not reflect this greater risk.
 - There are specific risks that arise from the imposition of charge controls in Market 1. In particular it may act to dis-incentivise investment in the market.
 - High broadband penetration in rural areas (comparable to urban areas) and the presence of a vibrant retail market mean imposing a charge control is not proportionate. Further, Ofcom has not demonstrated the likely prospect of consumer harm in Market 1.
 - Whilst prices are higher in Market 1, this would only indicate excessive prices if it was not reflective of higher costs. Ofcom has not demonstrated this with a market by market analysis.
 - Ofcom's data shows satisfaction between urban and rural areas is identical and as such does not provide evidence of consumer harm.
- 5.87 We disagree with BT's argument that a charge control is not justified in Market 1. Whilst we recognise the difficulty in assessing precise returns in each market based

¹¹⁴ See page 29 of BT's response to the first consultation:
<http://stakeholders.ofcom.org.uk/consultations/wba/?showResponses=true>

on the data reported by BT, our main reason for the imposition of the charge control is the lack of competition to BT in the wholesale market. Since any provider that is offering service in Market 1 is likely to be doing so based on BT's wholesale inputs, in the absence of pricing regulation it is our view that BT's pricing would be unconstrained. BT would be free to raise its wholesale prices and any such increases would be likely to be passed on to customers. The opportunity for other CPs to deploy competing infrastructure in Market 1 is, as discussed in section 4, unlikely to provide a sufficient constraint on BT's pricing, even though we accept that Talk Talk's intention to unbundle a further 700 exchanges will mean that at some point during this review period there will be a PO other than BT present in some exchanges in Market 1. In particular, we consider BT's argument about the vibrancy of the retail market to be somewhat misleading in relation to Market 1, since competition in this particular market at the retail level is currently based solely on the availability of BT's regulated wholesale inputs.

- 5.88 We also disagree with BT's argument that there has not been a change in market conditions since the last review. In the 2008 review we noted that we had not ruled out the imposition of price controls in the future, once the market had matured.¹¹⁵ In our view, the penetration of broadband services is levelling off, indicating that the products have gained maturity since the 2008 review.¹¹⁶ In the last review we did not impose a charge control because we considered that there was a risk of setting it at an inappropriate level (based on assessments of costs that did not fully reflect the rapid changes in the market). We were concerned that this could lead to a reduced level of investment whilst LLU deployment was still developing. Given the maturing of the market, we do not consider this risk to be significant in Market 1 at this time. Whilst not discounting that market developments may continue in WBA for the period covered by this review we do not consider that setting a charge control is likely to disincentivise investment. We note for example that Talk Talk has announced its intentions to continue to unbundle exchanges even though we had already proposed to impose a charge control (as discussed below)..
- 5.89 We think it is appropriate to set a charge control rather than accepting a voluntary commitment from BT because the approach to setting the charge control will take account of our concern that BT may be able to set prices at an excessive level in Market 1 in the absence of the price regulation. It will allow transparency as to how the obligation has taken account of BT's investment in the market. It will also set out our approach to promoting efficiency. Further, a formal SMP obligation will provide certainty of regulation for the period of the review.
- 5.90 We are mindful of BT's arguments relating to how its returns over time and the risks involved in deploying broadband are considered. However, we think the correct place to address these questions is in our consultation on the WBA Market 1 charge control which we will publish shortly.

¹¹⁵ See paragraph 5.120 of the November 2007 document: *Review of the wholesale broadband access markets 2006/07: Explanatory Statement and Notification* 15 November 2007 <http://stakeholders.ofcom.org.uk/consultations/wbamr/>

¹¹⁶ See figure 5.14 of the Communications Market Report which shows flat fixed broadband penetration from Q1 2009, <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr10/>. Figure 5.33 of the CMR also shows that the change in the percentage of UK premises covered by an unbundled exchange. This is consistent with our view that LLU deployment is slowing and the likelihood of significant further expansion into Market 1 is low.

Our analysis of developments since the second consultation

- 5.91 We consider here the impact of Talk Talk's announcement of its intention to unbundle further exchanges. Whilst entry by Talk Talk in some exchanges in Market 1 during the period of the review will provide some competition to BT, we remain of the view that a charge control is required in Market 1 because the deployment is as yet uncertain on an exchange level basis and the effects of deployment as a competitive constraint may only become apparent towards the end of the review period. Further, even taking account of Talk Talk's deployment, we anticipate that BT will continue to enjoy very high market share in Market 1.
- 5.92 However, we note that these plans could have an impact on the charge control because it will reduce the volume growth experienced by BT. We plan to set out how we will take this into account in our charge control consultation that we will publish shortly.

Summary and analysis in relation to cost orientation in Market 1 and Market 2

- 5.93 The majority of respondents agreed with our proposal to impose cost orientation in Market 1 and in Market 2.
- 5.94 Several respondents noted that BT had recently proposed to levy a charge for its IPstream availability checker. They questioned whether this was priced excessively and on a discriminatory basis. One respondent said clarity was needed as to whether this service would be included in the charge control and cost orientation obligations.
- 5.95 Within Market 1 and Market 2, BT's charges are currently required to be non-discriminatory. We are re-imposing these non-discrimination obligations in this review. Therefore, where CPs are of the view that BT's pricing is discriminatory in Market 1 and Market 2 they may raise these concerns with BT or with Ofcom. In relation to the availability checker, this service is free up to a certain number of uses per month above which charges apply. It is our understanding that BT's intention in charging for the availability checker above a certain threshold of usage is to discourage excessive usage of the service whilst allowing for reasonable use of the service to remain free. BT has taken this step as some CPs' usage of the checker was very high in comparison to their overall purchases of WBA services. This arose because, for example, some CPs had included regular checks of in-service lines within their standard procedures. We further understand that BT has been working with CPs likely to be affected to understand individual CPs' usage of the checker to agree an approach that allows the CP to continue to use the checker free of charge by reducing un-necessary use of the service. Finally, we also understand that whilst BT notified that it would commence charging from November for the availability checker, it has delayed introducing charges.
- 5.96 Based on the above, we would expect that if CPs have concerns that they will be charged for what they consider to be reasonable use of this service, they should raise them, in the first instance, with BT.
- 5.97 We also note that establishing the specific costs and revenues on a per market basis for the availability checker service would be challenging given the nature of the service where usage, to a significant extent, is included in the WBA products in general.
- 5.98 Talk Talk also stated that it considered backhaul pricing for WBC could be discriminatory because it was cheaper than backhaul for IPstream services. Talk Talk

said that “BT appears to suggest that there is a cost difference between the two products although we have been unable to establish exactly what that difference would justifiably be”.

- 5.99 BT’s pricing in Market 1 and Market 2 to date has been subject to non-discrimination obligations and, for IPstream services, BT’s voluntary commitment not to charge above a price ceiling. In Market 3, BT has no SMP and so it is not subject to any obligations. WBC has been deployed in Market 3 but not, to Ofcom’s knowledge, in Market 1 and Market 2. To the extent that BT is only providing WBC in Market 3 it would be free to price the components of the service (including backhaul) on a commercial basis. As such, it is not clear to us that there is a concern, irrespective of whether there exist cost differences in the provision of the two services.
- 5.100 In response to the first consultation Sky agreed with the proposal for cost orientation in Market 2. However, in response to the second consultation, Sky argued that a charge control would be more appropriate since the more competitive exchanges in Market 2 had, under the amended geographic market definition, moved into Market 3. It said that a charge control would not inhibit LLU investment as the primary driver of investment is not BT’s pricing but the economics of deployment (which are driven by other factors). A charge control would, however, offer greater protection to CPs that do not deploy their own LLU networks throughout Market 2. One other respondent argued that whilst it agreed with our proposed approach in Market 2, it said Ofcom should set a point somewhere midway through the review when a comprehensive assessment of BT’s pricing would be undertaken and, if needed, a charge control could be imposed.
- 5.101 Our proposal for cost orientation in the first consultation was based on the existence of some limited competition in Market 2 and the possibility for further competition to develop. The specific criteria for defining the boundary between Market 2 and Market 3 were amended, such that some exchanges where competition may be stronger have been assigned to Market 3. Sky argued that this means there is less constraint on BT’s pricing in the amended Market 2 and, as such, a charge control would be justified. Whilst we recognise that the exchanges moved into Market 3 were more competitive than average in Market 2, our view is that on balance our argument that the limited level of competition and the potential for future investment suggests cost orientation is the appropriate remedy remains valid. Therefore, we do not consider that a charge control in Market 2 would be appropriate at this time. Further, we do not think it would be appropriate to set a date midway through the review period at which to review BT’s pricing and impose a charge control if necessary. In order to impose additional obligations (or to remove existing ones) a full analysis of the market taking into account a number of factors including, but not limited to, pricing is required. Any such assessment would need a comprehensive review of the market and would simply serve to shorten the period between reviews. However, in the event that market conditions are subject to material change during the forward look period of this review, we would consider re-assessing the market at that time.
- 5.102 Orange disagreed with Ofcom’s proposal for cost orientation in Market 2, arguing that BT should be subject to only the non-discrimination obligations and the requirement for charges to be reasonable. Orange’s arguments against a cost orientation obligation were that it would penalise CPs that had invested in LLU and allow non-investors to compete more readily, it would dis-incentivise further investment and it could fail to achieve the objective of restricting excessive pricing.
- 5.103 BT also disagreed, arguing that the points it raised in objection to the proposed charge control in Market 1 also indicate cost orientation is not appropriate in either

Market 1 or Market 2. It argues that without international benchmarking to illustrate that BT's prices are out of line, the obligation is unwarranted.

- 5.104 We have discussed above that we do not agree with BT's arguments in Market 1 in relation to the charge control.
- 5.105 In response to BT's and Orange's comments in relation to Market 2, whilst we recognise that there is some entry by competitors to BT that will impose some constraint on BT's pricing, the materiality of this constraint may vary depending on a number of factors (for example the presence of different POs may impose different levels of constraint as discussed in paragraphs 3.135 in our discussion of geographic market definition above).
- 5.106 As we set out in the first consultation (see paragraphs 5.202 to 5.205), in the absence of price regulation such as cost orientation, BT's prices may be constrained by the "retail minus" cap that naturally flows from the general access and non-discrimination obligations. However, BT has been pricing close to its voluntary ceiling price in Market 2 despite the presence of competition and so it is not clear that a retail minus approach would sufficiently constrain BT's prices once there is no voluntary ceiling in place. In the first consultation we set out several potential constraints on BT's pricing:
- The relatively small size of Market 2 may mean that the benefit of pricing differentially in Market 2 may not be sufficient to offset the additional administrative cost.
 - Historically BT has priced uniformly across Market 1 and Market 2 at the retail level. If this practice continues, the wholesale price in Market 2 may be constrained. This is because competitors across Market 1 and Market 2 would have access to the charge controlled wholesale product in Market 1. In setting their retail prices based on this wholesale product in Market 1, they would provide a constraint on BT's retail price in Market 1 which would be reflected in Market 2 as long as BT prices uniformly across the two markets. This would provide a retail minus constraint as discussed above.
 - A similar argument may also be true of constraints from Market 3 if BT maintains uniform national prices (though we again note that the BT subsidiary Plus.net prices differently in Market 3 and that BT Retail, whilst maintaining a national price, may offer discounts within Market 3).
 - There may be some constraint from wholesale competition in Market 2. BT has argued this constraint is material. It would be counter to this argument to increase prices significantly in Market 2.
- 5.107 Our view was that, taking the above together with the possibility for further investment by LLU operators in Market 2, a flexible approach to price regulation in Market 2 was required and that a cost orientation obligation, when taken together with the general access and non-discrimination obligations provide a proportionate approach by providing a "backstop" regulation to safeguard against excessive pricing if the constraints discussed above proved not to be effective once BT's voluntary pricing commitment expired.
- 5.108 This approach is also consistent with recognising the investment already made and any future investment as it requires BT to price between a floor and a ceiling price as a "first order test" based on its costs. Flexibility is provided to BT to vary its prices in

this range which would allow pricing at a level higher than a traditional charge control approach that would aim to reduce prices to Weighted Average Cost of Capital (WACC) based on Fully Allocated Costs (FAC) over the period of the control.

- 5.109 Since the first consultation we have amended our geographic market definition. As noted above in response to Sky's comments, we note that our amended definition has resulted in some exchanges where competition is stronger (as reflected in BT's lower service share) having been re-assigned to Market 3. On the other hand, we are also of the view that there remains potential for future LLU rollout in Market 2 which may exert some level of constraint on BT's prices. As such, even though the geographic market definition has been amended based on our assessment of the information made available to us following the first consultation, our view is that our reasoning for imposing the cost orientation obligation set out in the first consultation and discussed above remains valid.
- 5.110 Orange also suggested an obligation to price reasonably may be sufficient, but it is not clear how this would be interpreted in the absence of data showing how prices relate to costs.

Practicality, transparency and interpretation of the cost orientation obligations

- 5.111 There were a number of comments related to the practicality of the cost orientation obligation.
- 5.112 BT argued that:
- Costs are unlikely to be stable due to the likely market development during the market review period (including entry by LLU operators that will have implications for volumes on the BT network).
 - Broadband access is not a mature service for which modelling of costs can be undertaken with certainty.
 - The majority of the broadband market (Market 3) is de-regulated and so cost assessments are subject to uncertainty caused by geographic allocations.
- 5.113 Several other respondents that agreed with our approach indicated that transparency of information was important, particularly in the period following the publication of this statement when the cost orientation obligation may be in place prior to the charge control taking effect in Market 1.
- 5.114 We recognise that attributing costs (on a fully attributed and incremental cost basis) and revenues by service between the geographic markets will require further developments in BT's regulatory reporting systems. Our approach to BT's financial reporting is to consult on changes that are required each year prior to BT's preparation of its Regulatory Financial Statements. This allows us to take into account changes resulting from market reviews completed within a given year.¹¹⁷ A consultation on changes to BT's 2010/11 Regulatory Financial Statements, including our detailed proposals on the future reporting of WBA Market 1 and Market 2 to meet the accounting separation and cost accounting obligations will be published shortly.

¹¹⁷ Note for example that in considering BT's obligations in our statement of 4 June 2010 we highlighted the possibility that obligations may need to be reviewed following completion of the WBA market review: Changes to BT's and KCOM's regulatory and financial reporting 2009/10 update, 4 June 2010, <http://stakeholders.ofcom.org.uk/consultations/btregs10/statement/>

- 5.115 Both Orange and BT questioned Ofcom's interpretation of cost orientation. BT argued that the test for compliance should not be fixed or overly-formulaic. In particular BT highlights that Ofcom's DLRIC and DSAC guidance is currently subject to review at the Competition Appeal Tribunal (CAT). Further, both Orange and BT argue that it is unclear whether this is binding or whether it is a guide as to whether further investigation is required.
- 5.116 To date, where we have imposed a requirement for charges to be cost oriented through a basis of charges condition, our view has been that the interpretation of the basis of charges obligation would be that prices must, as a "first order test", be between DLRIC and DSAC. The first order test signifies that DLRIC and DSAC are more than a simple screening device indicating the need for further investigation, but are not in themselves determinative of whether cost orientation has been breached. These floors and ceilings are given significant weight in the final decision but other factors may also be taken into account. However, as BT has stated, this is currently subject to review at the CAT. BT's comments relate to disputes between Cable & Wireless.¹¹⁸ Global Crossing, Verizon, Virgin Media and COLT and BT, regarding BT's charges for partial private circuits.¹¹⁹ We issued a determination and final statement on 14 October 2009, resolving the disputes. On 14 December 2009, BT filed an appeal with the CAT against our determination to resolve these disputes.¹²⁰ The case is before the CAT and the hearing was held between 20 October and 28 October 2010. We anticipate that the CAT will issue its decision at the end of this year or early next year. Once the CAT has issued its decision, we will consider its implications for our interpretation of BT's cost orientation obligations in this market (and other markets where it is in place). In the circumstances, we do not consider it appropriate at this point to provide a more detailed interpretation of BT's cost orientation obligations.
- 5.117 Talk Talk said it was concerned BT had not provided detailed accounting data and suggested BT may have failed to comply with its existing SMP obligations. We do not consider this to be the case as BT has provided reporting as per the accounting separation obligations imposed by the 2008 review. The 2008 review did not impose the cost accounting obligations that would have required BT to report information on measures such as DLRIC and DSAC.
- 5.118 Some respondents suggested we should monitor compliance on a frequent and ongoing basis, and ensure that BT presents its accounting information in a way that allows accurate and timely assessment of compliance. On this point, we consider that the annual financial reporting regime that is in place is reasonable, especially as in the event of any dispute we can request additional information in the form required to assess the relevant issues.
- 5.119 In response to the second consultation, BT said that a pragmatic approach would be to merge Market 1 and Market 2 due to the small size of each market. This would mean, in BT's view, that no price regulation would be needed as the competitive constraints evident in Market 2 would be sufficient.

¹¹⁸ Cable & Wireless subsequently purchased Thus and as such we include Thus within Cable & Wireless, although Thus also raised a dispute

¹¹⁹ Disputes from Cable & Wireless, Global Crossing, Verizon and Virgin Media against BT about the level of charges for partial private circuits http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/open-cases/all-open-cases/cw_992/

¹²⁰ <http://www.catribunal.org.uk/237-5136/1146-3-3-09-British-Telecommunications-Plc-.html>

- 5.120 The geographic market definition exercise aims to assess areas where competitive conditions are sufficiently homogeneous upon which to base our market power assessment. In this review we have concluded that separating exchanges into Market 1 and Market 2 reflects the differing levels of competitive conditions present in the market. Further, as we do not agree with BT's argument that there is sufficient constraint on pricing in Market 2 as yet, it follows that we do not agree that merging the markets and relying on such constraint would remove the need for additional pricing regulation.

Summary and analysis of consultation responses regarding the application of remedies in Market 1 and Market 2 to Next Generation Access services

- 5.121 In response to the first consultation, BT disagreed with Ofcom's proposal that, where BT (via its Openreach division) makes available access to its NGA deployments via the VULA remedy at Market 1 or Market 2 exchanges, the relevant regulatory remedies imposed in that market would apply (with the exception of the charge control in Market 1). BT argues that applying these remedies in the few cases where this happens may discourage BT from investing in these areas. BT suggests instead that Ofcom should exclude these deployments from regulation as fibre services are new and developing and demand is uncertain. In particular BT argues that price regulation (e.g. cost orientation) should not apply because, in addition to the general points about cost orientation discussed above, the pricing of NGA services will be constrained by current generation services.
- 5.122 In response to the second consultation, BT reasserted this argument stressing that:
- The Openreach NGA product would be consumed on an equal basis by other POs as well as BT. Functional separation and supply of the upstream input – VULA – on EOI terms mitigates the need to regulate downstream; and
 - Fibre products are new with uncertain demand.
- 5.123 We do not entirely agree with BT's argument. Specifically, BT argues that because the upstream input is available on an EOI basis, no downstream regulation is required. However, the purpose of the WBA market review is, essentially, to assess where the upstream remedies (notably LLU to date) have not been successful and to impose downstream regulation. BT does not provide evidence that other POs are more able to connect to Market 1 or Market 2 exchanges to access NGA networks than they are in relation to current generation networks. Whilst we accept that the demand is uncertain at this stage, the absence of a regulated downstream product in areas where other POs have not deployed networks would present competition concerns.
- 5.124 As such, we consider that it is appropriate to impose general access, non-discrimination and transparency obligations on BT in Market 1 and Market 2, where BT has SMP. This regulation would apply to BT's NGA deployments if the upstream product (provided on an EOI basis by Openreach) is handed over in a Market 1 or Market 2 exchange.
- 5.125 In considering whether a cost orientation obligation is also appropriate, it is appropriate to consider whether any constraints on pricing will exist and the extent to which NGA deployments in Market 1 and Market 2 will occur during the period of the forward look of the review.

- 5.126 In section 3 we have defined a single market for all broadband speeds because we consider that a chain of substitution exists. As such, it is our view that current broadband products will constrain the prices of NGA products to some extent. As discussed in concluding that there is a single market, the retail price of current generation services will provide some degree of constraint on the retail pricing of NGA services and we would expect this to constrain the wholesale price. Further, even though there may be little or no constraint from the broadband products of POs provided on their own networks in Market 1 and Market 2, the current generation wholesale products that BT provides will be constrained by our regulatory remedies (the charge control in Market 1 and cost orientation in Market 2). These remedies will therefore also act to provide some constraint on the price of the NGA products.
- 5.127 In considering the need for cost orientation to apply to NGA products it is also important to bear in mind that as part of its NGA deployment BT will rationalise the number of exchanges from which it provides broadband services (from 5589 to around 1000), and that its initial focus is likely to be on those areas that can be served from the larger (Market 3) exchanges. Therefore, NGA deployments where the handover point for the VULA remedy is in Market 1 or Market 2 exchanges will be limited during the period covered by this review. As such, it may not be proportionate to impose a cost orientation obligation to cover these exceptional cases. Also, the costs in Market 1 and, separately, in Market 2 are likely to be difficult to ascertain with any degree of accuracy during the earlier stages of rollout due to the very low volumes involved. Requiring prices to reflect this uncertain cost data may lead to prices being set at an inappropriate level.
- 5.128 Because of these points, we have decided that we should not impose the cost orientation obligation on services provided using NGA deployments.
- 5.129 In the absence of a cost orientation obligation, there may be a concern about BT's ability to use pricing flexibility to favour its own downstream divisions. Our approach to considering such concerns would be similar to the approach we set out in relation to VULA pricing in the WLA statement (paragraphs 8.123 to 8.136). We will continue to carefully monitor the market as BT's NGA deployment evolves and will review the appropriateness of pricing regulation within future reviews.
- 5.130 The NGA Recommendation argues that "NRAs should in principle impose cost orientation on mandated wholesale broadband access products..." It also states that NRAs should analyse if such an obligation is required in case functional separation (or other forms of separation) have proved effective in guaranteeing equivalence of access. The obligations that apply to BT in the provision of WBA services in SMP markets have so far proved effective in providing equivalence of access and we would expect them to be similarly effective in relation to NGA services.
- 5.131 The NGA Recommendation also states that NRAs should oblige the SMP operator to make new WBA products available at least six months before it (or its retail subsidiaries) market new retail services based on this input, unless there are other effective safeguards in place to guarantee non-discrimination. We consider that in Market 1 and Market 2 the obligations we have decided to impose are sufficient to protect against non-discrimination and as such we do not consider that further obligations such as those set out in the NAG Recommendation are required.

Market 3

Summary of the first consultation

- 5.132 Article 16(3) of the Framework Directive and Section 84(4) of the Act require Ofcom to revoke SMP conditions where we find that a market is competitive.
- 5.133 However, as set out in Article 16(3) of the Framework Directive, where Ofcom revokes SMP conditions, it should provide an appropriate period of notice to parties affected by such a withdrawal. The ERG Remedies Position (paragraph 5.6.2) provides further guidance.
- 5.134 Therefore, where Ofcom concludes that an undertaking no longer has SMP in a relevant market, it must revoke all SMP services conditions which it had previously applied in that market. In doing so, Ofcom needs to consider the disruptive effects on the market of a removal of regulation and whether maintenance of existing regulation is necessary for a transitional period prior to the formal revocation of those conditions.
- 5.135 In the first consultation we said that in the period since the last review was concluded, LLU rollout has progressed. As such, 114 exchanges had moved from the regulated markets (Market 1 and Market 2) into Market 3, based on the information available to us at the time. The move of exchanges into Market 3, and the resultant revocation of SMP conditions, could potentially affect parties other than BT, as well as BT itself.
- 5.136 We noted that the position is not exactly the same as in the 2008 review. Prior to our definition of separate geographic markets in the 2008 review and the conclusion that Market 3 was competitive, BT had been previously found to have SMP in the whole of the UK except Hull. As such, all services were provided on a regulated basis. However, following the last review, the Market 3 area has been de-regulated. BT has nevertheless continued to supply service on a commercial basis. It may therefore be the case that BT continues to supply service on purely commercial terms in these exchanges that will move into Market 3, in line with the rest of Market 3, and that its WBA wholesale customers will therefore purchase products on commercial terms.
- 5.137 However, we stated our concern that, where BT is no longer required to provide Network Access on reasonable request, it could decide to stop supplying wholesale broadband access products or may offer terms that favour its own retail divisions before other purchasers of its WBA services are able to secure alternate supply.
- 5.138 Given this, we considered that it is appropriate to provide affected parties with a period of notice prior to the removal of certain SMP service conditions in exchanges that move into Market 3. This would ensure that CPs relying on BT would have the opportunity to maintain supply in the short term, thus reducing the potential of the removal of regulation to have a material adverse effect on competition.
- 5.139 Therefore, in the first consultation we proposed to apply, for a period of 12 months, the following SMP conditions to exchanges that move from Market 2 to Market 3:¹²¹
- EA7: Requirement to provide Network Access on reasonable request;
 - EA8: Requirement not to unduly discriminate;

¹²¹ See paragraphs 5.316 to 5.324 of the first consultation

- EA10: Requirement to notify charges, terms and conditions; and
- EA12: Requirement to notify technical information.

5.140 We considered that these conditions were required during the transitional phase to ensure continuity of supply whilst purchasers of BT's WBA products, in exchanges that had been newly de-regulated, made alternative arrangements for their customers.

Summary of the second consultation

5.141 Based on our amended geographic market definition in the second consultation, in conjunction with the updated rollout information, 338 exchanges move from Market 2 into Market 3. These 338 exchanges cover 8.6 per cent of UK premises. This compares to the proposal in our first consultation that 114 exchanges, covering 3.4 per cent of premises, would move from Market 2 to Market 3. In addition, 11 exchanges were proposed to move from Market 1 to Market 3.

5.142 Whilst the effect of our amended market definition in the second consultation was to increase the size of Market 3, as we proposed that this did not change our SMP analysis we did not discuss Market 3 remedies (or the transitional arrangements that apply in exchanges moving into Market 3) in the second consultation.

Summary and analysis of responses to consultation

5.143 A number of respondents agreed with our proposal that the above conditions should apply for a period of 12 months. One respondent agreed but said that if measures were taken to treat exchanges where three POs are present differently to those where two POs are present (as in its response to our market definition), there would be less need for transitional arrangements.

5.144 However, there were also a number of alternative views.

5.145 Talk Talk argued that it is not clear that any such arrangements are required (and questioned whether a period of twelve months is needed even if some transitional period is considered necessary). It also said that evidence following the 2008 review suggested that BT would continue supply.

5.146 BT argued that transitional arrangements were unnecessary and not consistent with the Framework Directive published on 18 December 2009 (though BT noted that an appropriate period of notice is referred to in the Directive). BT also argued that Ofcom imposed only the obligation to provide Network Access on reasonable request in de-regulated areas in the 2008 review and that this was in the context of geographic markets being introduced for the first time. As such, if any transitional arrangements were imposed, they should be no more onerous than those imposed in 2008. It reasserted this view in response to the second consultation.

5.147 One respondent argued that the period should be six months rather than twelve but during this six month period all obligations should remain in place.

5.148 In response to both the first and second consultations, FCS argued for continuing regulation in Market 3 to provide regulated input products for resellers. FCS said that Ofcom's review focused on LLU operators but that resellers fulfil an important role in the market. It noted the potential growing importance of broadband services due to the increasing use of VoIP services, and that resellers played an important role in

providing these services. However, as set out in section 4 of this statement, we have concluded that no operator has SMP in the Market 3 areas. Having found that Market 3 is competitive we do not consider it would be appropriate to impose obligations in this market, other than allowing for a period of notice in exchanges which are moving into Market 3 and currently have regulatory obligations in place (as discussed below).

Conclusion on transitional arrangements for exchanges moving to Market 3

- 5.149 BT argues that transitional arrangements are not consistent with the Framework Directive published on 18 December 2009. However, the new Framework Directive does not amend Article 16(3) which allows for an appropriate period of notice of the revocation of existing obligations. It is our view that the imposition of transitional arrangements is consistent with this allowance for a period of notice in the specific exchanges moving from Market 1 and Market 2 to Market 3, as these are exchanges where we have concluded that BT no longer has SMP but regulatory obligations are currently in place.
- 5.150 In considering transitional arrangements, the approach taken in the 2008 review is a useful reference point. In 2008 we defined separate geographic markets and, for the first time, de-regulated a significant part of the WBA market. In so doing, we imposed on BT a period of notice of 12 months in which the obligation to provide Network Access on reasonable request remained in place. The primary aim of this obligation was to ensure continuity of supply to existing customers whilst new customers would need to negotiate commercial agreements rather than relying on regulated products.
- 5.151 We are not aware of issues arising in the supply of WBA products in the exchanges that were de-regulated in 2008. In this review, it may be argued that there is less risk of BT removing supply in de-regulated exchanges because it has, since 2008, continued to supply wholesale products in the de-regulated Market 3 areas.
- 5.152 Therefore we agree that it would not be reasonable to impose transitional periods of notice that are more restrictive than those previously imposed in the 2008 review.
- 5.153 We have considered not imposing a period of notice, as suggested by some respondents. However, our view is that at least the obligation for BT to provide Network Access on reasonable request should be maintained in the exchanges that move to Market 3, for a period following the conclusion of this market review. This will ensure that existing wholesale broadband access customers can continue to obtain Network Access for a sufficient period to allow those customers to make any necessary alternative arrangements. In the absence of this condition, Ofcom does not consider that the contractual provisions in place would necessarily prevent undesired market consequences resulting from an immediate revocation of the requirement to provide Network Access on reasonable request in respect of exchanges that move to Market 3, as the contracts that apply in these exchanges were implemented when the supply of services was also subject to SMP obligations. As such, contractual notice of termination may not provide sufficient time for a CP to make alternative arrangements.
- 5.154 Ofcom's understanding is that, if BT were to indicate that it would cease to supply a wholesale broadband access product, its customers would require a period of up to 12 months in order to establish an alternative supply arrangement. This period is necessary in order to allow a customer to enter into negotiations with alternative supplies and to agree product details and then to integrate systems and work out migration plans.

- 5.155 Therefore, whilst we accept that BT may choose to continue to supply WBA products in these exchanges, on a commercial basis as it did in 2008 and continues to do, we consider that the imposition of an obligation to provide Network Access on reasonable request for a period of 12 months to exchanges that move to Market 3 is appropriate and proportionate in order to ensure continuity of supply to existing customers.
- 5.156 In the first consultation we discussed the imposition of this condition related to exchanges moving from Market 2 to Market 3 since, at the time, no exchanges moved from Market 1 to Market 3. Due to updated information and our amended market definition 11 exchanges move from Market 1 to Market 3. It is our view that the rationale for imposing a transitional period is the same irrespective of the market that the exchanges are currently in (based on the outcome of the 2008 review), since the purpose of the transitional period is to provide certainty of supply whilst CPs consider the consequences of the updated market definition and the consequent removal of regulation. We therefore consider it is appropriate to impose the same transitional arrangements in relation to exchanges moving from Market 1 to Market 3 as for exchanges moving from Market 2 to Market 3.
- 5.157 For the avoidance of doubt, given the fact that the period of notice referred to in Article 16(3) of the Framework Directive relates only to affected parties, Ofcom considers that the conditions should only be maintained in respect of existing wholesale broadband access customers of BT in these exchanges. BT would not therefore be required to provide new Network Access where requested by a new wholesale customer.
- 5.158 For the reasons above, and in line with Article 16(3) of the Framework Directive, we have concluded that for a period of 12 months from the date of this statement, the following conditions imposed in our 2008 WBA market review will continue to apply to the exchanges moving from Market 1 and Market 2 to Market 3 as a result of this review:
- EA1: Requirement to provide Network Access on reasonable request (in exchanges that move from Market 1 as defined in 2008 to Market 3).
 - EA7: Requirement to provide Network Access on reasonable request (in exchanges that move from Market 2 as defined in 2008 to Market 3).
- 5.159 We are not imposing any other obligations on BT during this 12 month period. In particular we are not imposing conditions EA8, EA10 or EA12 which were considered in the first consultation.

The Hull Area

Summary of the first consultation

- 5.160 As for Market 1 and Market 2, we discussed three general options for remedies:
- Option 1: no remedies;
 - Option 2: general access and non-discrimination remedies; and
 - Option 3: price controls in addition to general access and non-discrimination remedies.

- 5.161 We said that it was our view that KCOM has SMP in the Hull Area and that there is little potential for other CPs to build the networks that would lead to competition in this market. We therefore said that we considered that *ex-ante* regulation is required to ensure that the benefits of competition in terms of price, product differentiation, choice of supplier and quality are optimised for citizens and consumers in the Hull Area and, as such, discounted option 1.
- 5.162 As in Market 1 and Market 2, in the first consultation we said that in order to promote competition in the provision of downstream broadband services, a suite of regulatory remedies requiring KCOM to provide Network Access would be required. These remedies would aim to ensure that other providers can obtain wholesale products from KCOM. The Network Access provided by KCOM should be that required by third parties to compete in the retail market, including the ability to differentiate their products as far as possible from those of KCOM's retail division. However, it would not be appropriate to require KCOM to provide any type of Network Access required by third parties, regardless of the circumstances. A requirement to provide Network Access could result in KCOM being requested to develop multiple products at potentially high costs with very limited customer demand. It would only be appropriate to require KCOM to meet those requests that are reasonable (for example, have a high expected customer demand, or a low cost of development, or can be charged at a premium to recover costs of development).
- 5.163 If KCOM is only required to provide Network Access it may discriminate in favour of its own retail division. This discrimination could take the form of setting excessive prices for wholesale products supplied to external customers or in providing products of inferior quality or functionality. Therefore, we said the obligation to provide Network Access would be more likely to be effective if it is supported by an obligation not to unduly discriminate. We further argued that additional obligations related to ensuring transparency would be required to provide third parties with access to the information they need in order to make informed decisions about purchasing KCOM's wholesale products.
- 5.164 We proposed that KCOM should be required to publish a reference offer, charges, terms and conditions and technical information related to the product with sufficient notice so that third parties could act on the information in a timely manner. Without this, KCOM could change products or pricing with insufficient or no notice to its wholesale customers with the intent of discriminating in favour of its retail divisions. We also proposed to impose an obligation to require KCOM to provide transparency as to quality of service as directed by Ofcom.
- 5.165 In addition to the general remedies set out above, we also considered the appropriateness of imposing price controls on KCOM. We said that in Hull, the cost of establishing processes and systems that interface with KCOM were barriers to entry and that based on our discussions with other CPs the lack of a charge control was not a key consideration in CPs' investment decisions in relation to the Hull Area. Our view was that cost orientation and/or charge control remedies would not be effective in promoting entry by other CPs at the retail level as there does not appear to be demand from CPs to enter the Hull market using a wholesale broadband product from KCOM.
- 5.166 We further argued that we thought that the best approach is to impose general access remedies so that CPs can request a product on non-discriminatory terms in order to enter the broadband market – if they choose. If we imposed additional regulatory burdens on KCOM, the costs of these would need to be recovered from its own retail customers if no wholesale demand emerged. Even if we only imposed a

cost orientation obligation, KCOM would still face the additional burden of more detailed reporting and it is unlikely this data would be particularly useful because as long as KCOM is the only purchaser of its wholesale products, its pricing and cost allocations to specific products and organisational units are relatively artificial.

5.167 We then said that we had considered the Community requirements set out in section 4 of the Act and that it was our view that requiring KCOM to comply with a cost orientation or charge control obligation for WBA would not meet the criteria set out in Section 88 of the Act because CPs had indicated to us that, in the four year forward look period of this review, they were unlikely to enter the market in the Hull Area due to the high fixed costs a third party would incur establishing the networks and systems to interconnect to KCOM in order to purchase SMP services (irrespective of the price of these services) together with the low returns likely in Hull due to the relatively small market size. These factors appear to act as the deterrent to market entry.

5.168 We also discussed the retail products available in Hull. Our reason for this was that whilst this market review is considering the wholesale markets, we considered whether we should review the retail market in Hull, as additional wholesale regulation is unlikely to be effective if other CPs are not going to enter the market based on this wholesale regulation.

5.169 We said that whilst direct comparisons of retail offers need to be understood in the context of the different packages on offer (such as the prevalence of bundled offers in the rest of the UK), we had found that:

- KCOM consumers are now offered more (in terms of broadband speed) for slightly less, compared to our 2008 findings: prices have dropped very slightly, whilst speeds have increased to 'up to' 24Mb/s compared to 'up to' 8Mb/s in 2008.
- KCOM packages are 16 per cent (by cheapest package) and 23 per cent (by next cheapest) cheaper than comparable BT packages.¹²²
- When compared to packages available in the rest of the UK (based on LLUOs' own network and on BT provided wholesale inputs where LLUOs have not deployed their networks) the pricing of KCOM's cheapest and second cheapest package is around the middle of the range.
- Comparison between 'up to' 24Mb/s only packages shows that KCOM is also in the middle of the pack (second of three offers; again there is a trade off between price and download limit).

5.170 We said that this tended to indicate that consumers in Hull are receiving offers in terms of pricing and functionality generally in line with the rest of the UK.¹²³ We are therefore not proposing to look more formally at the retail broadband market in Hull at this time.

¹²² KCOM offers a higher maximum download speed ('up to' 24Mb/s to BT's 'up to' 20Mb/s though we recognise the underlying technology is the same and that actual consumer experience is likely to be lower than this) but has a lower download limit (KCOM 2GB & 10GB, BT 10GB & 20GB).

¹²³ The comparison looks in particular at retail offers from other providers that are only available in certain areas within the rest of the UK, where LLU has taken place. Sky's Connect option, for its non-LLU areas, is included for reference to areas where LLU may not be available.

5.171 We also note that since the first consultation was published, we have published a statement on allowing KCOM to bundle its retail products in the Hull Area.¹²⁴ Our expectation is that KCOM will offer bundles at lower prices than if the services were purchased separately, as is the case for bundles in the rest of the UK.

5.172 Therefore, we proposed to impose the following conditions on KCOM in the Hull Area:

- Requirement to provide Network Access on reasonable request;
- Requirement not to unduly discriminate;
- Transparency obligations;
 - Requirement to publish a reference offer;
 - Requirement to notify charges, terms and conditions;
 - Requirement to publish technical information;
 - Transparency as to quality of service; and
 - Requirement to account separately.

Summary of the second consultation

5.173 As we did not reconsider our market definition or SMP analysis in the Hull Area in the second consultation, our proposed approach to remedies in the Hull Area was not considered in the second consultation.

Summary and analysis of responses to the consultations in relation to the Hull Area

5.174 In the first consultation we proposed to impose on KCOM an obligation to publish a reference offer and an obligation to notify charges, terms and conditions.¹²⁵ These were, respectively, conditions EBB3 and EBB4. Condition EBB3.7 provides:¹²⁶ “The Dominant Provider shall give Ofcom at least ten days prior written notice of any amendment to the Reference Offer coming into effect, unless such amendment is directed or determined by Ofcom or is required by a notification or enforcement notification issued by Ofcom under sections 94 or 95 of the Act.” KCOM argued that this obligation is unnecessary, given the obligation in EBB4 requiring 28 days’ notice to be provided for changes to charges, terms and conditions.

5.175 As above (where BT raised a similar point in relation to similar obligations in Market 1 and Market 2), we accept that Condition EBB4.2 is sufficient to cover the scenarios covered by Condition EBB3.7 in all material respects and we agree that the latter is therefore unnecessary. We have therefore removed Conditions EBB3.7 from the legal instrument in Annex 1.

¹²⁴ *Retail bundling in Hull*, 8 October 2010, <http://stakeholders.ofcom.org.uk/consultations/retail-bundling-in-hull/statement>

¹²⁵ See paragraphs 5.358 to 5.359 of the first consultation in relation to the requirement to publish a reference offer and paragraphs 5.367 to 5.375 in relation to the requirement to notify charges, terms and conditions.

¹²⁶ Note that in error condition EBB3.7 was labelled EAA3.7 in the first consultation.

- 5.176 KCOM also highlighted a change in the condition requiring it to publish quality of service information. In the previous review the condition required KCOM to publish quality of service information as required by Ofcom where it is providing Network Access to third parties. However, in the Draft Legal Instrument in Annex 5 of the first consultation, the reference to the condition applying only in cases where Network Access is provided to third parties has been removed. KCOM sought clarification for this change.
- 5.177 We proposed this amendment to the condition to provide for the case where an access seeker, in requesting Network Access from KCOM in the Hull Area, may need access to quality of service data of the services KCOM provides to its own retail divisions to assess if the products it is being offered would allow it to compete on a non-discriminatory basis. This may be required before the access seeker is actively provided with services by KCOM. It is, however, not Ofcom's current intention, in making this amendment, to require KCOM to publish such data if there is not demand from other CPs and we would stress that even though BT does provide access to other CPs we have not required it to publish such data.

Conclusion of our analysis of response to the consultations

- 5.178 Based on the proposals in our first and second consultation, responses to those consultations and our discussion of these responses as set out above, we have decided to impose the following general access, non-discrimination and transparency obligations on BT in Market 1 and, separately, on BT in Market 2 and on KCOM in the Hull Area:

- Requirement to provide Network Access on reasonable request;
- Requirement not to unduly discriminate;
- Requirement to publish a reference offer;
- Requirement to notify charges, terms and conditions;
- Requirement to publish technical information;
- Transparency as to quality of service; and
- Requirement to account separately.

- 5.179 In addition, in Market 1 we have decided to impose the following obligations on BT:

- Charge control;
- Basis of charges (cost orientation); and
- Cost accounting.

- 5.180 In Market 2 we have decided to impose the following obligations on BT:

- Basis of charges (cost orientation); and
- Cost accounting.

- 5.181 As discussed above, the details of the charge control and the accounting separation and cost accounting obligations will be considered in separate consultations.
- 5.182 We consider that this suite of remedies will operate together effectively to ensure effective Network Access on terms and conditions that will enable third party providers to compete effectively with BT in Market 1 and, separately, in Market 2 and with KCOM in the Hull Area in the downstream retail markets.
- 5.183 In the seven exchanges that move from Market 3 to Market 2, the remedies we are imposing on BT will apply from 31 March 2011, allowing a period of notice for customers with existing contracts with BT Wholesale.
- 5.184 Based on the remedies we have decided to impose, CPs may consider that it is not economically viable to supply customers in the Hull Area. If this is the case, the regulatory remedies we are imposing will not secure competition in the provision of downstream broadband services. Nonetheless, these remedies would enable other CPs to enter the Hull Area and compete with KCOM, should they choose to do so. Therefore we consider that this suite of remedies, taken together, is the most appropriate approach to ensure that consumers in the Hull Area continue to receive an adequate service at a reasonable price and to ensure the availability of Network Access on terms and conditions that would enable third party providers to enter the market and compete with KCOM effectively in the downstream retail markets should they wish to do so in the future.
- 5.185 In the following sections we discuss each of the remedies we are imposing in turn. We first discuss the general access, non-discrimination and transparency obligations we are imposing on BT in Market 1 and Market 2 and on KCOM in the Hull Area before discussing the specific pricing remedies we are imposing on BT in Market 1 and Market 2.

General access, non-discrimination and transparency obligations

- 5.186 As our reasoning for imposing these obligations is broadly the same in each market we discuss the imposition of remedies on BT in Market 1 and, separately, in Market 2 and on KCOM in the Hull Area together in the following paragraphs. However, the obligations are imposed separately in each market.

Requirement to provide Network Access on reasonable request

- 5.187 Section 87(3) of the Act authorises the setting of an SMP services condition requiring the dominant provider to provide Network Access as Ofcom may, from time to time, direct. These conditions may, pursuant to Section 87(5), include provision for securing fairness and reasonableness in the way in which requests for Network Access are made and responded to and for securing that the obligations in the conditions are complied with within periods and at times required by or under the conditions. When considering the imposition of such conditions in a particular case, Ofcom must have regard to the six factors set out in Section 87(4) of the Act, including *inter alia*, the technical and economic viability of installing other competing facilities and the feasibility of the proposed Network Access.
- 5.188 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, the condition requires BT and KCOM to meet reasonable requests for Network Access. The condition will also require BT and KCOM to provide Network Access in response to such a reasonable request on fair and reasonable terms and conditions, including charges. BT and KCOM will also be obliged to provide Network

Access on such terms and conditions, including charges, as Ofcom may from time to time direct.

Aims and effects of the condition

- 5.189 Ofcom considers that it is appropriate to impose a requirement on BT in Market 1 and Market 2 and on KCOM in the Hull Area to meet reasonable requests for Network Access as a result of the SMP that they hold. Ofcom considers that, in the absence of such a requirement, BT and KCOM would have the ability and the incentive not to provide such access.
- 5.190 Our market analysis has shown that there are considerable sunk costs associated with building networks to provide broadband services. There is currently no competition to BT in Market 1. Whilst there is potential for some deployment in Market 1, we consider that it is unlikely to be economically viable for enough CPs to build networks in Market 2 on a sufficient scale to provide sufficient competitive alternatives to BT.
- 5.191 In Market 2 some competition exists. However, we consider that it is unlikely to be economically viable for enough CPs to build networks in Market 2 on a sufficient scale to provide sufficient competitive alternatives to BT.
- 5.192 In the Hull Area, we consider that it is unlikely to be economically viable for other CPs to build direct access networks on a sufficient scale to provide a viable alternative to KCOM.
- 5.193 Therefore, we have concluded that a requirement on BT to provide access to its network in Market 1 and Market 2 and the same requirement on KCOM in the Hull Area is appropriate as it would be likely to facilitate competition in downstream markets by enabling CPs to compete without the need to invest in a network which might not be economically viable.

Legal tests

- 5.194 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.195 An obligation to provide Network Access is objectively justifiable in that it will encourage greater access to BT's and KCOM's network and will therefore foster competition. The obligation does not discriminate unduly between providers, as it is imposed on BT and KCOM only in markets where they hold SMP and they are the only operators found to have SMP in these markets. The obligation is also proportionate in what it is trying to achieve since it is directly targeted at addressing the market power which we have concluded that BT and KCOM hold in Market 1 and Market 2 and the Hull Area respectively and it does not require them to provide access where it is not technically feasible or reasonable. The obligation is transparent since its intention to ensure that BT and KCOM provide access to their networks in order to facilitate effective competition as described above are clear on the face of the condition itself, the text of which is set out in the notification at Annex 1.
- 5.196 Ofcom has also taken into account the factors set out in Section 87(4) of the Act. In particular, the obligation only requires BT and KCOM to meet requests that are reasonable, by which it is meant, *inter alia*, that the terms of access are technically and economically viable, and feasible. The requirement on BT and KCOM only to

meet reasonable requests also ensures that due account is taken of the investment made by BT and KCOM initially in providing the network whilst ensuring that effective competition is secured in the long term.

- 5.197 Ofcom has considered its duties under section 3 of the Act. We consider that, in ensuring Network Access at the reasonable request of third parties, the condition will in particular further the interests of citizens and further the interests of consumers in relevant markets by the promotion of competition.
- 5.198 Ofcom has also considered the Community requirements as set out in section 4 of the Act. We consider the condition in particular will promote competition in relation to the provision of electronic communications networks and encourage the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.
- 5.199 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement not to unduly discriminate

- 5.200 Section 87(6)(a) of the Act authorises the setting of an SMP services condition requiring the dominant provider not to discriminate unduly against particular persons, or against a particular description of persons, in relation to matters connected with the provision of Network Access.
- 5.201 Recital 17 of the Access Directive states that no undue discrimination obligations ensure that undertakings with market power do not distort competition, in particular where they are vertically integrated undertakings that supply services to competitors in downstream markets. This is the case with respect to the providers we have concluded have SMP in the provision of WBA (e.g. BT and KCOM).
- 5.202 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, the condition requires that BT and KCOM must not discriminate unduly against particular persons or against a particular description of persons in relation to matters connected with Network Access.

Aims and effects of the condition

- 5.203 Ofcom believes that it is appropriate to impose a requirement on BT in Market 1 and Market 2 and on KCOM in the Hull Area as a result of their SMP in those markets not to discriminate unduly in the provision of Network Access. We consider that, in the absence of such a requirement, BT and KCOM would have the ability and the incentive to give preferential treatment to their downstream businesses. Therefore, this obligation serves as an important complementary remedy to the Network Access obligation.

Legal tests

- 5.204 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.205 Ofcom considers that the obligation is objectively justifiable, in that it provides safeguards to ensure that competitors, and hence consumers, are not disadvantaged by BT or KCOM discriminating unduly in favour of their own retail activities or

between different providers. The obligation does not discriminate unduly between providers, as it is imposed on BT and KCOM only in markets where they have been found to hold SMP and they are the only operators found to have SMP in these markets. The obligation is proportionate since it only prevents behaviour which is unduly discriminatory. Behaviour that is unduly discriminatory (particular in favour of BT's or KCOM's own retail divisions) is likely to have a negative effect on consumers by reducing the effectiveness of their competitors, whose wholesale input products would be of inferior quality (or not competitively priced), compared to those available to BT's and KCOM's own retail divisions. However, it is no more intrusive than necessary to achieve its purpose effectively as it only relates to undue discrimination. Differences that reflect, for example, costs of provision, are not necessarily unduly discriminatory.

- 5.206 Finally, the obligation is transparent since its aims and effects described above are clear on the face of the condition itself, the text of which is set out in the notification at Annex 1. In addition, Ofcom has considered how it will treat undue discrimination in its guidelines on undue discrimination by SMP providers ("the Discrimination Guidelines").¹²⁷ Ofcom considers that undue discrimination occurs when an SMP provider does not reflect relevant differences between (or does not reflect relevant similarities in) the circumstances of customers in the transaction conditions it offers, and where such behaviour would harm competition. Ofcom further considers that, in the case of non-price differences in transaction conditions (and similar prices) offered by a vertically integrated SMP provider between an internal and external wholesale customer, Ofcom may presume discrimination. Such a presumption may be rebutted if an SMP provider can demonstrate objective justification for the differences.
- 5.207 We have also considered our statutory obligations and the Community objectives set out in sections 3 and 4 of the Act.
- 5.208 As BT has SMP in the provision of wholesale broadband access in Market 1 and Market 2 and KCOM has SMP in the Hull Area, these providers control a key input into a range of downstream services, principally asymmetric broadband access. Together with an obligation to provide Network Access, the obligation will in particular encourage the provision of Network Access and service interoperability for the purpose of promoting efficiency and sustainable competition in downstream markets by ensuring that BT and KCOM do not unduly discriminate. This will ensure a competitive playing field, leading to the promotion of competition and the interests of consumers through the maximisation of choice in downstream markets.
- 5.209 Therefore, we consider that the proposed condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.210 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourage the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.

¹²⁷ *Undue discrimination by SMP providers - How Ofcom will investigate potential contraventions on competition grounds of Requirements not to unduly discriminate imposed on SMP providers*, 15 November 2005, <http://stakeholders.ofcom.org.uk/consultations/undsmp/contraventions/?lang=default>

5.211 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement to publish a Reference Offer

5.212 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish all such information as Ofcom may direct, and in such manner as Ofcom may direct, for the purpose of securing transparency. Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(d) also permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in a reference offer (RO). Finally, Section 87(6)(e) permits the setting of SMP services conditions requiring the dominant provider to make such modifications to the reference offer as may be directed from time to time.

5.213 Ofcom considers that, where we require a RO to be published, this should include:

- a clear description of the services on offer;
- terms and conditions including charges and ordering, provisioning, billing and dispute resolution procedures. The RO should provide sufficient information to enable providers to make technical and commercial judgements such that there is no material adverse effect on competition;
- information relating to technical interfaces and points of interconnection. Such information should ensure that providers are able to make full and effective use of all the services provided;
- conditions relating to maintenance and quality (service level agreements and guarantees). The inclusion of service levels, as part of the contractual terms of the RO, that provides for a minimum acceptable level of service, will ensure that services are provided in a fair, reasonable, timely and non-discriminatory fashion; and
- terms and conditions that are fair and reasonable. This will ensure that products are offered on similar terms and conditions as they would be in a competitive market and that they are sensible, practical, and do not impose a margin squeeze on competitors.

5.214 As discussed above in relation to the conditions imposed on BT in Market 1 and, separately, in Market 2, and KCOM in the Hull Area we have removed Conditions EAA3.7, EAA10.7 and EBB3.7 which required BT and KCOM to give Ofcom at least ten days prior written notice of any amendment to the RO coming into effect, as this is superfluous when condition EAA4, EAA11 and EBB4 (the requirement to notify changes to charges, terms and conditions in Market 1, Market 2 and the Hull Area respectively) are considered.

Aims and effect of the condition

5.215 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, Ofcom believes that it is appropriate to impose a requirement on BT and KCOM to publish a RO. The main reasons for the publication of an RO are to assist transparency for the monitoring of potential anti-competitive behaviour and to

give visibility to the terms and conditions on which other providers would be able to purchase wholesale access services.

- 5.216 The requirement to publish a RO would complement the network access conditions to secure freedom of choice for wholesale customers of BT and KCOM and allow CPs to make informed decisions about future entry into the relevant market. Further, the obligation would promote the interests of purchasers of wholesale broadband access by enabling them to adjust their downstream offerings in competition with BT and KCOM, in response to changes in terms and conditions. Finally, the obligation would make it easier for Ofcom and other CPs in the relevant market to monitor any instances of discrimination.
- 5.217 Overall, the publication of a RO would therefore help to ensure stability in the market and ensure that incentives to invest would not be undermined.

Legal tests

- 5.218 Ofcom considers that the obligation satisfies the tests set out in Section 47(2) of the Act which require the condition to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.219 The obligation is objectively justifiable, in that it relates to the need to ensure that competition develops to the benefit of consumers. In particular, the RO will enable operators to make full and effective use of Network Access. The obligation does not discriminate unduly between providers, as the obligation is imposed on BT and KCOM only in markets where they have been found to hold SMP and they are the only operators with SMP in these markets. The obligation is proportionate in that only information that is necessary to ensure that there is no material adverse effect on competition is required to be provided. The obligation meets the test of transparency set out in the Act since its aims and effects described above are clear on the face of the condition itself, the text of which is set out in the notification at Annex 1.
- 5.220 We have also considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the Act.
- 5.221 The requirement to publish a RO would, in combination with a requirement not to discriminate unduly, facilitate service interoperability, secure freedom of choice for wholesale customers of BT and KCOM and allow CPs to make informed decisions about future entry into the relevant market. Further, the obligation would promote the interests of purchasers of wholesale broadband access by enabling them to adjust their downstream offerings in competition with BT and KCOM, in response to changes in terms and conditions made by BT and KCOM. Finally, the obligation would make it easier for Ofcom and other CPs in the relevant market to monitor any instances of discrimination.
- 5.222 For the reasons set out above, we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.223 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.

- 5.224 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement to notify charges, terms and conditions

- 5.225 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information as Ofcom may direct for the purpose of securing transparency. Section 87 (6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract (e.g. by the publication of a reference offer).

Aims and effects of the condition

- 5.226 The notification of charges, terms and conditions at the wholesale level has two main purposes: to assist transparency for the monitoring of potential anti-competitive behaviour and to give advance warning of charge changes to competing providers purchasing wholesale access services. The latter is important to ensure that competing providers have sufficient time to plan for such changes, as they may want to restructure their own offerings in response to changes at the wholesale level. Publication of charges, terms and conditions therefore helps to ensure stability in markets and without it incentives to invest might be undermined and market entry might be less likely.
- 5.227 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, Ofcom believes that it is appropriate to impose a requirement on BT and KCOM to publish any planned changes to charges, terms and conditions in advance of those changes taking place. The main benefit of this in wholesale markets is that other CPs would have the opportunity to consider whether these changes necessitate a change in their retail offerings.

Legal tests

- 5.228 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.229 The obligation is objectively justifiable because reliable visibility of prices is needed to enable Ofcom and competitors of BT and KCOM to monitor BT's and KCOM's prices for possible anti-competitive behaviour. This will work in conjunction with the requirement to provide Network Access to ensure effective entry to the market for third parties. The obligation does not discriminate unduly between providers, as the obligation is imposed on BT and KCOM only in markets where they have been found to have SMP and they are the only operators with SMP in these markets. We consider that a 28 day notification period achieves the purpose of allowing third party providers a sufficiently long period to plan for changes to terms, conditions and charges and to adjust their own offerings, whilst not being unduly burdensome for BT or KCOM. Therefore, we consider that the condition is proportionate. The condition is transparent since its aims and effects described above are clear on the face of the condition itself, as set out in the notification at Annex 1.
- 5.230 We have also considered our statutory obligations and the Community requirements under sections 3 and 4 of the Act.

- 5.231 In particular, the obligation would encourage transparency for the purpose of facilitating service interoperability and securing freedom of choice for the customers of CPs. The obligation would promote the interests of purchasers of wholesale broadband access by enabling them to adjust their downstream offerings in competition with BT and KCOM, in response to changes in terms and conditions by BT or KCOM. The obligation would also promote competition in downstream markets by allowing BT's and KCOM's competitors to make appropriate changes to their products. Finally, the obligation would make it easier for BT's and KCOM's competitors to monitor for instances of discrimination.
- 5.232 For the above reasons, we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.233 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.
- 5.234 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement to publish technical information

- 5.235 Section 87(6)(c) of the Act authorises the setting of SMP services conditions requiring the dominant provider to publish, in such manner as Ofcom may direct, the terms and conditions on which it is willing to enter into an access contract. Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information as Ofcom may direct for the purpose of securing transparency.

Aims and effects of the condition

- 5.236 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, BT and KCOM are required to publish any new or modified technical characteristics, points of Network Access and technical standards at least 90 days in advance of BT or KCOM either entering into a contract to provide new Network Access or making technical changes to existing Network Access unless Ofcom consents otherwise.
- 5.237 The main benefit of this in wholesale markets is to allow other CPs to ensure that their systems are interoperable with any changes to technical specifications that would be likely to affect their business.

Legal tests

- 5.238 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.239 The obligation is objectively justifiable in that it enables competing operators to make full and effective use of Network Access. The obligation does not discriminate unduly between providers, as the obligation is imposed on BT and KCOM only in markets where they have been found to have SMP and they are the only operators with SMP

in these markets. The obligation is proportionate in that in most circumstances 90 days is the minimum necessary to allow competing providers to modify their networks and any extension would be required only where it was reasonable to do so. The obligation is also transparent since its aims and effects described above are clear on the face of the condition itself, as set out in the notification at Annex 1.

- 5.240 We consider that, by ensuring that other CPs' systems are interoperable with any changes to technical specifications that might affect their businesses, the condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.241 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficient and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.
- 5.242 For all the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Transparency as to quality of service

- 5.243 Section 87(6)(b) of the Act authorises the setting of SMP services conditions which require a dominant provider to publish, in such manner as Ofcom may direct, all such information as Ofcom may direct for the purpose of securing transparency.

Aims and effects of the condition

- 5.244 Vertically integrated operators have the ability to favour their own downstream business over third party CPs by differentiating on price or terms and conditions. This discrimination could also take the form of variations in quality of service (either in service provision and maintenance or in the quality of network service provided by the dominant provider to external providers compared to its own retail operations). This has the potential to distort competition at the retail level by placing third party CPs at a disadvantage in terms of the services they can offer consumers to compete with the downstream retail business of the vertically integrated operator.
- 5.245 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, they are required to publish information related to transparency as to quality of service. The main benefit of this in wholesale markets is that other CPs will be able to ensure that they are not unduly discriminated against in the services they receive from BT and KCOM compared to that provided by BT and KCOM to their own retail divisions.
- 5.246 The obligation requires BT and KCOM to publish information as directed by Ofcom, rather than requiring them to publish specific information from the date of the imposition of the obligation. This is the same as the condition imposed in previous reviews. As we have not considered it necessary to issue any such direction based on concerns that they may be discriminating in the quality of service they provide, we are of the view that it is appropriate to continue this approach.

Legal tests

- 5.247 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.248 The obligation is objectively justifiable in that it enables competing operators to make full and effective use of Network Access and to ensure that, in purchasing this access, they are not subject to undue discrimination. The obligation does not discriminate unduly between providers, as the obligation is imposed on BT and KCOM only in markets where they have been found to have SMP and no other operator has SMP in these markets. The obligation is proportionate because it only requires BT and KCOM to publish information as directed by Ofcom in the event we consider such information is required to monitor their compliance with their other obligations, which is the minimum condition to ensure the desired objective. The obligation is also transparent since its aims and effects described above are clear on the face of the condition itself, as set out in the notification at Annex 1.
- 5.249 We consider that, in ensuring the Network Access that third party CPs receive from BT and KCOM is equal to that provided by them to their own retail divisions, the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.250 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.
- 5.251 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Requirement to account separately

- 5.252 Sections 87(7) and 87(8) of the Act authorises Ofcom to impose appropriate accounting separation obligations in respect of the provision of Network Access, the use of the relevant network and the availability of relevant facilities. An operator with SMP may be required to maintain a separation for accounting purposes between such different matters relating to Network Access or the availability of relevant facilities. Accounting separation would prevent a vertically integrated operator with SMP from providing wholesale services on terms and conditions that discriminate in favour of its own retail activities in such a way that may have a material effect on competition because internal transfer prices and external charges would be visible.

Aims and effects of the condition

- 5.253 As a result of the SMP that BT holds in Market 1 and Market 2 and KCOM holds in the Hull Area, Ofcom believes that it is appropriate to require BT and KCOM to account separately for internal and external 'sales' of wholesale broadband access services. The main benefit of this in wholesale markets is that other CPs and the regulator can monitor the SMP operator to ensure that it does not discriminate in favour of its own downstream business and to monitor profitability.

Legal tests

- 5.254 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.255 Ofcom believes that given the importance of non-discrimination in these markets the imposition of an accounting separation obligation is objectively justifiable. That is, in order to ensure that the obligation not to discriminate unduly is met and the benefits are realised, it is essential that Ofcom and competitors to BT and KCOM are able to monitor the obligations via an accounting separation obligation. The obligation does not discriminate unduly between providers, as it is imposed on BT and KCOM only in markets where they have been found to have SMP and they are the only operators with SMP in these markets. It is proportionate as it is necessary as a mechanism to allow Ofcom and third parties to monitor for discriminatory behaviour by BT and KCOM, whilst not being more intrusive than necessary with respect to their business to achieve its purpose effectively.
- 5.256 It is transparent as it is clear the intention is to allow Ofcom and third parties to monitor compliance with specific remedies (in particular the obligation not to unduly discriminate) imposed to address BT's SMP in Market 1 and Market 2 and KCOM's SMP in the Hull Area.
- 5.257 In particular, the imposition of an accounting separation obligation is specifically justifiable and proportionate in order to ensure the provision of Network Access by BT and KCOM on a non-discriminatory basis in order to promote competition in relation to the provision of electronic communications networks and services for the maximum benefit of the persons who are customers of CPs. This is because the imposition of an accounting separation obligation will ensure that obligations designed to curb potentially damaging leverage of market power can be effectively monitored and enforced. This is particularly important where there are adjacent geographic markets with different competitive conditions, as in this case. This is because the SMP operator could try to recover some of the cost incurred in these adjacent markets in the market where it holds SMP, thus undermining the prospects of competition in the adjacent markets. The accounting separation obligation will allow Ofcom to monitor the profitability of the SMP provider in the market in which it has SMP.
- 5.258 For these reasons, we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.259 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.
- 5.260 For all the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Implementation

- 5.261 Our approach to BT's and KCOM's financial reporting is to consult on changes that are required each year prior to preparation of their Regulatory Financial Statements.

This allows us, among others, to take into account changes resulting from market reviews completed within a given year.¹²⁸ A consultation on changes to BT's and KCOM's 2010/11 Regulatory Financial Statements will be published shortly. That consultation sets out our detailed proposals on reporting in Market 1, Market 2 and the Hull Area, as well as the proposed legal instrument which will implement the SMP conditions.

Pricing remedies in Market 1

5.262 We have also decided to impose the following pricing remedies in Market 1:

- Basis of charges;
- Cost accounting; and
- Charge control.

Basis of charges

5.263 Section 87(9) of the Act authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation.

Aims and effects of the condition

5.264 A basis of charges obligation requires BT to set its charges based on its costs and applies to each and every charge. LRIC plus an appropriate mark up for common costs and for recovery of cost of capital is the preferred method for this type of regulation in communications markets. Common costs need to be recovered through mark-ups over LRIC to allow BT to recover all of its costs, for example, in situations of one-way access where rivals buy wholesale inputs from the SMP wholesale provider without also selling wholesale inputs to the SMP wholesale provider. A requirement for charges to reflect an appropriate mark-up allows sufficient flexibility for this to be done in an efficient way whilst avoiding anti-competitive low prices or excessive prices.

5.265 As set out above in paragraph 5.117, where we have imposed a basis of charges condition, our view has been that the interpretation of the basis of charges obligation would be that prices must, as a "first order test", be between DLRIC and DSAC. However, interpretation of the basis of charges condition is currently the subject of an appeal at the CAT. We would therefore need to take the CAT's final determination into account in applying this obligation.

Legal tests

5.266 We consider that a basis of charges condition meets the criteria set out in section 47(2) - being objectively justifiable, non-discriminatory, proportionate and transparent - and the further criteria set out in section 88 of the Act in relation to price control conditions

¹²⁸ Note for example that in considering BT's obligations in our statement of 4 June 2010 we highlighted the possibility that obligations may need to be reviewed following completion of the WBA market review: Changes to BT's and KCOM's regulatory and financial reporting 2009/10 update, 4 June 2010, <http://stakeholders.ofcom.org.uk/consultations/btregs10/statement/>

- 5.267 The obligation is objectively justifiable based on the evidence outlined in section 4 of this statement that in the absence of regulation BT may be able to price above the competitive level. The obligation is intended to reduce BT's ability to charge excessive prices to consumers in a market where BT currently faces no competitive or pricing constraints and where there are unlikely to be sufficient constraints on BT's pricing through the period of this review. The obligation does not unduly discriminate against BT since BT is the only operator active in Market 1. The obligation is proportionate in that it allows BT to make a return on investment in Market 1 whilst acting to constrain BT's ability to set wholesale prices above the competitive level which may ultimately result in consumers paying higher retail prices. The obligation is transparent since its aims and effects, as described above, are clear on the face of the condition itself, as set out in the notification at Annex 1.
- 5.268 Price control obligations must also satisfy the conditions set out in section 88 of the Act. According to section 88, we may impose a basis of charges obligation if we consider that there is sufficient risk of adverse effects arising from price distortion. We must also consider if the pricing obligation promotes efficiency, promotes sustainable competition and confers the greatest possible benefits on end users. We must also take account of the extent of investment made by the dominant provider.
- 5.269 As an operator with SMP in the provision of wholesale broadband access, BT is able to use its market power to set prices at an excessive level and restrict or distort competition in Market 1. The basis of charges condition would act to ensure that each and every price would be set based on costs and so could not be set at excessively high levels that would ultimately impact the prices paid by end users.
- 5.270 We are also of the view that the basis of charges condition promotes efficiency and sustainable competition, conferring the greatest possible benefit on consumers. CPs seeking to compete based on purchasing LLU in Market 1 will only enter the market if they are equally or more efficient than BT. It recognises investment in that BT is able to make a return on its investment in Market 1, and any operator that enters the market will only do so if it expects to be able to earn an acceptable return on its investment.
- 5.271 For these reasons we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.272 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband access services.
- 5.273 We also consider that it would be appropriate to require any charges for services provided under the network access obligations to be fair and reasonable, in order to promote efficiency and sustainable competition and provide the greatest possible benefits to end users by enabling competing providers to buy network access at levels that might be expected in a competitive market.
- 5.274 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Cost Accounting

- 5.275 Under sections 87(9) to 87(11) of the Act, appropriate cost accounting obligations may be imposed on dominant providers in respect of the provision of network access, the use of the relevant network and the availability of relevant facilities. Cost accounting rules may be made in relation to charge controls, the recovery of costs and cost orientation.
- 5.276 Where there is an obligation for prices to be cost orientated (via a basis of charges obligation and/or charge control obligation) a cost accounting obligation requires the provider subject to the cost orientation obligation to publish accounting data to demonstrate that their charges meet this obligation.
- 5.277 BT is required to comply with obligations governing cost accounting systems and processes as set out in an Ofcom statement published in 2004.¹²⁹ The outputs include:
- Generic cost orientation and non-discrimination requirements:
 - Preparation of a variety of financial statements;
 - Preparation of extensive supporting documentation explaining how the financial statements have been put together;
 - Provision of an independent assurance statement;
 - Publication of most of the information; and
 - Preparation of reconciliation statements;
 - Cost orientation specific requirements:
 - Preparation of service level cost data compared to average charges;
 - Preparation of costs of network components used to deliver services; and
 - Analysis of service cost stack by component;
 - Non-discrimination specific requirements:
 - Analysis of internal and external sales including volume data.

Aims and effects of condition

- 5.278 We have decided to impose a cost accounting obligation on BT in Market 1. The main benefit of this in wholesale markets is that other CPs and Ofcom can monitor BT to ensure that it meets its cost orientation and charge control obligations.

¹²⁹ 'The regulatory financial reporting obligations on BT and Kingston Communications, Final Statement and notification: Accounting separation and cost accounting', 22 July 2004, http://www.ofcom.org.uk/consult/condocs/fin_reporting/fin_report_statement/

Legal tests

- 5.279 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.280 We believe that the imposition of a cost accounting obligation is objectively justifiable to ensure the basis of charges and charge control obligations are met. The obligation does not discriminate unduly between providers, as it is imposed on BT and BT only markets where it has been found to have SMP. It is proportionate because without such an obligation, it would not be clear that BT is meeting its obligations and it is transparent since its aims and effects described above are clear and the specific terms will be made clear as a result of our consultation and subsequent statement on BT's regulatory reporting obligations.
- 5.281 We also consider that the conditions of section 88 of the Act are met since the obligation works in conjunction with the basis of charges and charge control obligations to ensure the aims and effects of these obligations are met.
- 5.282 We have considered our statutory obligations and the Community requirements set out in Sections 3 and 4 of the Act.
- 5.283 In particular, the imposition of a cost accounting obligation would specifically be justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and services; to ensure the provision of Network Access and service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefit for the persons who are customers of CPs. This is because the imposition of the obligation will ensure that obligations designed to curb potentially damaging leverage of market power – in particular the setting of prices at excessive levels - can be effectively monitored and enforced. This is particularly important where there are adjacent geographic markets with different competitive conditions, as in this case. This is because the SMP operator could try to recover some of the cost incurred in these adjacent markets in the market where it holds SMP, thus undermining the prospects of competition in the adjacent markets.
- 5.284 For these reasons, we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.285 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.
- 5.286 For all the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Implementation

- 5.287 Our approach to BT's financial reporting is to consult on changes that are required each year prior to BT's preparation of its Regulatory Financial Statements. A consultation on changes to BT's 2010/11 Regulatory Financial Statements will be published shortly. That consultation sets out our detailed proposals on reporting in

WBA Market 1 and Market 2, as well as the proposed legal instrument which will implement the SMP conditions.

Charge Control

- 5.288 Section 87(9) of the Act authorises the setting of SMP services conditions imposing on the dominant provider price controls connected with the provision of network access.

Aims and effects of the condition

- 5.289 As discussed above, in Market 1, BT is currently the only provider. We do not consider that future entry (for example by Talk Talk, or the threat of entry, will act to constrain BT's wholesale prices. As such, BT has the ability and the incentive to set prices above the competitive level. BT's competitors at the retail level would be forced to pay these high prices in order to provide service on a national basis. We therefore are of the view that ex ante pricing obligations are required to address BT's SMP in Market 1.
- 5.290 BT is currently the monopoly provider in Market 1 and, even when the potential for future entry is accounted for, BT's market share is likely to remain very high. It is therefore unlikely that BT will be incentivised to reduce its costs and set prices at the competitive level. It would be likely to be able to recover higher costs through higher prices charged at the wholesale level, which would ultimately be passed on in higher retail charges.
- 5.291 In addition there are significant costs related to the WBA market that are not specifically allocated to the different geographic markets. BT may seek to recover these costs, as well as common costs, through its prices in Market 1.
- 5.292 Imposing a charge control allows for these effects to be addressed. It will provide more certainty over the life of the control period about the maximum level of WBA charges. It will also result in prices being based on a forward-look view of the costs related to provision of service in Market 1 at the end of the period, taking into account efficiency improvements and possible future investment by BT that will be of benefit to consumers and citizens.
- 5.293 We will discuss the specific structure of the charge control in a separate consultation which we will publish shortly.

Legal tests

- 5.294 We consider that a charge control obligation meets the criteria set out in section 47(2) of the Act, since it is objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.295 A charge control is objectively justifiable in order to restrict BT's ability to charge excessive prices to CPs that would ultimately be passed on to consumers in a market where BT currently faces no competitive or pricing constraints and where its pricing is unlikely to be constrained throughout the period of this review. A charge control does not unduly discriminate against BT as it is imposed only in a market where BT has been found to have SMP. The charge control is proportionate as we will take account of the need for BT to be able to make a return on its investment in Market 1 whilst acting to constrain BT's ability to set wholesale prices above the competitive level which may result in consumers paying higher retail prices. We will address this

further in our consultation on the WBA charge control. The requirement for a charge control is transparent since its aims and effects are described above. The terms of the condition will be set out in detail in our consultation which we will publish shortly.

- 5.296 We also consider that setting a charge control fulfils the conditions set out in section 88 of the Act.
- 5.297 As set out above, we consider there is a risk of adverse effects arising if BT sets some or all of its prices at an excessively high level, reducing benefits for end-users of WBA services.
- 5.298 A charge control will work in conjunction with the basis of charges condition discussed above. The basis of charges condition requires BT to set each price based on its costs in Market 1. However, the basis of charges condition is unlikely to incentivise BT to reduce its costs. In the absence of a charge control BT would be likely to be able to recover higher costs through higher prices charged at the wholesale level, which would ultimately be passed on in higher retail charges.
- 5.299 A charge control addresses this as it will be structured to incentivise efficiency improvements and/or investment by BT, which will be of benefit to all purchasers of WBA products (and, ultimately, could result in better products and lower prices for consumers).
- 5.300 We are of the view that a charge control condition will promote efficiency by requiring BT to price at the level of an efficient firm in the absence of competitive constraints in this market. The charge control will aim to promote sustainable competition by only encouraging equally or more efficient CPs to compete based on LLU. It will also aim to promote sustainable competition at the retail level by restricting BT's ability to price excessively with the aim of making it more difficult for other providers to compete. We expect that the benefits of this pricing will eventually flow through to end-users of WBA services.
- 5.301 For the reasons set out above, we consider that the imposition of a charge control will in particular further the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act. Further, we consider that, in line with section 4 of the Act, the condition will, in particular, promote competition in relation to the provision of electronic communications networks and will encourage the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.

Pricing remedies in Market 2

Basis of charges

- 5.302 Section 87(9) of the Act authorises the setting of SMP services conditions imposing on the dominant provider rules concerning the recovery of costs and cost orientation.

Aims and effects of condition

- 5.303 Our view is that BT should be given flexibility to set prices in Market 2 in a way that reflects the current and prospective competitive conditions in the market. We think that the suite of general access and non-discrimination remedies which together impose a "retail minus" cap on WBA prices will support the potential for further

investment in LLU in Market 2. However, this retail minus constraint may not, on its own, be sufficient to constrain BT's prices to the competitive level in Market 2. In order to safeguard against the risk of excessive prices, we have therefore decided to impose a cost orientation obligation.

- 5.304 Our aim in Market 2 is to have a regulatory approach that takes into account the investment by other operators (both current and future) while, at the same time, ensuring BT's pricing is not excessive. We consider that cost orientation (imposed via the basis of charges obligation), in support of the retail minus approach imposed by the general access and non-discrimination obligations, will provide a sufficient safeguard.
- 5.305 As set out above in relation to the basis of charges obligation we are imposing in Market 1, interpretation of the obligation, based on a "first order test" based on DLRIC and DSAC is currently subject to review by the CAT and we will take account of the CAT's final decisions in interpreting this obligation.

Legal tests

- 5.306 We consider that a basis of charges condition meets the criteria set out in section 47(2) - being objectively justifiable, non-discriminatory, proportionate and transparent - and the further criteria set out in section 88 of the Act in relation to price control conditions.
- 5.307 A basis of charges obligation is objectively justifiable based on the evidence outlined in section 4 above that BT only faces limited competition, and so, in the absence of regulatory obligations focused on limiting BT's pricing, there may be insufficient constraint so that BT is able to set prices at an excessive level. The obligation does not discriminate unduly as it is only imposed on BT which is the only operator found to have SMP in Market 2 and it recognises the particular competitive characteristics of this market. It is proportionate as it recognises the differing conditions in Market 2 compared to Market 1 by providing some additional flexibility (as compared to a charge control) to BT over the level at which it sets its WBA prices, and allows BT to make sufficient returns.
- 5.308 The obligation is transparent since its aims and effects, as described above, are clear on the face of the condition itself, as set out in the notification at Annex 1.
- 5.309 Section 88 of the Act allows Ofcom to impose the cost orientation obligation if we consider that there is sufficient risk of adverse effects arising from price distortion. We must also consider if the setting of the condition promotes efficiency, promotes sustainable competition and confers the greatest possible benefits on end users. We must also take account of the extent of investment made by BT.
- 5.310 Ofcom considers that imposing a basis of charges obligation on BT in Market 2 will satisfy the tests set out in Section 88 of the Act. We consider that there is a risk of adverse effects arising if BT were to set some or all of its prices at an excessively high level, reducing benefits for end-users. Ofcom's approach is intended to constitute a lower level of regulatory control than a direct price control, allowing the SMP operator to have some degree of flexibility in setting prices according to its commercial judgement. It is a proportionate response to the degree of market power being exercised in Market 2 and will help ensure that incentives to invest are not undermined. The approach strikes the right balance between setting efficient prices today and securing longer term benefits for retail consumers through further LLU

investment and additional competition in Market 2, whilst allowing BT to make a reasonable return on its investment in Market 2.

- 5.311 For these reasons we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.312 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.
- 5.313 We also consider that it would be appropriate to require any charges for services provided under the network access obligations to be fair and reasonable, in order to promote efficiency and sustainable competition and provide the greatest possible benefits to end users by enabling competing providers to buy network access at levels that might be expected in a competitive market.
- 5.314 For the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Cost Accounting

- 5.315 Where an obligation for prices to be cost orientated is imposed (via a basis of charges obligation and/or charge control obligation), a cost accounting obligation requires the provider subject to the cost orientation obligation to publish accounting data to demonstrate that their charges meet this obligation. We are imposing a cost accounting obligation on BT in Market 2. The aims and effects of the condition to require cost accounting in Market 2 are the same as those discussed above in Market 1, as is the condition. As such we do not repeat those discussions here.

Legal tests

- 5.316 Section 47(2) of the Act requires conditions to be objectively justifiable, non-discriminatory, proportionate and transparent.
- 5.317 We believe that the imposition of a cost accounting obligation is objectively justifiable to ensure the basis of charges and charge control obligations are met. The obligation does not discriminate unduly between providers, as it is imposed on BT and BT is the only provider with SMP in Market 2. It is proportionate because without such an obligation, it would not be clear that BT is meeting its obligations and it is transparent since its aims and effects described above are clear and the specific terms will be made clear in our consultation on BT's regulatory reporting obligations, which will be published shortly.
- 5.318 We also consider that the conditions of section 88 of the Act are met since the obligation works in conjunction with the basis of charges obligation to ensure the aims and effects of this obligation are met.
- 5.319 We have considered our statutory obligations and the Community requirements set out in Sections 3 and 4 of the Act.

- 5.320 In particular, the imposition of a cost accounting obligation would specifically be justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and services; to ensure the provision of Network Access and service interoperability for the purpose of securing efficient and sustainable competition and the maximum benefit for the persons who are customers of CPs. This is because the imposition of the obligation will ensure that obligations designed to curb potentially damaging leverage of market power – in particular the setting of prices at excessive levels - can be effectively monitored and enforced. This is particularly important where there are adjacent geographic markets with different competitive conditions, as in this case. This is because the SMP operator could try to recover some of the cost incurred in these adjacent markets in the market where it holds SMP, thus undermining the prospects of competition in the adjacent markets.
- 5.321 For these reasons, we consider that the condition in particular furthers the interests of citizens and of consumers in relevant markets by the promotion of competition in line with section 3 of the Act.
- 5.322 Further, we consider that, in line with section 4 of the Act, the condition in particular promotes competition in relation to the provision of electronic communications networks and encourages the provision of Network Access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.
- 5.323 For all the reasons set out above, we consider that the condition is appropriate to address the competition concerns identified, in line with section 87(1) of the Act.

Implementation

- 5.324 Our approach to BT's financial reporting is to consult on changes that are required each year prior to BT's preparation of its Regulatory Financial Statements. A consultation on changes to BT's 2010/11 Regulatory Financial Statements will be published shortly. That consultation sets out our detailed proposals on reporting in WBA Market 1 and Market 2, as well as the proposed legal instrument which will implement the SMP conditions.

Conclusion on remedies

- 5.325 We have set out above the remedies we are imposing on BT in Market 1 and, separately, in Market 2 and on KCOM in the Hull Area. We have concluded that this set of remedies are the most appropriate to address the SMP in these markets.
- 5.326 In coming to this conclusion we have taken account of the ERG Bitstream Position. As we have not changed our view on the remedies to impose, it follows that the account we took of the ERG position in the first consultation remains relevant. Table 5.2 reproduces how we took account of the ERG Bitstream Position in proposing the package of remedies to be imposed in Market 1, Market 2 and the Hull Area in the first consultation.

Table 5.2: Account taken of the ERG Bitstream Position

Objective of remedy	Account taken by Ofcom
Assurance of access	The requirement to provide Network Access on reasonable request should provide competitors with confidence to enter the market.
Level playing field	The requirement not to unduly discriminate, together with the Discrimination Guidelines, should ensure that entrants will be able to compete on a level playing field.
Avoidance of unfair first-mover advantage	The requirement not to unduly discriminate, together with the Discrimination Guidelines, should ensure that there is no unfair first-mover advantage.
Transparency of terms and conditions	The requirement to publish a Reference Offer and the requirement to notify charges, terms and conditions should provide clarity of terms and conditions of access.
Reasonableness of technical parameters of access	The requirement to publish a Reference Offer and the requirement to publish technical information should ensure that the technical parameters of access are reasonable.
Fair and coherent access pricing	<p>Ofcom has taken different approaches in different markets.</p> <p>In Market 1, where BT is the only provider of wholesale products, we have imposed a charge control.</p> <p>In Market 2, the general access and non-discrimination obligations safeguard against margin squeeze whilst the basis of charges obligation requires prices to be based on costs.</p> <p>In the Hull Area our view is that imposing specific pricing remedies would not lead to entry by other CPs. Other CPs can request access and the general access and non-discrimination obligations would combine to guard against margin squeeze.</p>
Reasonable quality of access products	The requirement not to unduly discriminate, together with the Discrimination Guidelines, the requirement to publish a Reference Offer and the requirement to have transparency as to quality of service should ensure that access products are of reasonable quality.
Assurance of efficient and convenient switching processes	On 22 February 2007 Ofcom introduced a new General Condition (GC22). This places an obligation on broadband providers to use an efficient migrations process.
Assurance of backhaul from the point of delivery of the bitstream service to a reasonable point of handover to the alternative provider	Ofcom's product definition includes "...any backhaul to allow interconnection with other CPs."
Assurance of co-location at DPs	To the extent that this is necessary for interconnection to take place Ofcom considers that this is provided for under the requirement to provide Network Access on reasonable request.

- 5.327 We have also taken utmost account of the NGA Recommendation. We have set out above that we consider our approach to cost orientation for NGA services to be consistent with the Recommendation, and that we have not required BT to provide six months prior notice of its wholesale products as we consider that other non-discrimination obligations are sufficient.

Annex 1

Legal Instrument

NOTIFICATION UNDER SECTIONS 48(1) AND 79(4) OF THE COMMUNICATIONS ACT 2003

Background

1. On 21 May 2008, the Office of Communications (“Ofcom”) published a statement entitled *Wholesale broadband access market review*¹³⁰ (the “**2008 Notification**”) identifying the services markets of wholesale broadband access services, making market power determinations and setting SMP services conditions applying to BT and KCOM.
2. On 23 March 2010, Ofcom published a consultation entitled *Review of the wholesale broadband access markets – Consultation on market definition, market power determinations and remedies* on proposals reviewing market definitions, market power determinations and the setting of SMP conditions (the “**First 2010 Consultation**”).
3. On 20 August 2010, Ofcom published a further consultation entitled *Review of the wholesale broadband access markets – Second consultation on market definition, market power determinations and remedies* on further proposals reviewing market definitions, market power determinations and the setting of SMP conditions (the “**Second 2010 Consultation**”).
4. Ofcom received responses to both the First 2010 Consultation and the Second 2010 Consultation from communications providers, other organisations and individuals, and comments from the European Commission. Ofcom has carefully considered all responses received.

Decisions relating to services market identifications and market power determinations

5. Ofcom hereby makes the following decisions for identifying markets, making market power determinations and the setting of SMP services conditions by reference to such determinations (“SMP services conditions”).
6. Ofcom identifies in accordance with section 79(4) of the Act the following markets for the purpose of making market power determinations:
 - (a) wholesale broadband access provided in Market 1;
 - (b) wholesale broadband access provided in Market 2;
 - (c) wholesale broadband access provided in Market 3; and
 - (d) wholesale broadband access provided in the Hull area;
7. Ofcom in accordance with section 79(4) of the Act makes market power determinations that the following persons have significant market power:
 - (a) in relation to the markets set out in paragraphs 6(a) and 6(b) above, BT; and
 - (b) in relation to the market set out in paragraph 6(d) above, KCOM;
8. The effect of, and Ofcom’s reasons for, identifying the markets set out in paragraph 6 above are contained in section 3 of the explanatory statement published with this Notification;

¹³⁰ <http://www.ofcom.org.uk/consult/condocs/wbamr07/statement/statement.pdf>

9. The effect of, and Ofcom's reasons for, making the market power determinations set out in paragraph 7 above are contained in section 4 of the explanatory statement published with this Notification;

Decisions to set SMP services conditions

10. Ofcom sets SMP conditions on the persons referred to in paragraph 7 above as set out in Schedules 1 to 3 to this Notification, with effect from the date of this Notification, unless otherwise stated in paragraphs 11 and 12 below;
11. Insofar as the SMP conditions set out in Schedule 2 of this Notification apply to exchanges set out at Appendix 5 to this Notification, those SMP conditions shall have effect from 31 March 2011.
12. Insofar as the SMP conditions set out in Schedule 1 of this Notification apply to exchanges set out at Appendix 6 to this Notification, those SMP conditions shall have effect from the day BT deploys broadband capability in those exchanges.
13. Insofar Next Generation Access Services are offered by BT in any of the exchanges set out at Appendix 1 or Appendix 2 to this Notification, Condition EAA7 set out in Schedule 1 of this Notification and Condition EAA14 set out in Schedule 2 of this Notification shall have no effect in relation to the charge offered, payable or proposed for such services.
14. The effect of, and Ofcom's reasons for setting the SMP conditions set out in Schedules 1 to 3 to this Notification are contained in section 5 of the explanatory statement published with this Notification.

Decisions to revoke SMP services conditions

15. Ofcom revokes all the SMP services conditions set out at Annex 1 of the 2008 Notification, and any subsequent modifications to the SMP services conditions set out at Annex 1 of the 2008 Notification, in accordance with paragraphs 16 and 17 below.
16. Insofar as the SMP services conditions set out at Annex 1 of the 2008 Notification relate to the markets set out in paragraph 6 above, those SMP services conditions shall be revoked by this Notification when it takes effect under sections 48(1) and 79(4) of the Act, unless otherwise stated in paragraph 17 of this Notification.
17. Insofar as Condition EA1 of Schedule 1 to Annex 1 of the 2008 Notification or Condition EA7 of Schedule 2 to Annex 1 of the 2008 Notification apply to exchanges that for the purposes of this market review fall within Market 3 and insofar as these Conditions relate to the provision of Network Access to a Third Party which is an existing wholesale broadband access customer of BT, these Conditions shall be revoked by this Notification on the day which is one year from the date on which it takes effect under sections 48(1) and 79(4) of the Act. The relevant exchanges are set out in Appendix 4 to this Notification. For the avoidance of doubt Conditions EA2, EA3, EA4, EA5 and EA6 of Schedule 1 to Annex 1 of the 2008 Notification and Conditions EA8, EA9, EA10, EA11 and EA12 of Schedule 2 to Annex 1 of the 2008 Notification, insofar as they relate to Market 3, shall be revoked by this Notification when it takes effect under sections 48(1) and 79(4) of the Act.

Ofcom's duties and legal tests

18. In identifying and analysing the markets referred to in this Notification, and in considering whether to make the corresponding decisions, Ofcom has, in accordance with section 79 of the Act, taken due account of all applicable guidelines and recommendations which have been issued or made by the European Commission in pursuance of a Community instrument, and relate to market identification and analysis or the determination of what constitutes significant market power.
19. Ofcom considers that the proposed SMP conditions above comply with the requirements of sections 45 to 47, 87, 88 and 90 of the Act, as appropriate and relevant to each such SMP condition, and further that the revocations of the SMP conditions referred to above comply with the requirements of sections 45 to 47, 87 and 88 of the Act as appropriate and relevant to them.
20. In making all of the decisions referred to in this Notification, Ofcom has considered and acted in accordance with section 3 of the Act and the six Community requirements in section 4 of the Act.
21. Copies of this Notification and the accompanying explanatory statement have been sent to the Secretary of State in accordance with section 50(1)(a) and 81(1) of the Act, and to the European Commission and regulatory authorities of every other Member State in accordance with sections 50(2) and 81(2) of the Act.

Interpretation

22. Except for the purposes of paragraph 6 of this Notification and except as otherwise defined in this Notification, words or expressions used shall have the same meaning as they have been ascribed in the Act.
23. In this Notification:

"2008 Notification" has the meaning given in paragraph 1 above;

"the Act" means the Communications Act 2003 (c. 21);

"BT" means British Telecommunications plc whose registered company number 1800000, and any British Telecommunications plc subsidiary or holding company, or any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006;

"Hull area" means the area defined as the 'Licensed Area' in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc, (now known as KCOM);

"KCOM" means KCOM Group plc whose registered company number 2150618, and including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006;

"Market 1" means the area covered by the BT exchanges set out at Appendix 1 to this Notification;

"Market 2" means the area covered by the BT exchanges set out at Appendix 2 to this Notification;

"Market 3" means the area covered by the BT exchanges set out at Appendix 3 to this Notification;

"Next Generation Access Services" means wholesale broadband access services provided by BT over an access network comprised wholly or partly of optical elements which

is capable of offering speeds greater than those that can be provided over an access network comprised of end-to-end copper connections;

"Ofcom" means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002;

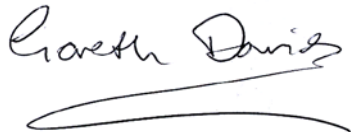
"Third Party" means either:

(a) a person providing a Public Electronic Communications Network; or

(b) a person providing a Public Electronic Communications Service.

"United Kingdom" has the meaning given to it in the Interpretation Act 1978 (c.30).

24. The Schedules and Appendixes to this Notification shall form part of this Notification.

A handwritten signature in dark ink, appearing to read 'Gareth Davies', with a long, sweeping horizontal line underneath it.

Gareth Davies
Competition Policy Director

A person authorised by Ofcom under paragraph 18 of the Schedule to the Office of Communications Act 2002

3 December 2010

SCHEDULE 1 – BT CONDITIONS IN MARKET 1

The SMP services conditions imposed on BT under sections 45, 87 and 88 of the Communications Act 2003 as a result of the analysis of Market 1 in which BT has significant market power (“SMP conditions”)

Part 1: Application, definitions and interpretation relating to the SMP conditions in Part 2

1. These conditions shall apply to the markets for wholesale broadband access in Market 1 (**“the Market”**).

2. In this Schedule:

“Access Charge Change Notice” has the meaning given to it in Condition EAA4;

“Access Contract” means:

(i) a contract for the provision by the Dominant Provider to another person of Network Access to the Dominant Provider’s Electronic Communications Network;

(ii) a contract under which Associated Facilities in relation to the Dominant Provider’s Public Electronic Communications Network are made available by the Dominant Provider to another person;

“the Act” means the Communications Act 2003 (c. 21);

“Dominant Provider” means British Telecommunications plc whose registered company number is 1800000, and any British Telecommunications plc subsidiary or holding company, or any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006;

“Network Component” means, to the extent they are used in the market identified at paragraph 6(a) of this Notification, the network components specified in any direction given by Ofcom from time to time for the purpose of these Conditions;

“Ofcom” means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002;

“Reference Offer” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract.

“Transfer Charge” means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within Market 1 and the use of Network Components in Market 1;

“Usage Factor” means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in the Notification and paragraph 2 above and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The SMP conditions

Condition EAA1 – Requirement to provide Network Access on reasonable request

EAA1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

EAA1.2 The provision of Network Access in accordance with paragraph EAA1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms, and conditions and charges and on such terms, and conditions and charges as Ofcom may from time to time direct.

EAA1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EAA2 – Requirement not to unduly discriminate

EAA2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

EAA2.2 In this Condition the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition EAA3 – Requirement to publish a Reference Offer

EAA3.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

EAA3.2 Subject to paragraph EAA3.9 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of the network);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;
- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:
 - (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
 - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
 - (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

- (iv) a definition and limitation of liability and indemnity; and
- (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location); and
- (n) the standard terms and conditions for the provision of Network Access.
- (o) the amount applied to:
 - (i) each Network Component used in providing Network Access with the relevant Usage Factors; and
 - (ii) the Transfer Charge for each Network Component or combination of Network Components described above,
 reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

EAA3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraph EAA3.2 (a)-(o).

EAA3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date this Condition enters into force.

EAA3.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EAA3.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

EAA3.8 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested). The provision of such a copy of the Reference Offer may be subject to a reasonable charge.

EAA3.9 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

EAA3.10 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

EAA 3.11 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EAA4 – Requirement to notify charges, terms and conditions

EAA4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EAA4.2 Except where new or amended charges are directed or determined by Ofcom or where otherwise provided in this Condition, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition EAA1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an “**Access Charge Change Notice**”) not less than 28 days before any such amendment comes into effect.

EAA4.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider's current Reference Offer of the charges, terms and conditions associated with the provision of that Network Access;
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the “**effective date**”);
- (d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and
- (e) the information specified in sub-paragraph (d) above with respect to that Network Access to which that paragraph applies.

EAA4.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date referred to in Condition EAA4.3 above.

EAA4.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
 - (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,
- in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs EAA4.3(a)-(e).

Condition EAA5 – Transparency as to quality of service

EAA5.1 The Dominant Provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider, in such manner and form as Ofcom may from time to time direct.

EAA5.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EAA6 – Requirement to notify technical information

EAA6.1 Except where Ofcom consents otherwise, where the Dominant Provider:

- (a) proposes to provide Network Access covered by Condition EAA1, the terms and conditions for which comprise new:
 - (i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);
 - (ii) locations of the points of Network Access; or
 - (iii) technical standards (including any usage restrictions and other security issues), or
- (b) proposes to amend an existing Access Contract covered by Condition EAA1 by modifying the terms and conditions listed in paragraphs EAA6.1(a)(i) to (iii) on which the Network Access is provided, the Dominant Provider shall publish a written notice (the '**Notice**') of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect. This obligation for prior notification will not apply where new or amended terms and conditions are directed or determined by Ofcom or are required by a notification or an enforcement notification given by Ofcom under sections 94 or 95 of the Act.

EAA6.2 The Dominant Provider shall ensure that the Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions; and
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "**effective date**").

EAA6.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date referred to in Condition EAA6.3 above.

EAA6.4 Publication referred to in paragraph EAA6.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition EAA1. The provision of such a copy of Notice may be subject to a reasonable charge.

Condition EAA7 – Basis of charges

EAA7.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition EAA1 is reasonably derived from the costs of provision based on a forward looking long-run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

EAA7.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by Condition EAA1 is for a service which is subject to a charge control, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirements of paragraph EAA7.1 above.

EAA7.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

SCHEDULE 2 – BT CONDITIONS IN MARKET 2

The SMP services conditions imposed on BT under sections 45, 87 and 88 of the Communications Act 2003 as a result of the analysis of Market 2 in which BT has significant market power (“SMP conditions”)

Part 1: Application, definitions and interpretation relating to the SMP conditions in Part 2

1. These conditions shall apply to the markets for wholesale broadband access in Market 2 (“**the Market**”).

2. In this Schedule:

“**Access Charge Change Notice**” has the meaning given to it in Condition EAA11;

“**Access Contract**” means:

(i) a contract for the provision by the Dominant Provider to another person of Network Access to the Dominant Provider’s Electronic Communications Network;

(ii) a contract under which Associated Facilities in relation to the Dominant Provider’s Public Electronic Communications Network are made available by the Dominant Provider to another person;

“**the Act**” means the Communications Act 2003 (c. 21);

“**Dominant Provider**” means British Telecommunications plc whose registered company number is 1800000, and any British Telecommunications plc subsidiary or holding company, or any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006;

“**Network Component**” means to the extent they are used in the market identified at paragraph 6(b) of this Notification, the network components specified in any direction given by Ofcom from time to time for the purpose of these Conditions

“**Ofcom**” means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002;

“**Reference Offer**” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract.

“**Transfer Charge**” means the charge or price that is applied, or deemed to be applied, by the Dominant Provider to itself for the use or provision of an activity or group of activities. For the avoidance of doubt such activities or group of activities include, amongst other things, products and services provided from, to or within Market 2 and the use of Network Components in Market 2;

“**Usage Factor**” means the average usage by any Communications Provider (including the Dominant Provider itself) of each Network Component in using or providing a particular product or service or carrying out a particular activity.

3. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in the Notification and paragraph 2 above and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The SMP conditions

Condition EAA8 – Requirement to provide Network Access on reasonable request

EAA8.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

EAA8.2 The provision of Network Access in accordance with paragraph EAA8.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms and conditions and charges and on such terms and conditions and charges as Ofcom may from time to time direct.

EAA8.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EAA9 – Requirement not to unduly discriminate

EAA9.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

EAA9.2 In this Condition the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition EAA10 – Requirement to publish a Reference Offer

EAA10.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

EAA10.2 Subject to paragraph EAA10.9 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of the network);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;
- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:
 - (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
 - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;
 - (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;

- (iv) a definition and limitation of liability and indemnity; and
- (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location); and
- (n) the standard terms and conditions for the provision of Network Access.
- (o) the amount applied to:
 - (i) each Network Component used in providing Network Access with the relevant Usage Factors; and
 - (ii) the Transfer Charge for each Network Component or combination of Network Components described above,
 reconciled in each case to the charge payable by a Communications Provider other than the Dominant Provider.

EAA10.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraph EAA10.2(a)-(o).

EAA10.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date this Condition enters into force.

EAA10.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EAA10.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

EAA10.8 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested). The provision of such a copy of the Reference Offer may be subject to a reasonable charge.

EAA10.9 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

EAA10.10 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

EAA10.11 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EAA11 – Requirement to notify charges, terms and conditions

EAA11.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EAA11.2 Except where new or amended charges are directed or determined by Ofcom or where otherwise provided in this Condition, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition EAA8 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an “**Access Charge Change Notice**”) not less than 28 days before any such amendment comes into effect.

EAA11.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s current Reference Offer of the charges, terms and conditions associated with the provision of that Network Access;
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the “**effective date**”);
- (d) the current and proposed new charge and the relevant Usage Factors applied to each Network Component comprised in that Network Access, reconciled in each case with the current or proposed new charge; and
- (e) the information specified in sub-paragraph (d) above with respect to that Network Access to which that paragraph applies.

EAA11.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date referred to in Condition EAA11.3 above.

EAA11.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraph EAA11.3(a)-(e).

Condition EAA12 – Transparency as to quality of service

EAA12.1 The Dominant Provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider, in such manner and form as Ofcom may from time to time direct.

EAA12.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EAA13 – Requirement to publish technical information

EAA13.1 Except where Ofcom consents otherwise, where the Dominant Provider:

- (a) proposes to provide Network Access covered by Condition EAA8, the terms and conditions for which comprise new:
 - (i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);
 - (ii) locations of the points of Network Access; or
 - (iii) technical standards (including any usage restrictions and other security issues),
 or
- (b) proposes to amend an existing Access Contract covered by Condition EAA8 by modifying the terms and conditions listed in paragraph EAA13.1(a)(i) to (iii) on which the Network Access is provided, the Dominant Provider shall publish a written notice (the '**Notice**') of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect. This obligation for prior notification will not apply where new or amended terms and conditions are directed or determined by Ofcom or are required by a notification or an enforcement notification given by Ofcom under sections 94 or 95 of the Act.

EAA13.2 The Dominant Provider shall ensure that the Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions; and
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "**effective date**").

EAA13.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date referred to in Condition EAA13.2 above.

EAA13.4 Publication referred to in paragraph EAA13.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition EAA 8. The provision of such a copy of Notice may be subject to a reasonable charge.

Condition EAA14 – Basis of charges

EAA14.1 Unless Ofcom directs otherwise from time to time, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that each and every charge offered, payable or proposed for Network Access covered by Condition EAA8 is reasonably derived from the costs of provision based on a forward looking long-run incremental cost approach and allowing an appropriate mark up for the recovery of common costs including an appropriate return on capital employed.

EAA14.2 For the avoidance of any doubt, where the charge offered, payable or proposed for Network Access covered by paragraph EAA8 is for a service which is subject to a charge

control, the Dominant Provider shall secure, and shall be able to demonstrate to the satisfaction of Ofcom, that such a charge satisfies the requirements of paragraph EAA14.1 above.

EAA14.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

SCHEDULE 3 – KCOM CONDITIONS IN THE HULL AREA

The SMP services conditions imposed on KCOM under sections 45 and 87 of the Communications Act 2003 as a result of the analysis of the Hull area in which KCOM has significant market power (“SMP conditions”)

Part 1: Application, definitions and interpretation relating to the SMP conditions in Part 2

1. These conditions shall apply to the market for wholesale broadband access in the Hull area (“**the Market**”).

2. In this Schedule:

“**Access Charge Change Notice**” has the meaning given to it in Condition EBB4;

“**Access Contract**” means:

(i) a contract for the provision by the Dominant Provider to another person of Network Access to the Dominant Provider’s Electronic Communications Network;

(ii) a contract under which Associated Facilities in relation to the Dominant Provider’s Public Electronic Communications Network are made available by the Dominant Provider to another person;

“**the Act**” means the Communications Act 2003 (c. 21);

“**Dominant Provider**” means KCOM Group plc whose registered company number is 2150618, and including any of its subsidiaries or holding companies, or any subsidiary of such holding companies, all as defined by section 1159 of the Companies Act 2006;

“**Hull area**” means the area defined as the ‘Licensed Area’ in the licence granted on 30 November 1987 by the Secretary of State under section 7 of the Telecommunications Act 1984 to Kingston upon Hull City Council and Kingston Communications (Hull) plc (now known as KCOM);

“**Ofcom**” means the Office of Communications as established pursuant to section 1(1) of the Office of Communications Act 2002;

“**Reference Offer**” means the terms and conditions on which the Dominant Provider is willing to enter into an Access Contract.

3. Except insofar as the context otherwise requires, words or expressions shall have the meaning assigned to them in the Notification and paragraph 2 above and otherwise any word or expression shall have the same meaning as it has in the Act.

4. The Interpretation Act 1978 shall apply as if each of the conditions were an Act of Parliament.

5. Headings and titles shall be disregarded.

Part 2: The SMP conditions

Condition EBB1 – Requirement to provide Network Access on reasonable request

EBB1.1 Where a Third Party reasonably requests in writing Network Access, the Dominant Provider shall provide that Network Access. The Dominant Provider shall also provide such Network Access as Ofcom may from time to time direct.

EBB1.2 The provision of Network Access in accordance with paragraph EBB1.1 shall occur as soon as reasonably practicable and shall be provided on fair and reasonable terms and conditions (not including charges) and on such terms and conditions as Ofcom may from time to time direct.

EBB1.3 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EBB2 – Requirement not to unduly discriminate

EBB2.1 The Dominant Provider shall not unduly discriminate against particular persons or against a particular description of persons, in relation to matters connected with Network Access.

EBB2.2 In this Condition the Dominant Provider may be deemed to have shown undue discrimination if it unfairly favours to a material extent an activity carried on by it so as to place at a competitive disadvantage persons competing with the Dominant Provider.

Condition EBB3 – Requirement to publish a Reference Offer

EBB3.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish a Reference Offer and act in the manner set out below.

EBB3.2 Subject to paragraph EBB3.9 below, the Dominant Provider shall ensure that a Reference Offer in relation to the provision of Network Access includes at least the following:

- (a) a description of the Network Access to be provided, including technical characteristics (which shall include information on network configuration where necessary to make effective use of the network);
- (b) the locations of the points of Network Access;
- (c) the technical standards for Network Access (including any usage restrictions and other security issues);
- (d) the conditions for access to ancillary, supplementary and advanced services (including operational support systems, information systems or databases for pre-ordering, provisioning, ordering, maintenance and repair requests and billing);
- (e) any ordering and provisioning procedures;
- (f) relevant charges, terms of payment and billing procedures;
- (g) details of interoperability tests;
- (h) details of maintenance and quality as follows:
 - (i) specific time scales for the acceptance or refusal of a request for supply and for completion, testing and hand-over or delivery of services and facilities, for provision of support services (such as fault handling and repair);
 - (ii) service level commitments, namely the quality standards that each party must meet when performing its contractual obligations;

- (iii) the amount of compensation payable by one party to another for failure to perform contractual commitments;
- (iv) a definition and limitation of liability and indemnity; and
- (v) procedures in the event of alterations being proposed to the service offerings, for example, launch of new services, changes to existing services or change to prices;
- (i) details of any relevant intellectual property rights;
- (j) a dispute resolution procedure to be used between the parties;
- (k) details of duration and renegotiation of agreements;
- (l) provisions regarding confidentiality of non-public parts of the agreements;
- (m) rules of allocation between the parties when supply is limited (for example, for the purpose of co-location); and
- (n) the standard terms and conditions for the provision of Network Access.

EBB3.3 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in a Reference Offer in relation to Network Access provided to any other person, the Dominant Provider shall ensure that it publishes a Reference Offer in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in paragraphs EBB3.2(a)-(n).

EBB3.4 The Dominant Provider shall, within one month of the date that this Condition enters into force, publish a Reference Offer in relation to any Network Access that it is providing as at the date this Condition enters into force.

EBB3.5 The Dominant Provider shall update and publish the Reference Offer in relation to any amendments or in relation to any further Network Access provided after the date this Condition enters into force.

EBB3.6 Publication referred to above shall be effected by:

- (a) placing a copy of the Reference Offer on any relevant website operated or controlled by the Dominant Provider; and
- (b) sending a copy of the Reference Offer to Ofcom.

EBB3.8 The Dominant Provider shall send a copy of the current version of the Reference Offer to any person at that person's written request (or such parts which have been requested). The provision of such a copy of the Reference Offer may be subject to a reasonable charge.

EBB3.9 The Dominant Provider shall make such modifications to the Reference Offer as Ofcom may direct from time to time.

EBB3.10 The Dominant Provider shall provide Network Access at the charges, terms and conditions in the relevant Reference Offer and shall not depart therefrom either directly or indirectly.

EBB3.11 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EBB4 – Requirement to notify charges, terms and conditions

EBB4.1 Except in so far as Ofcom may otherwise consent in writing, the Dominant Provider shall publish charges, terms and conditions and act in the manner set out below.

EBB4.2 Except where new or amended charges are directed or determined by Ofcom or where otherwise provided in this Condition, the Dominant Provider shall send to Ofcom and to every person with which it has entered into an Access Contract covered by Condition EBB1 a written notice of any amendment to the charges, terms and conditions on which it provides Network Access or in relation to any charges, terms and conditions for new Network Access (an “**Access Charge Change Notice**”) not less than 28 days before any such amendment comes into effect.

EBB4.3 The Dominant Provider shall ensure that an Access Charge Change Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider’s current Reference Offer of the charges, terms and conditions associated with the provision of that Network Access; and
- (c) the date on which or the period for which any amendments to charges, terms and conditions will take effect (the “**effective date**”).

EBB4.4 The Dominant Provider shall not apply any new charge, term or condition identified in an Access Charge Change Notice before the effective date referred to in Condition EBB4.3 above.

EBB4.5 To the extent that the Dominant Provider provides to itself Network Access that:

- (i) is the same, similar or equivalent to that provided to any other person; or
- (ii) may be used for a purpose that is the same, similar or equivalent to that provided to any other person,

in a manner that differs from that detailed in an Access Charge Change Notice in relation to Network Access provided to any other person,

the Dominant Provider shall ensure that it sends to Ofcom an Access Charge Change Notice in relation to the Network Access that it provides to itself which includes, where relevant, at least those matters detailed in Conditions EBB4.3(a)-(c).

Condition EBB5 – Transparency as to quality of service

EBB5.1 The Dominant Provider shall publish all such information for the purposes of securing transparency as to the quality of service in relation to Network Access provided by the Dominant Provider, in such manner and form as Ofcom may from time to time direct.

EBB5.2 The Dominant Provider shall comply with any direction Ofcom may make from time to time under this Condition.

Condition EBB6 – Requirement to notify technical information

EBB6.1 Except where Ofcom consents otherwise, where the Dominant Provider:

(a) proposes to provide Network Access covered by Condition EBB1, the terms and conditions for which comprise new:

- (i) technical characteristics (including information on network configuration where necessary to make effective use of the Network Access);
 - (ii) locations of the points of Network Access; or
 - (iii) technical standards (including any usage restrictions and other security issues),
- or

(b) proposes to amend an existing Access Contract covered by Condition EBB1 by modifying the terms and conditions listed in paragraph EBB6.1(a)(i) to (iii) on which the Network Access is provided, the Dominant Provider shall publish a written notice (the '**Notice**') of the new or amended terms and conditions within a reasonable time period but not less than 90 days before either the Dominant Provider enters into an Access Contract to provide the new Network Access or the amended terms and conditions of the existing Access Contract come into effect. This obligation for prior notification shall not apply where new or amended terms and conditions are directed or determined by Ofcom or are required by a notification or an enforcement notification given by Ofcom under sections 94 or 95 of the Act.

EBB6.2 The Dominant Provider shall ensure that the Notice includes:

- (a) a description of the Network Access in question;
- (b) a reference to the location in the Dominant Provider's Reference Offer of the relevant terms and conditions; and
- (c) the date on which or the period for which the Dominant Provider may enter into an Access Contract to provide the new Network Access or any amendments to the relevant terms and conditions will take effect (the "**effective date**").

EBB6.3 The Dominant Provider shall not enter into an Access Contract containing the terms and conditions identified in the Notice or apply any new relevant terms and conditions identified in the Notice before the effective date as referred to in Condition EBB6.2 above.

EBB6.4 Publication referred to in paragraph EBB6.1 shall be effected by:

- (a) placing a copy of the Notice on any relevant website operated or controlled by the Dominant Provider;
- (b) sending a copy of the Notice to Ofcom; and
- (c) sending a copy of the Notice to any person at that person's written request, and where the Notice identifies a modification to existing relevant terms and conditions, to every person with which the Dominant Provider has entered into an Access Contract covered by Condition EBB1. The provision of such a copy of Notice may be subject to a reasonable charge.

Appendix 1

BT Exchanges In Market 1

3,389 BT Exchanges

[illegible]

EMGOSBE, EMGPONT, EMGRETC, EMGRETL, EMGRTFO, EMGRTGL, EMGTTHA,
 EMGUYHI, EMHACKL, EMHECKI, EMHLLTO, EMHNGTN, EMHOARC, EMHOLSJ,
 EMHOLSM, EMHRLST, EMHRRBY, EMHTHER, EMHUBBE, EMHUGAR, EMHULLA,
 EMHUSBB, EMINGOL, EMKBWOR, EMKCLIF, EMKGWOR, EMKINOU, EMKIRKL,
 EMKIRTO, EMKISLI, EMKMBLT, EMKNIPT, EMKNRSS, EMLANGR, EMLBENN,
 EMLERRE, EMLNGBU, EMLOWDH, EMLSTEE, EMMADW, EMMANEA, EMMARCH,
 EMMARKB, EMMARSM, EMMEDBO, EMMELBO, EMMERES, EMMMLCHA, EMMMLTON,
 EMMNTON, EMMORCO, EMMRTON, EMNEBOR, EMNETHB, EMNEWLE, EMNEWTO,
 EMNLUFF, EMNWTON, EMOLDLE, EMOSSGA, EMOUNDL, EMPADVE, EMPAPSA,
 EMPARWI, EMPATTI, EMPAULE, EMPEATL, EMPELAS, EMPNCHB, EMPREST,
 EMRDDEE, EMRGATE, EMROCKI, EMROTTB, EMRRSBB, EMSBSEY, EMSCALF,
 EMSCREM, EMSHARD, EMSILVE, EMSOMER, EMSPLSB, EMSRAUC, EMSRFLT,
 EMSTICK, EMSTKEG, EMSUBGE, EMSUDBU, EMSUTER, EMSUTSJ, EMSUTTO,
 EMSWATN, EMSWSHD, EMTERSJ, EMTGGBY, EMTHIST, EMTHORP, EMTHRNY,
 EMTHURL, EMTILTO, EMTNGND, EMTRVES, EMTTYDD, EMTWCRO, EMUPPIN,
 EMUPWLL, EMWALGR, EMWALSA, EMWARBY, EMWDHOU, EMWELFO, EMWELNY,
 EMWHAPL, EMWHISS, EMWHTTO, EMWINST, EMWINWI, EMWIOTH, EMWISSM,
 EMWLTHA, EMWLVEY, EMWMNDH, EMWNFLT, EMWOLEY, EMWOODB, EMWSFRD,
 EMWYSWO, EMYARDL, EMYOULG, ESABE, ESABF, ESABL, ESABN, ESABR, ESABY,
 ESACB, ESACG, ESAIR, ESALM, ESALY, ESAMU, ESANC, ESANS, ESARH, ESARN,
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 ESCAM, ESCAN, ESCAT, ESCAY, ESCER, ESCHI, ESCLD, ESCLF, ESCLH, ESCLO,
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 ESDUG, ESDUK, ESDUS, ESEAL, ESEAR, ESEDD, ESEDZ, ESELI, ESERR, ESESS,
 ESETB, ESETV, ESEYE, ESFAR, ESFER, ESFET, ESFIN, ESFLK, ESFOL, ESFOR,
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 ESTRY, ESTUM, ESUPL, ESWAL, ESWES, ESWHK, ESWHS, ESWLI, ESYAR, ESYET,
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MRPBY, MRPIC, MRRSP, MRSUT, MRTAD, MRTID, MRWNC, MYADD, MYAIR, MYALD, MYAMP, MYAPP, MYARN, MYART, MYBAG, MYBBY, MYBEE, MYBEN, MYBIL, MYBIR, MYBKA, MYBKE, MYBLU, MYBNS, MYBOL, MYBPI, MYBPM, MYBPW, MYBRE, MYBRN, MYBUB, MYBYP, MYCAM, MYCAW, MYCLO, MYCOL, MYCON, MYCOP, MYCOX, MYCRA, MYDAL, MYDAR, MYDUN, MYEAO, MYEAT, MYELV, MYESC, MYFLM, MYFLO, MYFLX, MYGAT, MYGIL, MYGRA, MYGRE, MYGRG, MYHAC, MYHIR, MYHLI, MYHLM, MYHLP, MYHMB, MYHOV, MYHOW, MYHRW, MYHSM, MYHUB, MYHUG, MYHUM, MYKET, MYKIL, MYKMP, MYKMS, MYKMZ, MYLAN, MYLAS, MYLEC, MYLIN, MYLOC, MYLON, MYMAR, MYMAS, MYMID, MYMLB, MYMMB, MYNCV, MYNGR, MYNND, MYNSY, MYNUN, MYPBG, MYPTN, MYRAM, MYREE, MYRIC, MYRIL, MYRUF, MYRWC, MYSAW, MYSBG, MYSDN, MYSET, MYSHF, MYSKR, MYSKS, MYSDN, MYSPD, MYSPU, MYSTI, MYSTO, MYSYK, MYTHR, MYTHW, MYTIB, MYTOC, MYTOL, MYWAT, MYWBG, MYWEN, MYWEW, MYWHE, MYWHL, MYWIL, MYWIT, MYWLT, MYWOH, NDALD, NDALL, NDAPP, NDASH, NDBEC, NDBEN, NDBET, NDBID, NDBOU, NDBRD, NDBRE, NDBRG, NDBRI, NDBRK, NDBUR, NDBUX, NDCGA, NDCHA, NDCHD, NDCHI, NDCHL, NDCOW, NDCRA, NDCRW, NDCST, NDDHI, NDDOD, NDDPA, NDEAS, NDECH, NDEGE, NDELH, NDELM, NDEPE, NDETC, NDFEL, NDFLI, NDFOR, NDFRA, NDFRI, NDFRM, NDGOD, NDGOU, NDGUE, NDHAD, NDHAK, NDHAL, NDHAR, NDHDO, NDHED, NDHGR, NDHHA, NDHOL, NDHRO, NDHST, NDHUN, NDIDE, NDIHI, NDISF, NDKNO, NDLAM, NDLAN, NDLEN, NDLEY, NDLYD, NDLYM, NDMAR, NDMAY, NDMIL, NDMTH, NDNEI, NDNEW, NDNIN, NDNOR, NDNUT, NDOTH, NDPEA, NDPEN, NDPET, NDPLA, NDPLU, NDRGR, NDROB, NDROT, NDSAH, NDSER, NDSEI, NDSEL, NDSER, NDSGO, NDSHA, NDSHO, NDSHP, NDSMA, NDSMB, NDSMI, NDSTA, NDSTP, NDSVA, NDTEY, NDTIC, NDWAD, NDWAT, NDWIN, NDWIT, NDWOO, NDWOR, NDWYE, NEAC, NEAL, NEALD, NEALH, NEALS, NEASG, NEBC, NEBED, NEBEL, NEBGM, NEBHM, NEBLA, NEBLS, NEBML, NEBNG, NEBRT, NEBU, NEBW, NEBWS, NECAP, NECB, NECBN, NECFD, NECHA, NECI, NECOD, NECOT, NECSN, NECST, NECTN, NEDN, NEDP, NEEB, NEEGT, NEEHL, NEELA, NEEN, NEFEL, NEFSL, NEFT, NEGLA, NEGMT, NEGND, NEGNFD, NEGRE, NEGS, NEGTD, NEGWT, NEHAR, NEHAS, NEHAY, NEHDL, NEHH, NEHID, NEHPL, NEHR, NEHSY, NEHTR, NEHWH, NEJV, NEKBW, NEKDR, NEKF, NEKP, NELEB, NELK, NELL, NELM, NELO, NELOF, NELT, NEMIL, NEMTD, NENB, NENCT, NENH, NENR, NEOM, NEON, NEPB, NEPG, NEPX, NERB, NERD, NEREH, NERFD, NERHB, NERM, NESBY, NESDP, NESEH, NESG, NESGT, NESHB, NESK, NESLN, NESLS, NESLY, NESNS, NESSDS, NESTA, NESUT, NETL, NETP, NETW, NEUL, NEULM, NEWF, NEWGM, NEWH, NEWHD, NEWLL, NEWLW, NEWSNS, NEWO, NEWOP, NEWOR, NEWR, NEWU, NEWV, NEWYL, NIAA, NIAE, NIAFN, NIAGH, NIAH, NIAL, NIAN, NIAR, NIAY, NIBCO, NIBDY, NIBEK, NIBGL, NIBGY, NIBH, NIBK, NIBKB, NIBKR, NIBL, NIBMS, NIBN, NIBNA, NIBNB, NIBRA, NIBRN, NIBRS, NIBSB, NIBT, NIBW, NIBWR, NIBY, NICA, NICB, NICD, NICDN, NICE, NICG, NICGR, NICH, NICL, NICM, NICMG, NICRH, NICRS, NICSD, NICSI, NICUS, NICW, NIDBO, NIDK, NIDL, NIDM, NIDMA, NIDMR, NIDNM, NIDOD, NIDPT, NIDQ, NIDR, NIDRY, NIDY, NIDYN, NIFCT, NIFH, NIFIN, NIFN, NIFY, NIGF, NIGFD, NIGM, NIGN, NIGT, NIGVA, NIGWY, NIGY, NIHB, NIIM, NIIT, NIJP, NIKA, NIKH, NIKL, NIKN, NIKS, NIKTS, NIKVY, NIKY, NIKYL, NILA, NILGL, NILI, NILL, NIMA, NIME, NIMFD, NIMH, NIMM, NIMO, NIMOY, NIMTN, NIMZ, NINB, NINH, NIPE, NIPP, NIPR, NIPS, NIPT, NIPVE, NIPY, NIRD, NIRL, NIRLN, NIRN, NIRS, NISD, NISEA, NISF, NISP, NISTF, NISTN, NISW, NITB, NITC, NITG, NITO, NITP, NITR, NIWD, NIWP, NIWT, NSABC, NSABL, NSABO, NSADV, NSAGR, NSAGY, NSALB, NSALF, NSALG, NSALR, NSALT, NSALV, NSANG, NSANS, NSAPP, NSARI, NSASC, NSASN, NSASR, NSASS, NSATB, NSATL, NSAVI, NSAVR, NSBAC, NSBAD, NSBAY, NSBCS, NSBDI, NSBEA, NSBEN, NSBER, NSBET, NSBFD, NSBFR, NSBIG, NSBIR, NSBIX, NSBLD, NSBLI, NSBLT, NSBMC, NSBMD, NSBMR, NSBNF, NSBNS, NSBOG, NSBOW, NSBRA, NSBRK, NSBRN, NSBRR, NSBRV, NSBRY, NSBSY, NSBTS, NSBVO, NSBVS, NSCAB, NSCAL, NSCAN, NSCAR, NSCAT, NSCAW, NSCBK, NSCBS, NSCBY, NSCGM, NSCHL, NSCLN, NSCLO, NSCNI, NSCPC, NSCPY, NSCRB, NSCRN, NSCRR, NSCRU, NSCRY, NSCTI, NSCTN, NSCTS, NSCTW, NSCTY, NSCUM, NSCUN, NSCWY, NSDAV, NSDBG, NSDBL,

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 STALDBY, STASHST, STBBSTK, STBDWSR, STBERER, STBEULI, STBMSTR,
 STBORTN, STBRDCK, STBRFLD, STBRGTN, STBRMDN, STBRNGR, STBROCK,
 STBSETT, STBUCKH, STBUCKN, STBURLY, STCADNM, STCERNA, STCHBTN,
 STCHLDO, STCHOLD, STCHSTN, STCOLDC, STCOOMB, STCORFC, STCRANB,
 STDONHD, STDROXF, STDURLY, STEARLD, STEASTE, STEASTK, STEASTS,
 STFARLY, STFONTM, STFOVNT, STGRATY, STHANLY, STHAZEB, STHINDN,
 STHRSLY, STHRSTT, STHTHDN, STICHAB, STIDSTN, STKINGS, STLCKLY, STLNKHT,
 STLONGB, STLONGP, STLYNST, STMARNL, ST MARTN, ST MARTX, STMCHDV,
 STMDNTN, STMERE, ST MIDWD, STMILAB, STMILSA, STMORDN, STNETBY, STNETHR,
 STOWSBY, STOXNWD, STPIDTH, STPUDTN, STPWRST, STROCKB, STROPLY,
 STSHRTN, STSPSLT, STSSCOT, STSTMBN, STSTOKB, STSTPFD, STSTUDL,
 STSTURM, STSTURN, STSWAY, STTEFFT, STTISBY, STTOLRY, STTRTHN, STUPAVN,
 STWALOP, STWESTL, STWESTW, STWEYHL, STWHPSH, STWHTLY, STWINSL,
 STWITCH, STWLTON, STWRTHM, SWAAI, SWAAV, SWAEN, SWAGL, SWAPO, SWBJY,
 SWCG, SWCOO, SWCTE, SWCWN, SWDAQ, SWDCP, SWDRW, SWDWQ, SWFBZ,
 SWFCJ, SWGWN, SWGWR, SWHV, SWJOH, SWKW, SWLAK, SWLAS, SWLCA, SWLCY,
 SWLDR, SWLDV, SWLGC, SWLHY, SWLJV, SWLKB, SWLKD, SWLKX, SWLKY, SWLLF,
 SWLLM, SWLLP, SWLLU, SWLLW, SWLNN, SWLPI, SWLQW, SWLY, SWLYA, SWLYJ,
 SWLYW, SWMAD, SWMDX, SWMF, SWMGX, SWMNF, SWMWY, SWMYE, SWMYG,
 SWMYU, SWNB, SWNDO, SWNDU, SWNEN, SWNES, SWNNA, SWNTD, SWPBL,
 SWPEC, SWPEV, SWPHX, SWPM, SWPMQ, SWPOM, SWPQS, SWPRU, SWPTM,
 SWPUN, SWPYH, SWQCT, SWQFJ, SWQH, SWQKL, SWQOB, SWQOE, SWRAG,
 SWRHA, SWRLS, SWRSO, SWRSV, SWSAS, SWSAW, SWSFJ, SWSMX, SWSNI,
 SWSSQ, SWSVB, SWTAF, SWTB, SWTDE, SWTEK, SWTFS, SWTLL, SWTLU, SWTRH,
 SWTSA, SWTUC, SWUAH, SWUAZ, SWUCW, SWUGI, SWUGU, SWUHN, SWUTK,
 SWVLD, SWVW, SWWCP, SWWHT, SWWJK, SWXSX, SWXTP, SWXUU, SWYDU,
 SWYRO, SWZEN, SWZFR, SWZIU, SWZII, SWZKA, SWZLD, SWZMX, SWZNR, SWZNT,
 SWZWJ, SWZYY, SWZZH, THAG, THBC, THBFD, THBL, THBRK, THBT, THCH, THCHD,
 THCHN, THCKN, THCL, THCMN, THCP, THCY, THDF, THDG, THDM, THED, THEI,
 THFM, THFN, THFTG, THGO, THGRS, THHC, THHD, THHDY, THHE, THHF, THHN,
 THHRJ, THHS, THIN, THKB, THKC, THKE, THLM, THLSN, THMD, THMO, THMS, THNB,
 THNE, THNL, THOK, THOL, THOV, THP, THPC, THPM, THPS, THRD, THRO, THSBN,
 THSCR, THSE, THSL/UD, THTH, THTI, THTV, THUB, THWA, THWI, THWN, THWT,
 WMADB, WMADM, WMARL, WMASN, WMAST, WMAUH, WMBAR, WMBBN, WMBDY,
 WMBET, WMBGM, WMBIS, WMBLA, WMBLO, WMBLS, WMBRA, WMCAM, WMCBM,
 WMCHA, WMCHM, WMCHS, WMCLO, WMCOL, WMCOT, WMCRO, WMCUT, WMDAP,
 WMECC, WMECK, WMELM, WMEND, WMFAD, WMFIE, WMGNO, WMGRE, WMHAL,
 WMHAM, WMHAN, WMHAR, WMHAV, WMHIL, WMHIM, WMHOL, WMHSW, WMINK,
 WMIPN, WMKEM, WMKLT, WMKNI, WMLEI, WMLOW, WMMAD, WMMIC, WMOAK,

[illegible]

WSLOS, WSLOT, WSLUI, WSLUS, WSMAB, WSMAC, WSMAH, WSMAY, WSMIN,
 WSMIT, WSMOC, WSMOD, WSMOF, WSMON, WSMOS, WSMOU, WSMUI, WSNEA,
 WSNEB, WSNEC, WSNEG, WSNEL, WSNES, WSOCH, WSOLD, WSORM, WSPAL,
 WSPAN, WSPAR, WSPAT, WSPEN, WSPIN, WSPIR, WSPOA, WSPOC, WSPOE,
 WSPOP, WSPOR, WSPOW, WSRHU, WSRIN, WSROC, WSSAL, WSSAN, WSSAQ,
 WSSCA, WSSHI, WSSKI, WSSKL, WSSLI, WSSOE, WSSOK, WSSOR, WSSTD, WSSTT,
 WSSTU, WSSYM, WSTAB, WSTAH, WSTAR, WSTAT, WSTAY, WSTHL, WSTIG, WSTIN,
 WSTIR, WSTOB, WSTOD, WSTOR, WSTOW, WSTUR, WSTWE, WSTWY, WSTYN,
 WSULV, WSUPL, WSWAT, WSWHB, WSWHH, WSWHI, WSWIG, WWANST, WWASHB,
 WWASHC, WWASHR, WWASHW, WWBAMP, WWBAWT, WWBCAU, WWBCKL,
 WWBCKN, WWBCLY, WWBDON, WWBEAF, WWBEAW, WWBERE, WWBFAS, WWBIGB,
 WWBKNO, WWBLAG, WWBNYM, WWBOSC, WWBOW, WWBRAN, WWBRAY,
 WWBRDY, WWBREA, WWBROA, WWBROM, WWBRUL, WWBSTM, WWBSTW,
 WWBTON, WWBTOR, WWBURR, WWCAME, WWCANW, WWCARD, WWCARY,
 WWCBIS, WWCKKW, WWCFIT, WWCHAG, WWCHID, WWCHIS, WWCHIT, WWCHIV,
 WWCHLL, WWCHRI, WWCHRM, WWCHUL, WWCLAY, WWCLOV, WWCMAC,
 WWCMAR, WWCOAD, WWCOLY, WWCONS, WWCOPP, WWCORN, WWCORS,
 WWCORT, WWCPOL, WWCRAD, WWCRAL, WWCRAN, WWCROY, WWCRWC,
 WWCSTN, WWCWIC, WWDITT, WWDOWB, WWDOLT, WWDOWN, WWDREW,
 WWDULV, WWDUNS, WWEALL, WWEVER, WWEXBO, WWEXFO, WWEXMN,
 WWFARW, WWFENI, WWFILL, WWFOWE, WWFRAD, WWFROG, WWGARA, WWGERM,
 WWGHAM, WWGRAM, WWGUNN, WWHARB, WWHART, WWHATH, WWHAWK,
 WWHBCK, WWHBCM, WWHCRX, WWHELE, WWHEMY, WWHENL, WWHOLB,
 WWHOLN, WWHOLS, WWHTOR, WWILCH, WWINST, WWIPPL, WWISLE, WWKENN,
 WWKENT, WWKGWR, WWKILK, WWKSTM, WWLAND, WWLANR, WWLAPF, WWLDOW,
 WWLEED, WWLIFT, WWLLAW, WWLODD, WWLOST, WWLSTL, WWLSUT, WWLTRE,
 WWLUPP, WWLVET, WWLWDN, WWLYDF, WWLYNT, WWMABT, WWMARA, WWMARK,
 WWMAWG, WWMBSH, WWMCAN, WWM DAM, WWM EVA, WWMILV, WWMITC,
 WWMLBK, WWMMAG, WWMODY, WWMORT, WWMORW, WWMOUS, WWMPT, RT,
 WWMSMT, WWMTON, WWMTVY, WWMULL, WWNCAD, WWNCUR, WWNCYR,
 WWNETH, WWNFER, WWNMOL, WWNPTN, WWNPWI, WWNTAM, WWNTAW,
 WWNTCY, WWOAKF, WWOSTN, WWPADS, WWPCMB, WWPIPE, WWPISE, WWPLRN,
 WWPOLP, WWPORL, WWPOST, WWPOUN, WWPRAZ, WWPREA, WWPRIN, WWPSCO,
 WWPTRE, WWPTWN, WWPURI, WWRACK, WWRILL, WWROCH, WWRUMF, WWSAGN,
 WWSALC, WWSAMP, WWSBNT, WWSBUR, WWSCAN, WWSCHD, WWSCIL, WWSCLM,
 WWSCOL, WWSDAY, WWSDOM, WWSENN, WWSFLM, WWSGAB, WWSGEN,
 WWSGER, WWSHAL, WWSHAU, WWSHEB, WWSHIR, WWSIDB, WWSILV, WWSJUS,
 WWSKEV, WWSMAB, WWSMER, WWSMOL, WWSMWG, WWSMWS, WWSOME,
 WWSPAX, WWSTAL, WWSTAR, WWSTAV, WWSTIC, WWSTIT, WWSTOC, WWSTOG,
 WWSTUD, WWSUTT, WWSWIM, WWTEDB, WWTEMP, WWTHRE, WWTIMB, WWTINT,
 WWTLIZ, WWTORX, WWTREB, WWTREG, WWTRES, WWUPOT, WWVERY, WWWASH,
 WWWBAY, WWWCKR, WWWDGT, WWWWDN, WWWEEK, WWWEMB, WWWFRD,
 WWWHEA, WWWHIM, WWWILM, WWWITH, WWWIVE, WWWKLH, WWWMON,
 WWWMOR, WWWOOD, WWWOOL, WWWSHM, WWWZOY, WWYEAL, WWYETM,
 WWZELA

Appendix 2

BT Exchanges In Market 2

660 Exchanges

CLFLE, CLWOO, CMALC, CMBER, CMBIDF, CMBRI, CMCHEY, CMCOD, CMCOLE, CMHILL, CMKVR, CMSMBK, CMSOUC, CMTOL, CMWOL, CMWOM, EAARR, EAATT, EAAYL, EABEC, EABGY, EABLA, EABLU, EABMD, EABND, EABNH, EABRI, EABRU, EABTF, EACAI, EACFH, EACHF, EACLY, EACOX, EACTM, EADIS, EADNM, EADSM, EAELC, EAEMS, EAEXN, EAFK, EAFME, EAFUL, EAGDM, EAGIR, EAGWK, EAHAS, EAHET, EAHIS, EAHOL, EAHSD, EAHUL, EAING, EALAK, EALAT, EALNT, EALPT, EALWT, EAMAN, EAMKT, EANPT, EANWD, EANWS, EAONG, EAORM, EAPAK, EASCI, EASFM, EASFT, EASOH, EASTD, EASWV, EATEV, EATHE, EATIP, EATRU, EAWAS, EAWDB, EAWDF, EAWIV, EAWLM, EAWMS, EAWRI, EAWTB, EAWTN, EAWYM, EMALFRE, EMAMBER, EMASBOU, EMASHBB, EMATTHE, EMBARTO, EMBELPE, EMBINGH, EMBOSTO, EMBREAD, EMBRIXW, EMBUCKD, EMBYFIE, EMCHATT, EMCOTGR, EMDESBO, EMDRAYC, EMDSSFO, EMEARLS, EMEDWIN, EMESTLE, EMETWLL, EMFINED, EMHLBCH, EMHORSL, EMHURLE, EMIBSTO, EMIRTHL, EMLSUTT, EMLUTTE, EMMATLO, EMMESHM, EMMKFIE, EMOAKHA, EMOVERS, EMPLUMT, EMQURRN, EMRADCL, EMRMSEY, EMROTHW, EMRPTON, EMSAWTR, EMSKGNS, EMSLEBY, EMSLFRD, EMSOSH, EMSOUTH, EMSPCOT, EMTBSHE, EMTHRAP, EMTUTBU, EMWEDDO, EMWIRKS, ESALV, ESBK, ESBRL, ESBLY, ESBUR, ESCAR, ESCUP, ESDUN, ESDUR, ESDYS, ESFAU, ESGAL, ESHAD, ESHAR, ESIKR, ESKEL, ESKIN, ESKLY, ESKRL, ESKRM, ESLCG, ESLOC, ESMNF, ESMON, ESNML, ESNOA, ESNRB, ESPEB, ESSCN, ESSTA, ESTAY, ESTIL, ESWCA, ESWIN, LCADL, LCASL, LCASP, LCBAN, LCCAF, LCCOP, LCDTF, LCEAR, LCECC, LCEGR, LCGAR, LCHAM, LCHAR, LCHET, LCKES, LCKNO, LCMLM, LCPAR, LCULV, LCWGT, LCWHA, LCWIN, LNCNW, LNPKS, LSTAD, LSWOL, LVAUG, LVHAL, LVHIG, LVWTW, LWCHO, LWDEN, LWHARE, MRALD, MRBOL, MRCHA, MRDIS, MRMOT, MRNEW, MRSAN, MRWEA, MRWHA, MYBOR, MYBOS, MYBRW, MYCAY, MYCRF, MYCSH, MYCTN, MYCUL, MYDFF, MYDLT, MYFIL, MYHEB, MYHIP, MYHNS, MYKEY, MYLEV, MYMAL, MYOAT, MYPIC, MYPOC, MYRPP, MYSTR, MYTAD, MYTHT, MYWAY, NDBAL, NDBAT, NDBGR, NDBIR, NDCAS, NDCDO, NDCHR, NDCLI, NDCOO, NDDYM, NDEDE, NDFAI, NDFRO, NDHAW, NDHIL, NDLIN, NDLOO, NDMEO, NDNON, NDOTF, NDPEM, NDRYE, NDSAN, NDSEA, NDSML, NDSOU, NDSTU, NDTEN, NDWES, NDWET, NDWKI, NEAM, NEAW, NEBDL, NEBEA, NEBRO, NEBUR, NECC, NECOX, NECR, NEDUDL, NEE, NEES, NEGA, NEGM, NEHYL, NELC, NEMEA, NEOC, NERG, NERN, NESAC, NESFE, NESH, NESH, NESLB, NESTK, NESTO, NETI, NETMN, NEWAU, NEWHY, NEWLF, NEWN, NEWT, NIBNH, NIBO, NICDY, NICF, NICI, NICK, NICLK, NICMN, NICN, NICR, NIDD, NIDG, NIDO, NIDP, NIDV, NIEG, NIEK, NIHO, NIHW, NIKI, NILY, NIMF, NIMR, NINE, NINS, NIOM, NIRI, NIRT, NISE, NISM, NISTM, NSBBN, NSBCY, NSBDS, NSBKI, NSCTR, NSDGW, NSDYC, NSFRA, NSFRR, NSFWM, NSICL, NSIMD, NSIUR, NSLOS, NSNAI, NSPET, NSPRT, NSSVN, NSTUR, SDBLLNG, SDBMBRD, SDBSHM, SDCWS, SDFRSHW, SDHNFLD, SDHRSTP, SDHSSCK, SDMDDLT, SDMDHRS, SDNWPRT, SDPGHM, SDPLGT, SDPVNSM, SDSHNLK, SDSLSY, SDSTRGT, SDSTRRN, SDVNTNR, SDWCKHM, SDYPTN, SLASK, SLBAW, SLBEN, SLBWH, SLCBY, SLCL, SLCLY, SLEK, SLEP, SLFGY, SLHC, SLHLY, SLHX, SLLH, SLMIM, SLMT, SLRSN, SLRU, SLSKT, SLSPK, SLWAD, SLWBO, SLWHT, SLXDS, SMBC, SMBZ, SMCBY, SMCHN, SMCN, SMFRD, SMHXT, SMKBN, SMLA, SMLSN, SMNPL, SMOA, SMOY, SMPRB, SMRDB, SMROW, SMSA, SMSFD, SMSH, SMTA, SMWC, SMWEP, SMWLY, SMWS, SMWTD, SMWW, SMYG, SSBAN, SSBAT, SSBLE, SSBOA, SSBOX, SSBRI, SSCDR, SSCIN, SSCOL, SSCOR, SSCRD, SSDBK, SSDSY, SSFGN, SSFLA, SSGLA, SSHGH, SSLDY, SSLON, SSMBH, SSNAH, SSPIL, SSSFD, SSSHM, SSSH, SSSTT, SSTIM, SSWEL,

SSWGN, SSWTC, SSWWS, SSYAT, STALSFD, STAMSBY, STBINAB, STBLFRD, STBRDPT, STCANCL, STDOWTN, STDURRW, STFORDB, STGILGM, STLGSHL, STMILOS, STPORTL, STPRSTN, STSHABY, STSWANG, STTDWTH, STTWYFD, STUPWEY, STWARHM, STWEYMH, STWRMWL, SWABT, SWBII, SWBIK, SWBNB, SWBSE, SWBUD, SWCAA, SWCNE, SWCT, SWCXX, SWGAR, SWGBG, SWHJL, SWLLG, SWMES, SWMGR, SWMU, SWNSN, SWPDW, SWPTY, SWQTI, SWRHR, SWRRY, SWSDV, SWTAJ, SWTAT, SWUWN, SWYBL, SWZWM, THAFD, THBG, THCDN, THCLY, THDC, THEV, THEY, THH, THHH, THHW, THLP, THMSD, THOH, THSPD, THTAD, THTG, THWL, THWTH, THWY, WMADY, WMASH, WMBAD, WMBEW, WMHAG, WMHCH, WMLIT, WMMAL, WMPER, WMPKR, WMSTU, WMUTT, WNABC, WNAGE, WNBC, WNBG, WNBH, WNBRS, WNBT, WNCA, WNCB, WNCHK, WNCHR, WNDEN, WNDON, WNELL, WNGRE, WNHAT, WNHLN, WNHOL, WNLDD, WNLED, WNLEO, WNLGF, WNLR, WNLUD, WNMB, WNMD, WNMW, WNNN, WNOC, WNOSW, WNPEG, WNROS, WNROW, WNRUA, WNRUT, WNSA, WNSHI, WNVAL, WNWCH, WNWEM, WNWPL, WSALL, WSBIN, WSBOT, WSCAS, WSCLE, WSDAL, WSDAR, WSDAV, WSDUN, WSGAL, WSGIR, WSGLG, WSGRT, WSLAK, WSLEX, WSMAU, WSOBA, WSPTH, WSPTN, WSROT, WSSTO, WSSTR, WSWEK, WSWEM, WWAXMI, WWBARN, WWBIDE, WWBLYD, WWBRAU, WWBTRA, WWBUDE, WWBUDL, WWCALL, WWCHEL, WWCHRD, WWCHUD, WWCRED, WWCREW, WWCULL, WWDART, WWDRAW, WWHOLF, WWHONI, WWILMI, WWKKWL, WWKNGB, WWLAUN, WWLISK, WWLOOE, WWLPRT, WWLYME, WWMART, WWMINE, WWOKEH, WWOSMY, WWPAR, WWPERR, WWPRYN, WWROBO, WWSEAT, WWSHER, WWSIDM, WWSIVE, WWSOWT, WWSPET, WWSTEN, WWTAVI, WWTOPS, WWTORR, WWTOTN, WWTPTNT, WWWADE, WWWELL, WWWILL, WWWINC, WWYELV, WWYEOV

Appendix 3

BT Exchanges In Market 3

1,540 Exchanges

CLBER, CLBIS, CLCAN, CLCLE, CLCOV, CLEUS, CLFAR, CLHOL, CLKEN, CLKLG, CLKXX, CLLOW, CLMON, CLMOO, CLNEW, CLSHO, CLSOU, CLSTE, CLUPP, CLWAL, CLWAP, CMACO, CMALD, CMASHF, CMASTX, CMBEAC, CMBEAR, CMBED, CMBIL, CMBIN, CMBIR, CMBLAC, CMBNW, CMBRO, CMBRU, CMBYL, CMCAL, CMCAN, CMCAS, CMCEN, CMCGF, CMCHAP, CMCHEL, CMCHY, CMCRA, CMDD, CMDRU, CMDUN, CMEARD, CMEAS, CMEDG, CMERD, CMEXH, CMFAL, CMFIN, CMFOL, CMFOR, CMFOU, CMGREB, CMHALE, CMHARBO, CMHEA, CMHED, CMHIGH, CMHIGW, CMHOR, CMJAM, CMKEN, CMKER, CMKING, CMKNO, CMKWD, CMLEA, CMLGS, CMLIC, CMLYE, CMMLD, CMNOR, CMNUN, CMPEL, CMPEN, CMPRI, CMRAD, CMREC, CMRUB, CMRUGB, CMSED, CMSEL, CMSHEL, CMSHI, CMSME, CMSOL, CMSOUB, CMSPR, CMSTB, CMSTE, CMSTOX, CMSTRA, CMSTRE, CMSUT, CMTET, CMTIL, CMTIP, CMVIC, CMWAL, CMWARW, CMWDGT, CMWED, CMWESB, CMWIL, CMWL, CMWV, EABAS, EABCY, EABEL, EABIS, EABNT, EABOR, EABRW, EABSE, EACAM, EACHE, EACHU, EACLN, EACOL, EACOS, EACRH, EACVI, EADAN, EADER, EADOW, EADRA, EAEBY, EAELY, EAEP, EAEWD, EAFEL, EAFOX, EAFRN, EAGBD, EAGOR, EAGRA, EAGYT, EAHAE, EAHAV, EAHAW, EAH LW, EAHTF, EAHWD, EAHWH, EAIPS, EAKLN, EAKSG, EALAI, EALGH, EALLOW, EAMAL, EAMIL, EAMRN, EANBF, EANCC, EANCN, EANCW, EANMK, EARRAY, EAROC, EARST, EASAF, EASBF, EASBW, EASBY, EASND, EASTF, EASTM, EASUD, EASWO, EATHB, EATHP, EATLB, EAVAN, EAWAR, EAWFD, EAWHI, EAWTH, EMALLES, EMALVAS, EMARKWR, EMARNOL, EMAYLES, EMBASFO, EMBEAUM, EMBEEST, EMBELGR, EMBIRSS, EMBLDWO, EMBOURN, EMBRAUN, EMBRLAT, EMBULWE, EMBURTO, EMCASTL, EMCENTL, EMCHALF, EMCHAPE, EMCHELL, EMCOALV, EMCRRBY, EMDAVEN, EMDRRBB, EMDUSTO, EMEASWI, EMEDWAL, EMERRSS, EMEVING, EMFAZEL, EMGDDLI, EMGLNFI, EMGRETO, EMGRHAM, EMGSCTE, EMHARDI, EMHARRO, EMHINCK, EMHNDON, EMHUCKN, EMILKES, EMKIMBE, EMKINGS, EMKIRKB, EMKRBYM, EMKTTER, EMLANGL, EMLEABR, EMLGHBO, EMLONGB, EMLONGE, EMMAARC, EMMELTN, EMMICKL, EMMKDEE, EMMNSFI, EMMONTF, EMMOULT, EMMRKTH, EMNARBO, EMNEWAR, EMNEWOL, EMNORTH, EMODDBY, EMORTON, EMPETER, EMPINXT, EMPOLSW, EMPRTRE, EMRANND, EMRDDIN, EMRPLEY, EMRTHLY, EMRUSHD, EMSANDI, EMSHEPS, EMSHIRE, EMSHRWO, EMSPDNG, EMSTBBS, EMSTIVE, EMSTMFD, EMSTNEO, EMSTNYG, EMSTTEL, EMSUTTI, EMSWADL, EMTHRN, EMTMWOR, EMTOWCE, EMTRENT, EMWARSO, EMWELLI, EMWERRI, EMWESSW, EMWESTO, EMWHITT, EMWILLO, EMWOLLA, EMWSBCH, EMWSTWO, EMYXLEY, ESABB, ESALL, ESARB, ESARM, ESBAN, ESBAT, ESBAX, ESBON, ESBRF, ESBRO, ESBUC, ESBYB, ESCAU, ESCLA, ESCOC, ESCOR, ESCOW, ESCRA, ESCTN, ESDAB, ESDAL, ESDAV, ESDEA, ESDEN, ESDON, ESDUF, ESFAI, ESFAL, ESFFR, ESFML, ESFOU, ESGLC, ESGLN, ESGLS, ESGRA, ESGRB, ESGRG, ESIKG, ESKIR, ESKNW, ESLAR, ESLEI, ESLEV, ESLIB, ESLNW, ESLOA, ESLVB, ESLVS, ESMAL, ESMAY, ESMID, ESMOR, ESMUS, ESNEW, ESPAR, ESPCK, ESPEN, ESPER, ESPOL, ESPOR, ESQUE, ESROS, ESSHO, ESSTI, ESTNT, ESWAV, ESWHA, ESWHI, LCACC, LCAIM, LCAIN, LCAOR, LCAPB, LCASB, LCATH, LCBAB, LCBAC, LCBAR, LCBIR, LCBK, LCBLP, LCBOL, LCBRN, LCBUR, LCBUS, LCCAR, LCCHO, LCCHU, LCCLE, LCCLR, LCCLV, LCCOC, LCCOL, LCDAR, LCDAU, LCFAR, LCFLW, LCFOM, LCFRE, LCFUL, LCGRH, LCHBK, LCHEW, LCHEY, LCHIG, LCHIN, LCHOR, LCKEN, LCKHA, LCLAN, LCLAY, LCLEI, LCLEY, LCLIT, LCLON, LCLOT, LCLYT, LCMAR, LCMAT, LCMOR, LCNEL, LCNH, LCNOR, LCPAD, LCPEN, LCPEW, LCPLB, LCPL, LCPOU, LCPRE, LCRAM, LCRIB, LCROC, LCROS, LC SHW, LCSOU, LCSSH, LCSTA, LCSTD,

LCTOD, LCTOT, LCWAL, LCWES, LCWHI, LCWIG, LCWIL, LCWOR, LNADK, LNBAR, LNBGN, LNBKG, LNBPK, LNCED, LNCHF, LNCLA, LNCUF, LNDAG, LNEDM, LNEFN, LNFN, LNGDM, LNGHL, LNHAC, LNHAI, LNHAT, LNHOD, LNHOR, LNHPR, LNILC, LNILN, LNING, LNLEY, LNLOU, LNLVY, LNMED, LNMUS, LNNFN, LNNWS, LNPFT, LNPGN, LNPON, LNPOP, LNPOT, LNRAI, LNROM, LNSOK, LNSTA, LNSTB, LNSTF, LNTOT, LNUPK, LNUPM, LNWCR, LNWFD, LNWGN, LNWIN, LNWSD, LNWTH, LSADD, LSASH, LSBAL, LSBEC, LSBEU, LSBEX, LSBKM, LSBRO, LSBURH, LSHYF, LSCHER, LSCHES, LSCHI, LSCLPM, LSCOB, LSCRAY, LSCRO, LSCTFD, LSCTHM, LSDAR, LSDEP, LSDOW, LSDUL, LSELT, LSEPSM, LSERI, LSESH, LSEWE, LSFARB, LSFARN, LSFOR, LSGIP, LSGRNH, LSGRNW, LSGRO, LSHAY, LSKID, LSKIN, LSLEA, LSLEE, LSLODH, LSMAL, LSMEPK, LSMERS, LSMIT, LSMOL, LSMOR, LSNCHM, LSNOR, LSORP, LSPUR, LSPUT, LSRED, LSREI, LSRIC, LSRUS, LSSAN, LSSID, LSSLA, LSSTR, LSSUN, LSSUR, LSSUT, LSSWA, LSSYD, LSTED, LSTHDT, LSTHMD, LSTHO, LSTUL, LSUWAR, LSWAL, LSWAN, LSWEY, LSWIM, LSWLTN, LSWOO, LSWOR, LSWWKM, LVAIN, LVALL, LVANF, LVARR, LVBIL, LVBIR, LVBOO, LVBRO, LVCAL, LVCEN, LVCHI, LVCLA, LVCRE, LVCUL, LVEAS, LVELL, LVFRO, LVGAT, LVGRE, LVHEL, LVHES, LVHOO, LVHOY, LVHUN, LVHUY, LVIRB, LVLAR, LVLYM, LVMAG, LVMOU, LVMSX, LVNES, LVNET, LVNLW, LVNOR, LVORM, LVPAD, LVPEN, LVPRE, LVRAI, LVRNE, LVRNM, LVROC, LVROY, LVSAI, LVSEF, LVSIM, LVSKE, LVSTA, LVSTK, LVSTO, LVUPH, LVWAL, LVWAR, LVWAT, LVWID, LWACT, LWASH, LWBUS, LWCHI, LWCOL, LWCRI, LWEL, LWEDG, LWEGH, LWELS, LWFEL, LWGAR, LWGOL, LWGRE, LWHAM, LWHARL, LWHARR, LWHAT, LWHAY, LWHEN, LWHOU, LWISL, LWKGRE, LWKIN, LWKLAN, LWKNE, LWKROA, LWMIL, LWNEDG, LWNOR, LWNWEM, LWNWOO, LWPER, LWPIN, LWRAD, LWRIC, LWRUI, LWSHAR, LWSHE, LWSKY, LWSOU, LWSTAI, LWSTAN, LWTWI, LWUXB, LWWAT, LWWDRA, LWWEM, LWWIL, MRALT, MRARD, MRASH, MRBLA, MRBRA, MRBRO, MRBUR, MRBUX, MRCEN, MRCHE, MRCHO, MRCOL, MRCON, MRDEN, MRDID, MRDRO, MREAS, MRECC, MRFAI, MRGAT, MRGLO, MRHAR, MRHEA, MRHUL, MRHYD, MRIRL, MRKNU, MRLON, MRMAC, MRMAR, MRMDW, MRMER, MRMID, MRMOS, MRMSL, MRNOR, MROLD, MRPEN, MRPOY, MRPRE, MRRAD, MRRIN, MRRUS, MRSAD, MRSAL, MRSTA, MRSTE, MRSTO, MRSWI, MRTRA, MRURM, MRWAL, MRWHI, MRWIL, MRWIN, MRWOO, MRWYT, MYACO, MYADE, MYARM, MYBAT, MYBD, MYBIN, MYBNN, MYBRG, MYCAL, MYCAS, MYCHA, MYCLE, MYCSG, MYDEW, MYDHS, MYDUD, MYELL, MYGOO, MYGRF, MYGUI, MYHAL, MYHAW, MYHAX, MYHBK, MYHEA, MYHEC, MYHGT, MYHHL, MYHLT, MYHMF, MYHMY, MYHOB, MYHON, MYHSF, MYHUD, MYIDL, MYILK, MYILL, MYKEI, MYKKB, MYKNA, MYKNO, MYLAI, MYLOF, MYLOW, MYLS, MYMAN, MYMIL, MYMIR, MYMOO, MYMOR, MYMSG, MYMTH, MYNMN, MYOTL, MYPON, MYPUD, MYQUE, MYROT, MYRPN, MYRWD, MYSAN, MYSCA, MYSEA, MYSEL, MYSEM, MYSHI, MYSKE, MYSKP, MYSLA, MYSM, MYSNH, MYSOW, MYSRB, MYSTE, MYTHN, MYUND, MYWAK, MYWEH, MYYO, NDACO, NDAGR, NDASF, NDAYL, NDBAR, NDBEA, NDBEX, NDBHI, NDBLH, NDBRO, NDCAN, NDCHE, NDCHS, NDCOP, NDCRO, NDDEA, NDDOV, NDEGR, NDFAV, NDFOL, NDGIL, NDGRA, NDHAS, NDHBA, NDHEA, NDHOO, NDHYT, NDION, NDMAI, NDMED, NDMSH, NDNRO, NDOXT, NDPWO, NDRAI, NDRAM, NDSEV, NDSHE, NDSIT, NDSNO, NDSTR, NDTHA, NDTON, NDTWE, NDUCK, NDWHI, NDWMA, NEAT, NEAYC, NEB, NEBA, NEBDT, NEBH, NEBL, NEBO, NEBR, NECM, NECN, NECT, NED, NEDB, NEDL, NEDU, NEEC, NEEHN, NEESG, NEF, NEFH, NEFN, NEG, NEGF, NEGHD, NEHAL, NEHHL, NEHLS, NEHRT, NEHT, NEHZ, NEILB, NEJ, NEJW, NEK, NEKI, NEL, NELF, NELIN, NEMI, NEMP, NEMTN, NENA, NENN, NENP, NENS, NENT, NENTE, NENTW, NEP, NEPH, NEPTE, NERC, NERE, NERT, NES, NESAI, NESHM, NESP, NESS, NESTN, NESU, NESUN, NESVL, NEW, NEWAS, NEWB, NEWHP, NEWK, NIAM, NIAT, NIBA, NIBB, NIBC, NIBM, NIBML, NIBRH, NIBYS, NIC, NICRG, NICTY, NIDLD, NIEAS, NIFWM, NIGGY, NIKNK, NILD, NILDW, NILE, NILG, NILN, NIMAL, NINTH, NINTS, NINY, NIORM, NIPO, NIWBY, NSASH, NSBLG, NSDEN, NSELG, NSELL, NSKGW, NSKNC, NSLNG, NSNTH, NSWES, SDBGNRR, SDBRGSS, SDCHCHS, SDCRWLY, SDCSHM, SDESTBR, SDFRHM, SDGSPRT, SDHLSHM, SDHMPDN, SDHRLY, SDHRNDN,

WSSHE, WSSOU, WSSPR, WSSTE, WSSTN, WSSTW, WSTHO, WSTRO, WSUDD,
WSWES, WSWIS, WWBODM, WWBRIX, WWBURN, WWBWAT, WWCAMB, WWCHRS,
WWCRWN, WWDAWL, WWDPR, WWEXMO, WWEXTR, WWFALM, WWHAYL,
WWHEL, WWILFR, WWIVYB, WWNABB, WWNANP, WWNEWQ, WWPAIG, WWPENZ,
WWPINH, WWPSTK, WWPTON, WWPYTH, WWREDR, WWSALT, WWSAUS, WWSBUD,
WWSHIP, WWSMAR, WWTAUN, WWTEIG, WWTIVE, WWTORQ, WWTRUR

Appendix 4

BT Exchanges moving from Market 1 or Market 2 to Market 3

349 Exchanges

CLMOO, CMFIN, CMJAM, CMKER, CMKNO, CMLLD, EACHU, EACOS, EADAN, EADER, EADOW, EADRA, EAEPP, EAFRN, EAGBD, EAGYT, EAHAE, EAHAW, EAHWH, EAKSG, EAMIL, EAROC, EASAF, EASBY, EASUD, EASWO, EATHB, EMBIRSS, EMBOURN, EMBRLAT, EMCHELL, EMHARDI, EMKIMBE, EMKRBYM, EMMKDEE, EMNEWOL, EMRANND, EMRPLEY, EMRTHLY, EMSHEPS, EMSHIRE, EMSTTEL, EMTOWCE, EMWARSO, EMYXLEY, ESARB, ESARM, ESBAX, ESBON, ESBUC, ESBYB, ESCAU, ESCOC, ESDEN, ESFFR, ESGLN, ESGLS, ESGRB, ESGRG, ESIKG, ESKNW, ESLNW, ESLOA, ESMAL, ESMID, ESQUE, ESSHO, ESTNT, ESWHI, LCAIN, LCAPB, LCBAC, LCBAR, LCBIR, LCBRN, LCBUS, LCCLE, LCCOC, LCFRE, LCHBK, LCHEY, LCKEN, LCKHA, LCLON, LCLYT, LCMAR, LCPAD, LCPEN, LCPLB, LCPLE, LCTOD, LCWAL, LCWHI, LCWIL, LCWOR, LNBGN, LNCUF, LNPFT, LSBKM, LSCOB, LSFARN, LSGRNH, LSMERS, LSUWAR, LVBIL, LVCUL, LVEAS, LVFRO, LVHEL, LVHOY, LVNOR, LVRAI, LVUPH, LWRAD, MRARD, MRKNU, MRSAD, MYBNN, MYCAL, MYDUD, MYGOO, MYGUI, MYHAW, MYHON, MYILK, MYILL, MYKKB, MYKNA, MYMTH, MYRPN, MYSCA, MYSKE, MYSLA, MYSM, MYSNH, MYSOW, MYSTE, MYTHN, MYWEH, NDACO, NDAGR, NDAYL, NDBAR, NDBEA, NDBHI, NDCHE, NDCHS, NDCOP, NDHEA, NDHOO, NDHYT, NDLOH, NDMSH, NDNRO, NDPWO, NDSHE, NDSNO, NEBL, NEFH, NEFN, NEHHL, NEHZ, NEP, NEPH, NERE, NEWAS, NIAM, NIBB, NIBC, NIBRH, NIDLD, NIFWM, NILDW, NILE, NIMAL, NINY, NSASH, NSBLG, NSDEN, NSELG, NSELL, NSKGW, NSKNC, NSLNG, NSNTH, NSWES, SDHYLNG, SDLSLNT, SDPCHVN, SDPTRSF, SDSNDWN, SDSTBBN, SDSTHWC, SDSTHWT, SDSTYNN, SDDTCHF, SLARM, SLASC, SLBCC, SLBLR, SLBOI, SLBWD, SLCLS, SLCUD, SLCX, SLGL, SLGY, SLHBE, SLHLG, SLHTW, SLHYG, SLIMM, SLKIV, SLNCU, SLOB, SLPN, SLRY, SLSC, SLTHY, SLTKL, SLWKT, SLWM, SLWS, SLWTH, SMAP, SMBU, SMBWD, SMCAR, SMC, SMFG, SMGM, SMHGN, SMKI, SMKO, SMKT, SMPEN, SMSTF, SMWE, SMWI, SSALM, SSBCL, SSCBD, SSCHN, SSHWK, SSKEY, SSSHE, SSTHO, SSWIB, SSWOB, STBISHW, STBLNFD, STBURSN, STDORCH, STHAMBL, STHICLF, STLYTMN, STSTHBN, STVERWD, SWADW, SWAG, SWAVY, SWBPG, SWCIT, SWCJW, SWCYX, SWDPW, SWEBY, SWFBX, SWGC, SWGLN, SWLLR, SWMMV, SWMYS, SWNE/CH, SWOAG, SWPDU, SWPEK, SWPND, SWRDA, SWRDX, SWRWI, SWSKU, SWTEZ, SWTFA, SWTR, SWXNH, SWYYN, SWZKS, THBW, THCK, THCN, THFC, THIP, THLG, THWP, THWR, WMMFD, WMTRE, WNBUC, WNCKO, WNDWA, WNFL, WNHAW, WNHR, WNHW, WNM, WNNP, WNPRS, WNRE, WNRWX, WNSY, WSANN, WSARD, WSAYR, WSBEI, WSBRE, WSBRW, WSBUS, WSCAB, WSCMN, WSDMS, WSGOU, WSGRE, WSHEL, WSIRS, WSIRV, WSKBN, WSKIE, WSKIW, WSLAR, WSLES, WSPOS, WSPRE, WSPRO, WSSTE, WSTTN, WSSTW, WSTRO, WWBRIX, WWCHRS, WWDRAWL, WWHAYL, WWILFR, WWNANP, WWPIN, WWSALT, WWSHIP, WWTEIG, WWTIVE

Appendix 5

BT Exchanges moving from Market 3 to Market 2

7 Exchanges

CMHILL, MRNEW, MYCSH, SDCWS, SDNWPRT, THTAD, WMMAL

Appendix 6

BT Exchanges in Market 1 that BT has not currently broadband enabled

26 Exchanges

EAPRI, NDISF, NSBAY, NSBNS, NSBRN, NSBVS, NSCRN, NSCWY, NSDRN, NSERI, NSGRE, NSGRO, NSLEV, NSLMD, NSLPT, NSMAN, NSNBY, NSNTT, NSSCP, NSSOL, NSSPY, NSSST, NSTIM, SDPLSTW, SDSTMRD, SDSTTN

Annex 2

Market definition methodology

Introduction

- A2.1 There are two dimensions to the definition of a relevant market: the products to be included in the same market and the geographic extent of the market. As such it is often necessary to define the relevant product market before exploring the geographic dimension of the market. Our approach to market definition follows the methodology taken in the WBA market in 2008 (“the 2008 WBA market review”)¹³¹ and is consistent with those used by UK¹³² as well as European and US competition authorities.

Commission’s Recommendation on Markets and SMP Guidance

- A2.2 In 2002, the Commission issued its Guidelines on Market Analysis and the Assessment of Significant Market Power under the Community Regulatory Framework for Electronic Communications Networks and Services¹³³ (“the SMP Guidelines”).
- A2.3 In 2003, the Commission issued its *Recommendation on relevant product and services markets*¹³⁴ identifying product and service markets within the electronic communication sector in which *ex ante* regulation may be warranted. The Commission replaced that recommendation in December 2007 with the current Recommendation on Markets, which (among other things) reduced the number of markets on the list.¹³⁵ The Recommendation on markets is accompanied by an Explanatory Memorandum (EM).¹³⁶
- A2.4 The Recommendation on Markets lists the WBA market at point 5 of the Annex as follows:

“This market comprises non-physical or virtual network access including ‘bitstream’ access at a fixed location. This market is situated downstream from the physical access covered by market 4

¹³¹ Ofcom, *Review of the wholesale broadband access markets*, May 2008.

<http://www.ofcom.org.uk/consult/condocs/wbamr07/statement/>

¹³² Office of Fair Trading, *Market Definition – Understanding Competition Law*, OFT 403, December 2004. http://www.oft.gov.uk/shared_of/business_leaflets/ca98_guidelines/oft403.pdf

¹³³ Commission Recommendation 2002/C165/03, OJ C165, 11.7.2002, p.6

¹³⁴ Commission Recommendation of 11 February 2003 2003/311/EC, OJ L114, 8.5.2003, p.45.

¹³⁵ Commission Recommendation of 17 December 2007 2007/879/EC, OJ L344, 28.12.2007, p.65:

http://eur-lex.europa.eu/LexUriServ/site/en/oj/2007/l_344/l_34420071228en00650069.pdf
(http://ec.europa.eu/information_society/policy/ecomm/doc/library/proposals/sec2007_1483_final.pdf)

¹³⁶ The accompanying Explanatory Note to the Recommendation on Markets, *Commission Staff Working Document, 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 communication networks and services (Second edition)*

http://ec.europa.eu/information_society/policy/ecomm/doc/library/proposals/sec2007_1483_final.pdf

listed above, in that wholesale broadband access can be constructed using this input combined with other elements.”

A2.5 Our approach to market definition, as set out below, is consistent with the approach set out in the Recommendation on Markets and the SMP Guidelines, taking into account in particular:

- Recital (4) of the Recommendation on Markets, which clearly states that the starting point for market definition is the definition of retail markets from a forward-looking perspective, taking into account demand- and supply-side substitutability. The wholesale market is identified based on this retail market. This approach is repeated in section 2.1 of the EM, which also states that, because any market analysis is forward-looking, markets are to be defined prospectively taking account of expected or foreseeable developments (technological and/or economic) over a reasonable horizon linked to the timing of the next market review;
- Section 2.1 of the EM, which states that market definition is “*not an end in itself, but a means of assessing effective competition for the purposes of ex ante regulation*”. We adopted an approach by which this consideration is at the centre of our analysis. The purpose of market definition is to illuminate the situation with regard to competitive pressures. For example, our approach to supply side substitution explicitly identifies as the key issue the question of whether additional competitive constraints on pricing are brought to bear by additional suppliers entering the market. So, the key issue is not the market definition for its own sake, but an identification of the extent and strength of competitive pressures; and
- Section 4 of the EM, which states that wholesale markets should be examined in a way that is independent of the infrastructure being used, as well as in accordance with the principles of competition law. Again this approach is key to our analysis. We assess the extent to which switching among services by CPs constrains prices, irrespective of the infrastructure used by the providers of those services.

A2.6 In formulating our market definition, we have taken utmost account of the Recommendation on Markets (together with the EM) and the SMP Guidelines. We consider that the market definitions set out in this statement are consistent with the approach set out in those documents.

General approach to market definition

A2.7 As noted above, the EM makes clear that the market definition exercise of the market analysis “*is not an end in itself*”, but is a means to an end. Market definition aids the assessment of whether end users of a product are protected by effective competition and so whether there is a requirement for the imposition of ex ante regulation. It is in this light that we have conducted the market definition in this review.

A2.8 There are two dimensions to the definition of the relevant market: the relevant products to be included within the market and the geographical extent of that market. Market boundaries are determined by identifying constraints on the price-setting behaviour of firms. There are a number of aspects to consider:

- Demand-side and supply-side substitution;

- Common pricing constraints; and
- Homogeneous competitive conditions.

Demand-side and supply-side substitution

A2.9 To identify constraints on firms' price-setting behaviour, two of the main competitive constraints to consider are:

- how far it is possible for customers to substitute to other products or services for those in question (demand-side substitution); and
- how far suppliers could switch, or increase, production to supply the relevant products or services (supply-side substitution) following a price increase.

A2.10 The hypothetical monopolist test ("HMT") is a useful tool to identify close demand-side and supply-side substitutes. A product is considered to constitute a separate market if a hypothetical monopoly supplier could impose a small but significant, non-transitory price increase ("SSNIP") above the competitive level without losing sales to such a degree as to make this unprofitable. If such a price rise would be unprofitable the market definition should be expanded to include the substitute products. Both the SMP Guidelines and the OFT Guidelines on Market Definition¹³⁷ indicate that a price five to ten per cent above competitive levels would be regarded as 'small but significant'.

A2.11 The demand-side and supply-side substitution must take place within a relatively short time period in order to be able to impose some effective competitive constraint on the hypothetical monopolist. The OFT Guidelines suggest a time period of up to 12 months as a rule of thumb, although this may be shorter for example, in industries where transactions are made very frequently.

A2.12 In applying the HMT, it is standard to begin with a fairly narrow view of the relevant market and then expand that market to include effective substitutes.

A2.13 Demand-side substitution to one product is most likely to be a constraint on the price of another where the two products fulfil similar functions. They do not however have to be precisely the same: the question is whether there would be sufficient switching to act as a constraint on prices. For example, it may be appropriate to regard a number of broadly similar products which differ in price and quality as part of a single market. The relevant question is whether the price of higher quality variants is constrained to the competitive level by the lower quality product/service and vice versa.

A2.14 Extending this reasoning, it follows that the product market definition may broaden to include a wide range of price/quality offerings based on a "chain of substitution"¹³⁸ between intermediate products/services within this range.

A2.15 Supply-side substitution possibilities are examined to assess whether other potential market players provide any additional constraints on the pricing behaviour of the hypothetical monopolist which have not been captured by the demand-side

¹³⁷ OFT, *ibid*

¹³⁸ As described in OFT, "Market definition. Understanding competition law", December 2004, and the *Commission Notice on the definition of relevant market for the purposes of Community competition law*, Official Journal C 372, 09/12/1997 P. 0005 - 0013

analysis. For this to be relevant, suppliers must not be currently providing the product/service in question but must be able to enter the market quickly and at low cost by virtue of their existing position in the supply of other products or areas. This means that the supplier would already own all the assets (e.g., production, distribution and marketing) needed to produce the product/service in question.

- A2.16 Suppliers who are already present in the provision of demand-side substitutes, by definition, are already in the market and the threat of entry does not provide additional competitive constraint on the hypothetical monopolist. Nonetheless, the impact of expansion by such suppliers can be taken into account in the assessment of market power.

Common pricing constraints

- A2.17 Another factor that is sometimes an additional consideration in setting market boundaries is whether there exist common pricing constraints across customers, services or geographic areas (i.e., areas in which a firm voluntarily offers its services at a geographically uniform price). This is recognised at paragraph 3.10 of the OFT Guidelines on Market Definition which states:

“...Although it might in theory be profitable for a hypothetical monopolist to raise price in the focal area, perhaps because substitutes are unavailable, the existence of a price constraint may make such a price rise unprofitable, because it would require that prices are also raised in other areas where substitutes are present. Price constraints may thus lead to the relevant market being widened beyond the focal area...”

- A2.18 The ERG's Common Position on Geographic Aspects of Market Analysis, published in 2008¹³⁹ also notes that:

“A national uniform price of an operator with national coverage might also have the effect that competitive pressure in some areas will be felt on a national level with the result that there are no significant geographic differences in prices. In these cases it can reasonably be assumed that a detailed geographic analysis would not lead to a different result than the analysis of a single national market and therefore no detailed geographic analysis (or data collection) is required”.

- A2.19 Where common pricing constraints exist, the geographic areas in which they apply could be included within the same relevant market even if demand-side and supply-side substitutes are not present. Failure to consider the existence of a common pricing constraint could lead to unduly narrow markets being defined.

Homogeneous competitive conditions

- A2.20 Our approach also takes into account the SMP Guidelines. In particular paragraph 56 which states that:

“According to established case-law, 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

¹³⁹ ERG Common Position on Geographic Aspects of Market Analysis, October 2008
http://erg.ec.europa.eu/doc/publications/erg_08_20_final_cp_geog_aspects_081016.pdf

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

- A2.21 Hence, where there are geographic areas where competitive conditions are sufficiently homogeneous the definition of the relevant geographic market will include all of those areas within one market, even if they are not linked by demand- or supply-side substitution.

Geographic market

- A2.22 When defining the geographic scope of a market it is important to bear in mind that market definition is a means to an end and not an end in itself. The purpose of conducting a market definition exercise is to identify the relevant products and geographic area in which to undertake an analysis of competitive conditions for the purpose of determining whether ex ante regulation is required or not. This is the basis on which we have conducted our analysis.
- A2.23 The principles of demand-side and supply-side substitution and the SSNIP test that aims to identify them can in principle also be used to define the geographic scope of the relevant market. However, rather than considering alternative products, the analysis assesses the effect on demand for the relevant product if there is a relative price change in a narrow geographic area. If products in the relevant product market in other areas are sufficient substitutes, such as to render the price rise unprofitable, then the geographic scope of the relevant market is widened to include these additional areas. Similar principles apply in relation to supply-side substitution. The presence of common pricing constraints across geographic areas is also relevant for the purposes of defining the geographic scope of a market.
- A2.24 In carrying out this market review, we have taken into account the 2008 ERG Common Position set out above.
- A2.25 In terms of the WBA product market, like many wholesale market definition exercises under the European Framework, we are seeking to define the geographic scope of a market under the modified Greenfield approach (as discussed below) where we need to abstract from SMP-derived regulation imposed at the level or downstream of the market being reviewed. In the case of WBA this involves an assessment that disregards existing WBA remedies but does include WLA regulation, in particular LLU based remedies.
- A2.26 The approach adopted in this review of the WBA market is as follows. First we considered the implications of the SSNIP test.
- A2.27 In terms of demand-side substitution, the question is whether a sufficient number of downstream customers would move location (house, business premise, etc.) in response to a SSNIP at the wholesale level, such as to make the SSNIP unprofitable.
- A2.28 Given that the cost associated with moving location is likely to be significantly higher than the cost associated with a WBA SSNIP, it is reasonable to conclude that geographic demand-side substitution is either a very weak or non-existent

constraint. This approach would therefore lead to the definition of very narrow markets from the demand-side, which are unlikely to be practical to analyse or be representative of competitive constraints that exist. We therefore conclude that in this case demand-side substitution is not relevant to assessing the geographic market definition.

- A2.29 On the supply-side the question being asked is whether a supplier of local access who is operating in one geographic area would start supplying in another geographic area if this other area was exposed to a SSNIP by a hypothetical monopolist, to the extent that it would render the SSNIP unprofitable. If the SSNIP would be unprofitable then these geographic areas should be grouped together for the purpose of defining the relevant market.
- A2.30 In communications markets geographic supply-side substitution is generally considered to be a weak or non-existent constraint due to the high cost and long lead times associated with deploying new network infrastructure. This is especially the case for local access networks where there are no upstream remedies which might act to lower the associated costs.
- A2.31 Therefore, similar to demand-side substitution, supply-side substitution is limited by the need for an operator in a different geographic area to invest in new infrastructure. In the case of local access networks this would involve significant sunk costs so it is very unlikely that there would be supply-side substitution from one geographic area to another in response to a price rise by a hypothetical monopolist. This approach again would lead to the definition of very narrow markets which are unlikely to be practical to analyse or be representative of competitive constraints that exist. For these reasons, we have not used a SSNIP test approach to define geographic markets in WBA.
- A2.32 Similarly we have not sought to define a market based on common pricing constraints. Since the 2008 WBA review we have recognised that BT offers discounts to wholesale purchasers in some exchanges. This means that it is not appropriate to identify the geographic scope of the market as being national based on the existence of common pricing. Instead our approach is based on identifying regions of homogeneous competitive conditions. Our methodology is outlined above in paragraphs 3.78 to 3.88 and 3.105 to 3.109. It involves the following steps:
- First, the basic geographic unit needs to be selected, for example post codes or exchange areas;
 - Second, the homogeneity of competition needs to be judged according to factors such as barriers to entry, the number of significant suppliers in the market, distribution of market shares and price-cost margins, and as such necessarily means the geographic market definition and SMP analysis are somewhat inter-related; and
 - Third, areas with similar competitive characteristics need to be aggregated in order to define the geographic areas over which to conduct the SMP analysis.

Modified Greenfield approach

- A2.33 The Commission's framework for market reviews requires the adoption of a 'modified Greenfield approach'.¹⁴⁰ This means that existing SMP remedies that

¹⁴⁰ See Section 2.5 of the EM.

apply to the market under consideration, or to downstream markets, should be set aside. That is, the analysis should be conducted under a hypothetical scenario where the relevant existing SMP regulation does not exist.

- A2.34 In the case of the WBA market this approach means that existing WBA remedies are disregarded but that WLA regulation, in particular the existence of regulated LLU inputs, is taken into account. This is reflected in our geographic market definition which recognises that POs using BT's LLU inputs can impose a competitive constraint on BT in the WBA market.

Benchmark price

- A2.35 For the purposes of the SSNIP analysis and market definition, the appropriate benchmark price is the competitive price to which the hypothetical price increment is applied. If the benchmark price is above the competitive price level, then this may result in an over-estimation of the scope for substitution, resulting in an excessively broad market definition and vice versa.¹⁴¹
- A2.36 The Commission states in the SMP Guidelines that the *“working assumption will be that current prevailing prices are set at competitive levels. If, however, a service or product is offered at a regulated, cost-based price, then such price is presumed, in the absence of indications to the contrary, to be set at what would otherwise be a competitive level...”*¹⁴²

Relationship between wholesale and retail markets

- A2.37 The analysis of retail market definitions is logically prior to the definition of wholesale markets. This is because demand for WBA is derived from demand for access at the retail level, i.e., the level of demand for the upstream input depends on the demand for the retail services which it supports. The principle that market power in the supply of a wholesale product may be constrained by competition in a related downstream market (by operators using a different wholesale input) is well-established. Failure to consider retail level constraints could lead to incorrect conclusions regarding market power and inappropriate remedies at the wholesale level.
- A2.38 If the upstream input accounts for a sufficiently large proportion of the downstream price, the range of available substitutes at the downstream (retail) level will inform the likely range of substitutes for the upstream (wholesale) service. This is because a rise in the price of a wholesale service which is passed through to the associated retail service will cause retail customers to switch retail products, so reducing demand for the wholesale input.

¹⁴¹ The ‘cellophane fallacy’, named after the US case *US v El Du Pont Nemours & Co*, 351 U.S. 377 (1956), is used to describe the fallacy of identifying competitive constraints where prevailing prices are already above the competitive level. Even a monopolist reaches a point where further price increases become unprofitable and where competitive constraints come into action that would not have applied at competitive price levels. If this is not taken into account, the erroneous conclusion could be reached that a monopolist who has successfully exercised market power by raising price is subject to competitive constraints since, starting from monopoly price levels, it would be constrained from implementing further price increases.

¹⁴² Paragraph 42.

Annex 3

Geographic analysis

Introduction

- A3.1 We have analysed the data provided by communications providers (CPs) as a key part of the process when defining the geographic market boundaries. The analysis has been carried out taking account of the ERG Common Position on Geographic Aspects of Market Analysis.¹⁴³ This Annex describes the approach to, and the results of, the geographic analysis that we have carried out in the preparation of this statement.
- A3.2 The analysis presented in this Annex was first carried out in September 2009 for the first consultation and was updated in June 2010 for the second consultation. We are now using the same data and analysis as in the second consultation with the addition of two exchanges. Since the second consultation, BT has indicated these two exchanges were missing from our previous data. The exchanges are Haydon Wick (SSHYW) and Heathrow Terminal 5 (LWXEK).
- A3.3 Haydon Wick covers some of the DPs previously covered by the Blunsdon (SSBBN) exchange which is part of Market 3. Analysis of our data showed that there are 4 POs present or forecast by December 2010 in Haydon Wick. In line with our market definition, Haydon Wick is therefore in Market 3. The total number of DPs present in Market 3 is not affected.
- A3.4 BT is the only PO present in Heathrow T5 (LWXEK) exchange which is therefore in Market 1.
- A3.5 KCOM is the only fixed network provider in the Hull Area and, based on information provided by CPs, currently no other operator has plans to deploy a broadband network in that area. Accordingly, this geographic analysis is centred on the UK excluding the Hull Area.
- A3.6 We have used data at two points to inform our geographic market definition: actual data from June 2010 and forecast data based on confirmed rollout plans by the Principal Operators (POs). Whilst not all POs indicated firm dates for completion of this rollout we have assumed this will be largely complete by December 2010. Therefore the data shown for December 2010 below corresponds to the firm rollout plans of each PO.
- A3.7 Some POs provided forecasts of rollout plans beyond this. Again, some of these plans were open ended. These plans are not confirmed. We have, therefore, not included them in our final geographic market definition. However, for completeness we have included them in this Annex to show the effect that they would have on the geographic market definition if they are implemented in full. We have indicated these within the data tables as “Uncommitted”.
- A3.8 On 16 November 2010 Talk Talk announced plans to unbundle a further 700 exchanges. However, Talk Talk is still in the process of assessing these plans and has not provided us with a list of these 700 exchanges. We have not updated the

¹⁴³ http://www.erg.eu.int/doc/publications/erg_08_20_final_cp_geog_aspects_081016.pdf

data below with the information provided to us by Talk Talk even though it may be considered at this stage to be similar to the “Uncommitted” plans previously provided. We do not believe this has a material impact because we do not take account of these uncommitted plans in our assessment of the presence of POs by exchange.

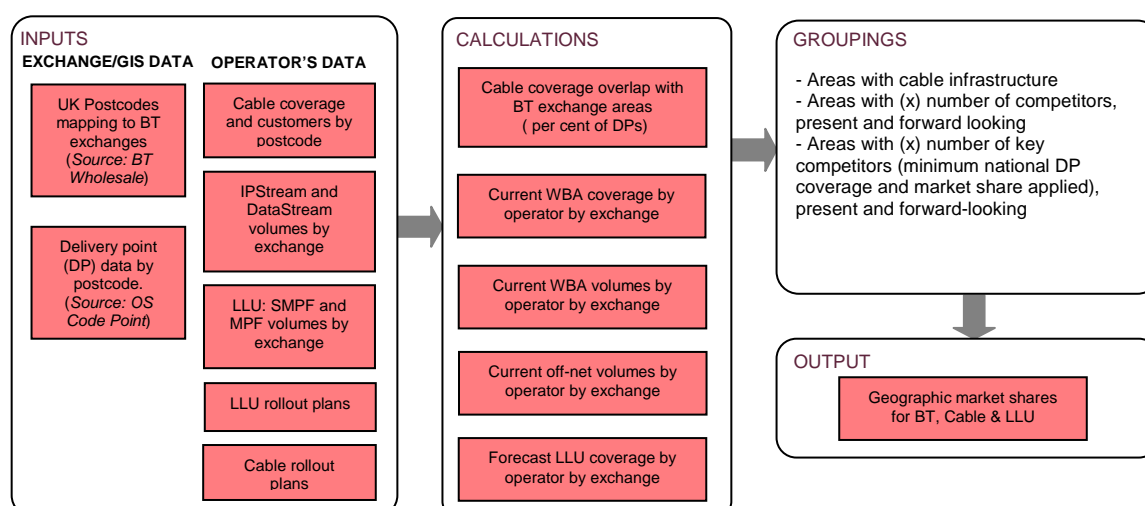
Geographic unit

A3.9 As described in Section 3 and in keeping with our previous review of this market in 2008, we use local exchanges as the basic geographic unit in our assessment. There are 5,589 local exchanges in BT’s network and 14 in KCOM’s network.

Overview of the model structure

A3.10 Figure A3.1 shows an overview of the model structure that we have used (inputs, procedures, and outputs) for assessing and defining the geographic markets.

Figure A3.1: Model structure



Data provided by BT and Virgin Media

A3.11 The data provided by BT and Virgin Media is summarised in Table A3.1.

Table A3.1: Data provided by BT and Virgin Media

Operator	Wholesale product	Data provided
BT (Wholesale)	Broadband access services – asymmetric	<ul style="list-style-type: none"> IPStream take-up: Working System Size (WSS) per customer by exchange DataStream take-up: WSS per customer by exchange
BT (Openreach)	LLU inputs	<ul style="list-style-type: none"> SMPF installed base (live circuits) per LLU operator by exchange MPF installed base (live circuits) per LLU operator by exchange

Virgin Media	Broadband cable	<ul style="list-style-type: none"> • Broadband coverage by postcode • Broadband customers by postcode • Cable rollout plans (DPs covered by postcode and implementation certainty)
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Data provided by LLU operators

A3.12 In June 2010 we asked the Principal LLU Operators (C&WW, O2, Sky and Talk Talk) to identify which exchanges they had enabled and to provide their most recent forecast rollout plans - identifying exchanges which they intend to enable and the date that they planned to be in a position to offer broadband services from these exchanges.

Exchange size calculations

A3.13 The first step in our analysis was to map every delivery point (DP) in the UK, as provided in the Ordnance Survey data, to the local exchange that serves it. This allows us to estimate the size of each local exchange, in terms of the total number of residential and business DPs that it serves.

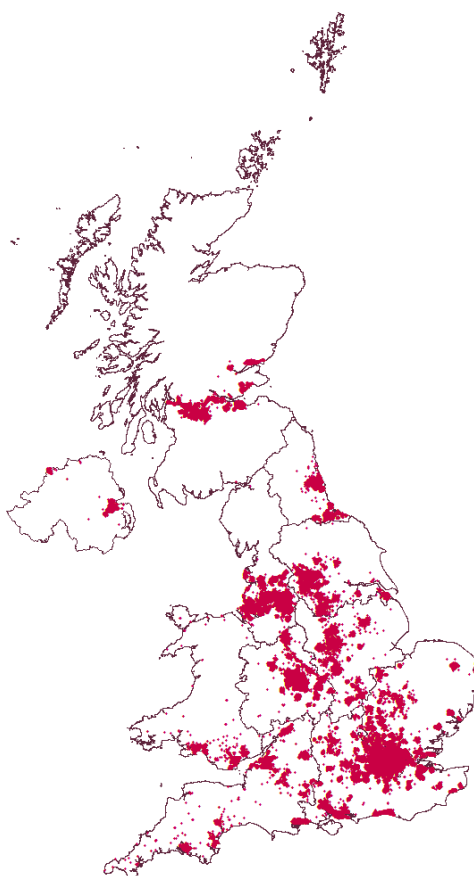
A3.14 This step was performed by combining the Ordnance Survey delivery point data for UK postcodes with BT's (and KCOM's in the Hull Area) data that maps UK postcodes to each exchange. Due to inconsistencies in the postcode lists between these two data sources, this process results in a small amount of data loss. However, overall, 99.4 per cent of the exchange postcodes were matched successfully and the median postcode loss per exchange was 0.8 per cent. The small amount of data loss resulting from this process was compensated for by uplifting the DPs by a factor determined by the number of postcodes 'dropped' on an exchange-by-exchange basis.

Cable overlap calculations

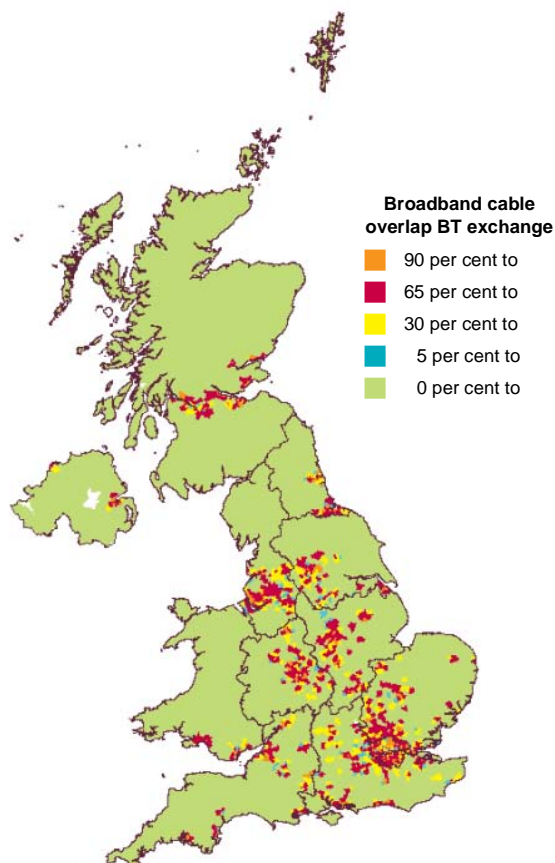
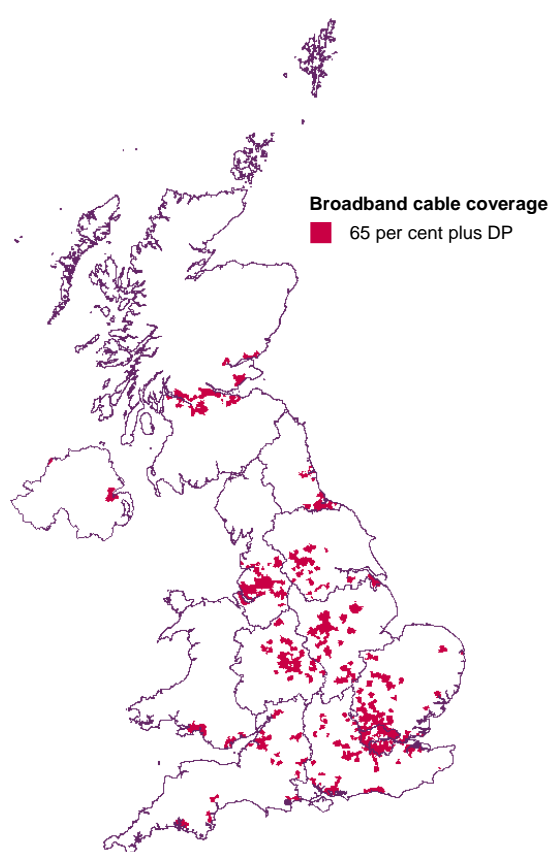
A3.15 Virgin Media provided data on its broadband cable coverage by specifying the number of DPs it can presently offer service to for each postcode. Our methodology maps this directly to the delivery point data for the UK postcodes. Figure A3.2 shows the data provided by Virgin Media at the end of June 2010.

A3.16 In addition, as part of our forward looking approach, we have included Virgin Media's most recent confirmed rollout plans in our geographic market analysis.

Figure A3.2: Virgin Media's broadband cable network coverage



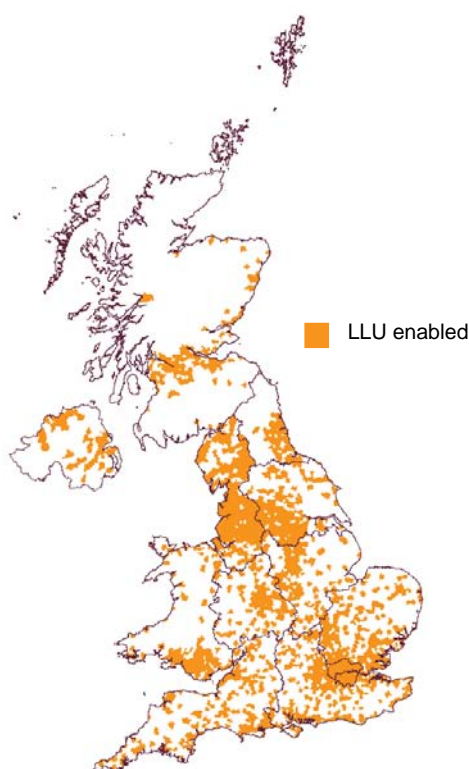
- A3.17 As the basic geographic unit for our geographic market analysis is BT's local exchanges, we mapped Virgin Media's coverage information by postcode onto BT's local exchanges.
- A3.18 The cable network is, however, independent of BT's local exchanges and thus the two do not necessarily align. The overlap between the two networks in a local exchange area may vary from nothing (0 per cent overlap) to complete overlap (100 per cent overlap). Figure A3.3 shows how Virgin Media's cable network overlaps with BT's local exchanges to differing degrees. As set out in the first consultation and also discussed in section 3, we consider Virgin Media as being present within a local exchange when the overlap is at least 65 per cent. Figure A3.4 shows the local exchanges where Virgin Media's overlap is at least 65 per cent.

Figure A3.3: Cable overlap with BT exchanges**Figure A3.4: Exchanges where cable overlap is at least 65 per cent**

- A3.19 At the end of June 2010 there were 829 local exchanges where Virgin Media's overlap is at least 65 per cent. These 829 exchanges serve 44.8 per cent of UK DPs. However, when we include Virgin Media's most recent confirmed rollout plans the number of local exchanges where Virgin Media's overlap is at least 65 per cent increases to 837 (45.5 per cent of UK DPs).
- A3.20 Virgin Media provided further rollout plans and based on these plans the number of local exchanges where its overlap is at least 65 per cent will increase to 849 (46.1 per cent of UK DPs). However, these rollout plans are not confirmed.

LLU coverage

- A3.21 Analysis of the June 2010 LLU data indicates that there are 25 active (non-BT) LLU operators.
- A3.22 Specifically, 2,146 BT exchanges (85.8 per cent of UK DPs) are enabled by at least one LLU operator, and the maximum number of LLU operators active in any one exchange is 7. Figure A3.5 shows the location of these exchange areas.

Figure A3.5: LLU enabled exchange areas, as of June 2010¹⁴⁴

A3.23 As outlined in Table A3.2, the coverage of individual LLU operators varies with many operators focusing on narrow areas representing less than 10 per cent coverage of UK DPs. There are currently five LLU operators with more than 10 per cent coverage, while four LLU operators have coverage ranging between 50 per cent and 90 per cent. It is these four LLU operators that we consider to be “Principal LLU Operators” and these are C&WW, O2, Sky and Talk Talk. The LLU operator that has between 10 per cent and 20 per cent coverage is Udata Infrastructure.

Table A3.2: Breakdown of the coverage of LLU operators¹⁴⁵

Coverage	Jun-10	Dec-10	Uncommitted
Up to 10%	20	20	20
Over 10%	5	5	5
Over 20%	4	4	4
Over 30%	4	4	4
Over 40%	4	4	4
Over 50%	4	4	4
Over 60%	3	3	4
Over 70%	1	2	2
Over 80%	1	2	2
Over 90%	0	0	0

¹⁴⁴ This figure shows all the 25 active LLU operators.

¹⁴⁵ The December 2010 and uncommitted rollout figures only include forecast rollout plans from the four Principal LLU Operators.

The Principal LLU operators

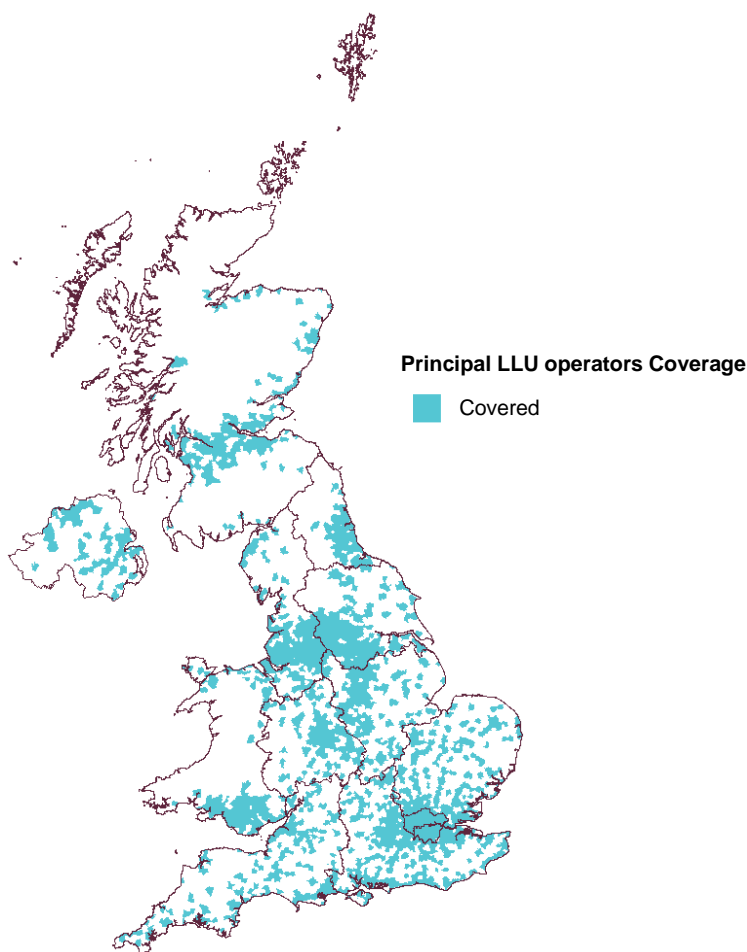
- A3.24 When defining the geographic market boundaries we only use the coverage of the Principal LLU Operators.
- A3.25 Table A3.3 outlines the combined coverage of the Principal LLU Operators for June 2010 and shows how this is expected to change as a result of confirmed (December 2010) and the additional, uncommitted potential rollout plans.

Table A3.3: Current and forecast coverage for the Principal LLU operators

	Jun-10	Dec-10	Uncommitted
Coverage	84.1%	87.1%	87.9%
No. exchanges	1,923	2,141	2,209

- A3.26 Figure A3.6 shows the 2,141 exchanges where the Principal LLU Operators are forecast to be present at the end of December 2010.

Figure A3.6: Exchanges where the Principal LLU Operators are forecast to be present at the end of December 2010



The Principal Operators

- A3.27 If BT and Virgin Media are added to the Principal LLU Operators then there is a total of six Principal Operators (POs) upon which our geographic market boundaries are defined.
- A3.28 Table A3.4 provides a breakdown of the number of exchanges (and the percentage of UK DPs) by the number of the POs within each exchange. This table shows the actual situation as of June 2010 and how this is expected to change as a result of forecast rollout plans.

Table A3.4: Exchange breakdown by number of POs present

No. POs	Jun-10		Dec-10		Uncommitted	
	No. Exchs	Coverage	No. Exchs	Coverage	No. Exchs	Coverage
BT only	3,587	14.3%	3,389	11.7%	3,333	11.0%
2	546	9.5%	407	5.3%	293	3.2%
3	285	8.6%	449	9.7%	524	9.5%
4	309	11.9%	383	14.1%	391	13.3%
5	396	22.8%	460	24.4%	519	26.6%
6	466	32.3%	501	34.1%	528	35.7%

Service share calculations

- A3.29 In this statement we use service shares at the exchange level, in addition to the number of POs present, when defining the geographic boundaries. In particular we use BT service shares in situations where three POs are present (or forecast to be present) as a way of identifying the more competitive exchanges within this group. The service share threshold we use is 50 per cent.
- A3.30 It is forecast that by the end of December 2010 there will be 449 exchanges where three POs are present. If we assess BT's service share in these exchanges, using actual data as of June 2010, we find that BT's share is less than 50 per cent in 103 of these exchanges.
- A3.31 However, given that we are allowing for forecast future rollout in this assessment we need to also allow for any expected future changes in service shares. In particular, LLU operators will often build up a customer base using BT's wholesale products and then when they unbundle an exchange will migrate these customers onto their LLU based network. Using the BT Wholesale data we are able to identify the number of customers that LLU operators have, based on BT's wholesale products, in exchanges that they have unbundled (or plan to unbundle). We believe that it is reasonable to assume that these customers will be migrated and we can adjust the future service shares accordingly.
- A3.32 By allowing for customer migration, BT's service share will be less than 50 per cent in 196 of the 449 exchanges where three POs are present. Table A3.5 summarises these breakdowns.

Table A3.5: Exchanges where three POs are present broken down according to BT's service share with and without customer migration

	Before customer migration		After customer migration	
	No. Exchs	Coverage	No. Exchs	Coverage
BT market share \geq 50%	346	6.7%	253	4.8%
BT market share < 50%	103	3.0%	196	4.9%

Grouping exchanges

A3.33 As discussed in section 3, we define three geographic markets by grouping BT's local exchanges based on the following criteria:

- Market 1: exchanges where only BT is present;
- Market 2: exchanges where 2 POs are present or forecast and exchanges where 3 POs are present or forecast but where BT's share is greater than or equal to 50 per cent; and
- Market 3: exchanges where 4 or more POs are present or forecast and exchanges where 3 POs are present or forecast but where BT's share is less than 50 per cent.

A3.34 The size of each of these markets, both number of local exchanges and coverage, based on actual data as of June 2010 and forecast data to December 2010 and the additional uncommitted potential rollout, is shown in Table A3.6.

Table A3.6: Market sizes based on actual and forecast data

Market	Jun 10		Dec 10		Uncommitted	
	No. Exchs	Coverage	No. Exchs	Coverage	No. Exchs	Coverage
Market 1	3,587	14.3%	3,389	11.7%	3,333	11.0%
Market 2	640	12.0%	660	10.0%	631	8.6%
Market 3	1,361	73.0%	1,540	77.6%	1,625	79.7%

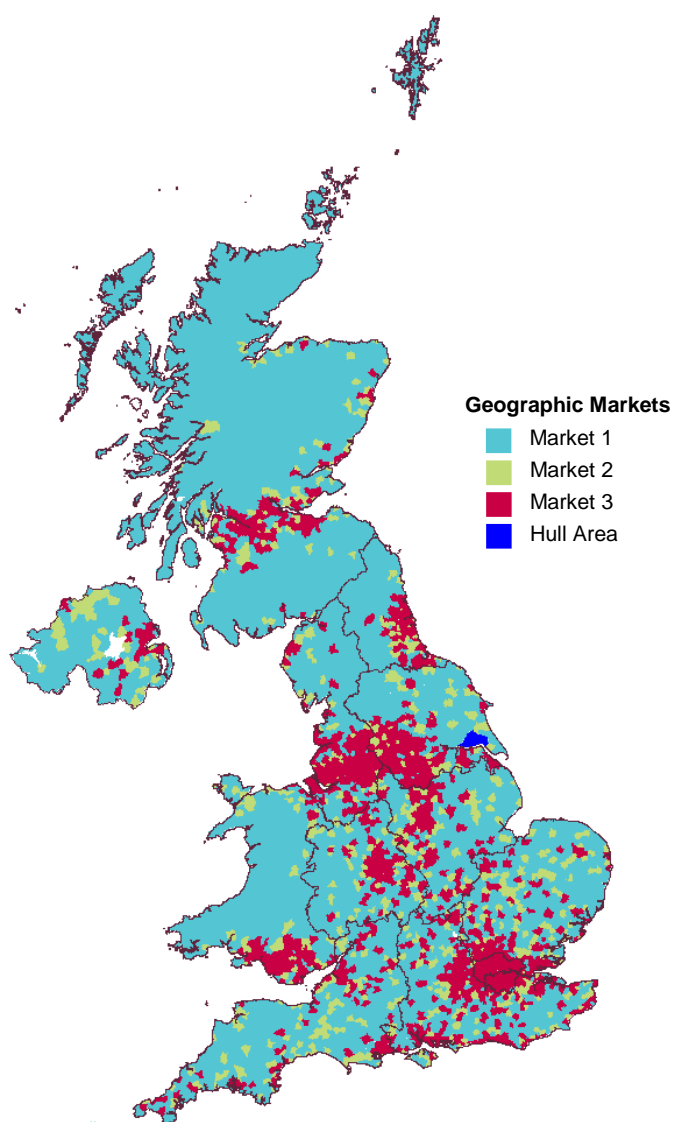
Geographic markets

A3.35 Although operators have provided forecast rollout plans beyond December 2010, these plans are not committed. We therefore considered that it would be inappropriate to use these when defining the geographic markets. We, therefore, considered it appropriate to use the committed forecast rollout plans to the end of December 2010. Based on this we identify the new geographic markets as shown in Table A3.7.

Table A3.7: New geographic market definition

Market	No. Exchs	Coverage
The Hull Area	14	0.7%
Market 1	3,389	11.7%
Market 2	660	10.0%
Market 3	1,540	77.6%

Figure A3.7: New geographic markets on a map



Sensitivity analysis

A3.36 In order to identify the geographic markets it has been necessary for us to make a number of judgements in identifying clear and unambiguous criteria for delineating the proposed market boundaries. In particular, we have investigated the stability of the market sizes for small variations around the amount of cable overlap and BT market share thresholds, and the effect of considering customer migration. The tables below show how sensitive the geographic market definition is to changes in these parameters.

Table A3.8: Sensitivity to changes in the cable overlap threshold in an exchange

	Overlap > 55%		Overlap > 65%		Overlap > 75%		Overlap > 85%	
	No. Exchs	Coverage	No. Exchs	Coverage	No. Exchs	Coverage	No. Exchs	Coverage
Market 1	3,372	11.5%	3,389	11.7%	3,413	11.9%	3,434	12.1%
Market 2	665	10.0%	660	10.0%	651	10.1%	640	10.1%
Market 3	1,552	77.8%	1,540	77.6%	1,525	77.3%	1,515	77.1%

A3.37 Change in the minimum cable overlap value has an effect on all the three markets. Particularly, a lower overlap threshold will shift more exchanges from Market 1 to Market 2 and Market 3, and vice versa. Between minimum overlap values of 55 per cent and 85 per cent, the largest variation in the size of any one market is about 0.7 per cent.

A3.38 When we further reduce the overlap threshold from 55 per cent to 50 per cent, Market 1 reduces in size by 15 exchanges which cover 0.2 per cent of UK DPs and Market 2 increases in size by the same 15 exchanges. There is, however, no change at all to Market 3.

Table A3.9: Sensitivity to changes in BT's service share threshold in exchanges where three POs are present and with and without customer migration

	Without migration				With migration			
	BT share < 40%		BT share < 50%		BT share < 40%		BT share < 50%	
	No. Exchs	Coverage	No. Exchs	Coverage	No. Exchs	Coverage	No. Exchs	Coverage
Market 1	3,389	11.7%	3,389	11.7%	3,389	11.7%	3,389	11.7%
Market 2	812	13.7%	753	12.0%	781	13.0%	660	10.0%
Market 3	1,388	73.9%	1,447	75.6%	1,419	74.6%	1,540	77.6%

A3.39 Changing the threshold for BT's service share in exchanges where three POs are present, only affects Market 2 and Market 3. Similarly, whether customer migrations in these exchanges are taken into account or not also only affects Market 2 and Market 3. Table A3.9 shows that changing the service share threshold from 50 per cent to 40 per cent results in approximately a 3 per cent change in the size of the markets. Using the 50 per cent service share threshold, the affect of customer migration is 1.9 per cent on the size of the markets.

Comparison between previous (May 2008) and new market definitions

A3.40 Table A3.10 shows the current (May 2008) and the new geographic market definitions.

Table A3.10: Comparison between previous (May 2008) and new market definitions

	Previous (May 2008) markets		New markets	
	No. Exchs	Coverage ¹⁴⁶	No. Exchs	Coverage
Market 1	3,720	16.8%	3,389	11.7%
Market 2	670	13.7%	660	10.0%
Market 3	1,197	68.7%	1,540	77.6%

A3.41 Table A3.11 shows how these changes materialise at the exchange level. Overall, a total of 4,900 exchanges remain in the same markets, covering 85.2 per cent of UK DPs.

Table A3.11: Variation of market definition at the exchange level

	No. Exchs	Coverage
No change in market	4,900	85.2%
Market 1 unchanged	3,383	11.6%
Market 2 unchanged	327	5.0%
Market 3 unchanged	1,190	68.5%
Market 1 to Market 2	326	4.8%
Market 1 to Market 3	11	0.4%
Market 2 to Market 1	5	0.0%
Market 2 to Market 3	338	8.6%
Market 3 to Market 1	-	0.0%
Market 3 to Market 2	7	0.2%
New in Market 1	1	0.0%
New in Market 2	-	0.0%
New in Market 3	1	0.0%
Total	5,589	99.3%

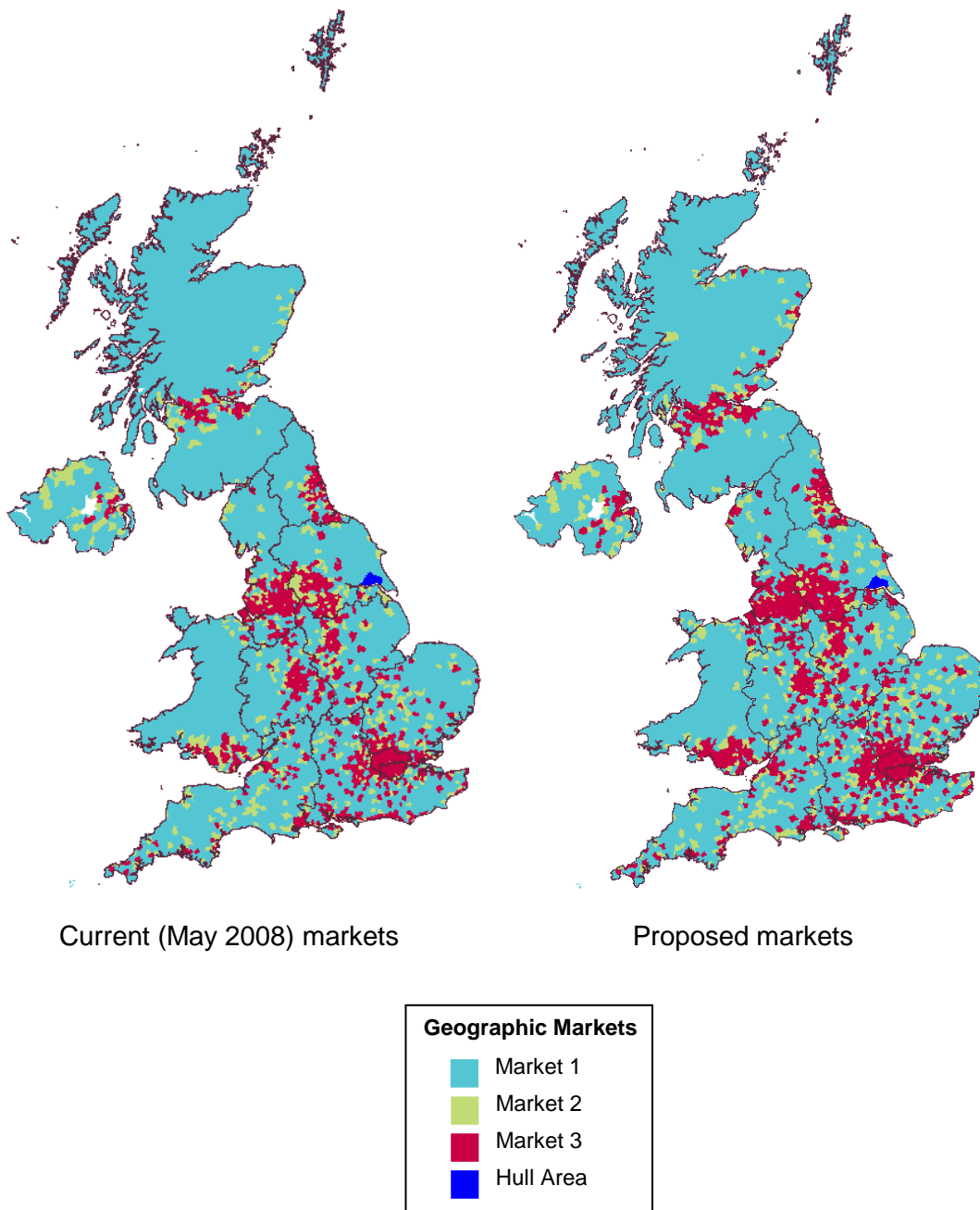
A3.42 The few cases where exchanges have moved to a less competitive market (from Market 2 to Market 1 or from Market 3 to Market 2) are explained by two main factors. Firstly, there are exchanges where Virgin Media marginally exceeded the

¹⁴⁶ Any variation from information presented in the 2008 WBA review are due to updates in the underlying OS data we have used to plot the markets.

65 per cent overlap threshold in the previous market review, but does not exceed it any more. These changes are due to Virgin Media improving its information on its network coverage and small changes in the Ordnance Survey delivery point data for UK postcodes. Secondly, consolidation in the broadband market has resulted in a reduction in the number of POs present. In particular, the acquisition of Tiscali by Talk Talk in 2009 and the recent agreement between BT and Orange.

A3.43 Figure A3.8 makes a visual comparison between the current (May 2008) and the new market definitions.

Figure A3.8: Comparison between previous (May 2008) and new market definitions



Annex 4

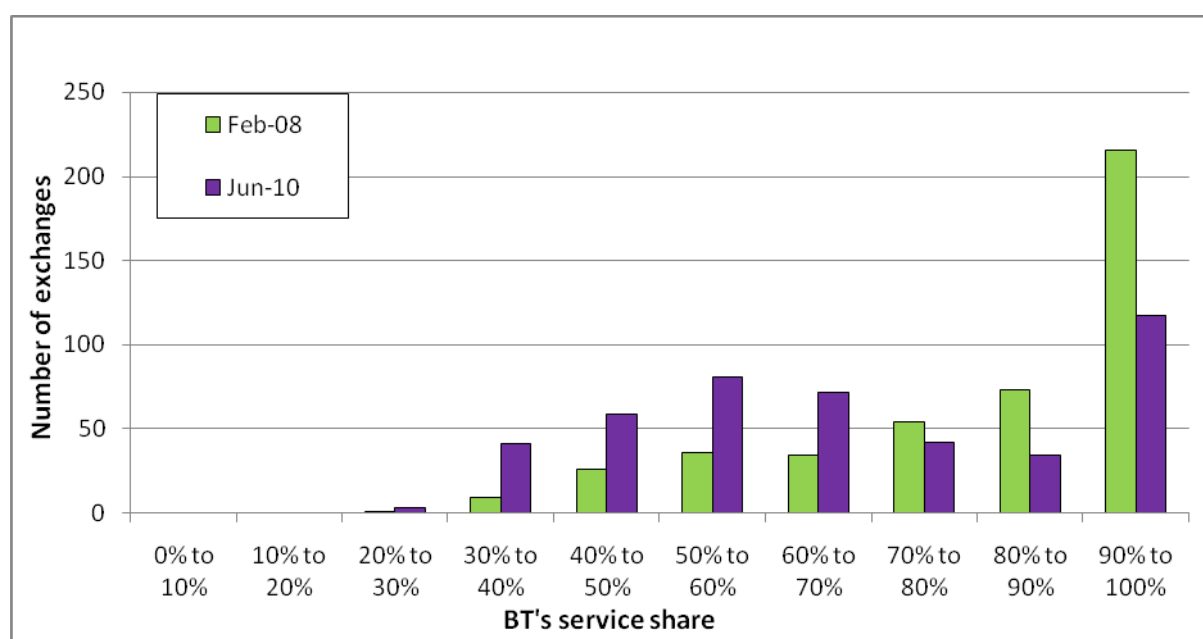
Distribution and evolution of service shares

A4.1 In this Annex we present data on BT's service share at the exchange level. In particular we show the distribution of BT's service share within the defined geographic markets and how it has evolved over time.

Service share distribution and evolution in exchanges where three POs are present

A4.2 As set out in this statement we introduce an exchange level service share criterion in exchanges where three POs are present or forecast when defining the geographic markets. There are 449 exchanges where three POs are present or forecast and Figure A4.1 shows the distribution of BT's service share within these 449 exchanges and how it has evolved over time.

Figure A4.1: Distribution of BT's service share in the 449 exchanges where three POs are present or forecast



A4.3 As can be seen from Figure A4.1, competition in the 449 exchanges where three POs are present has resulted in a sizable shift in the distribution of BT's service share between February 2008 and June 2010 with BT's service share being below 50 per cent in 103 exchanges

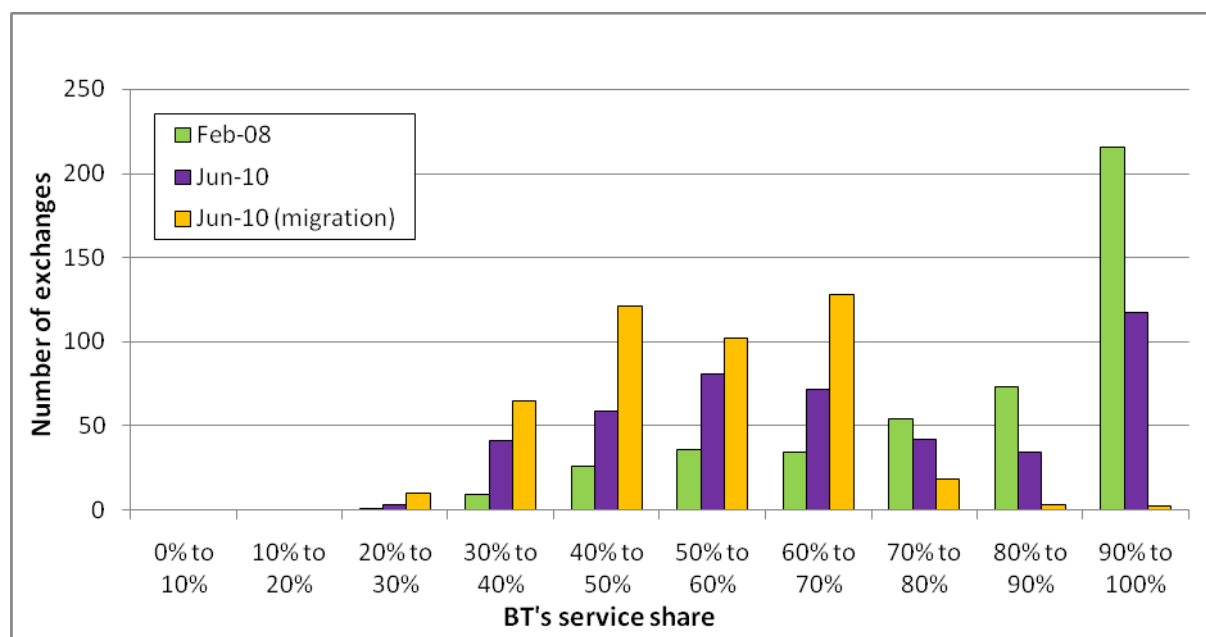
A4.4 However, Figure A4.1 above shows that there are also 117 exchanges where BT's market share exceeds 90 per cent. This is due to forecast rollout in exchanges where BT is currently the only provider or due to recent deployments where the effects of new entry are not yet demonstrated.

A4.5 As described in section 3, we use BT's service share at the exchange level in exchanges where three POs are present as of June 2010, or forecast to be present

by December 2010. To further take account of expected future changes in service shares, we adjust the service shares of LLU POs that are present in these exchanges to account for the potential for these POs to migrate their customer base from BT's wholesale products to their own LLU based network.

- A4.6 Figure A4.2 below shows how current (June 2010) BT market share is affected following customer migration in the 449 exchanges where three POs are present or forecast to be present by December 2010.

Figure A4.2 Distribution of BT's service share in the 449 exchanges where three POs are present or forecast including migration



- A4.7 The inclusion of customer migration primarily affects exchanges where BT currently holds large market share as these are exchanges where currently two or one (BT only) POs are present. The LLU POs that plan to unbundle these exchanges already have a customer base using BT's wholesale products that could be migrated on their own LLU based network when the forecast deployment is implemented.
- A4.8 In this statement we include BT's service share as an additional criterion in exchanges where three POs are present. This means that where three POs are present and BT's service share (after migration is taken into account) is equal to or more than 50 per cent the exchange is allocated to Market 2. Where three POs are present and BT's market share after migration is below 50 per cent, the exchanges are allocated to Market 3. Figures A4.3 and A4.4 show how BT service shares in these exchanges has evolved since February 2008 and the effect of migration, for exchanges that are now allocated to Market 2 and Market 3, respectively.

Figure A4.3 BT's share evolution in 253 exchanges where three POs are present or forecast to be present by December 2010 and that are included in Market 2

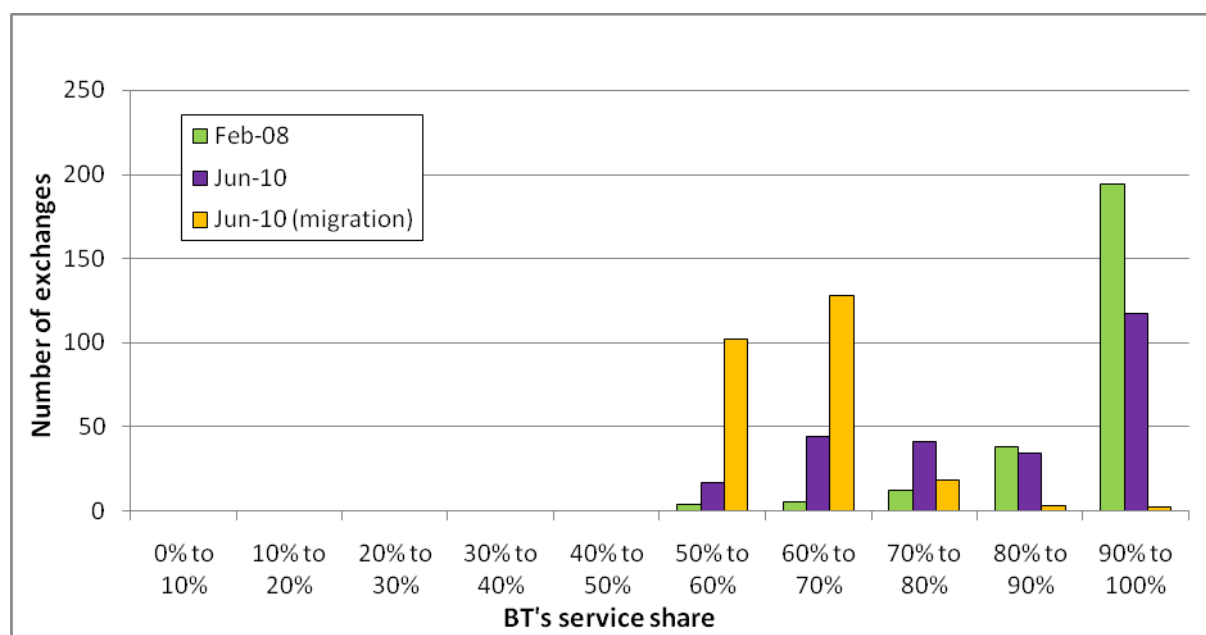
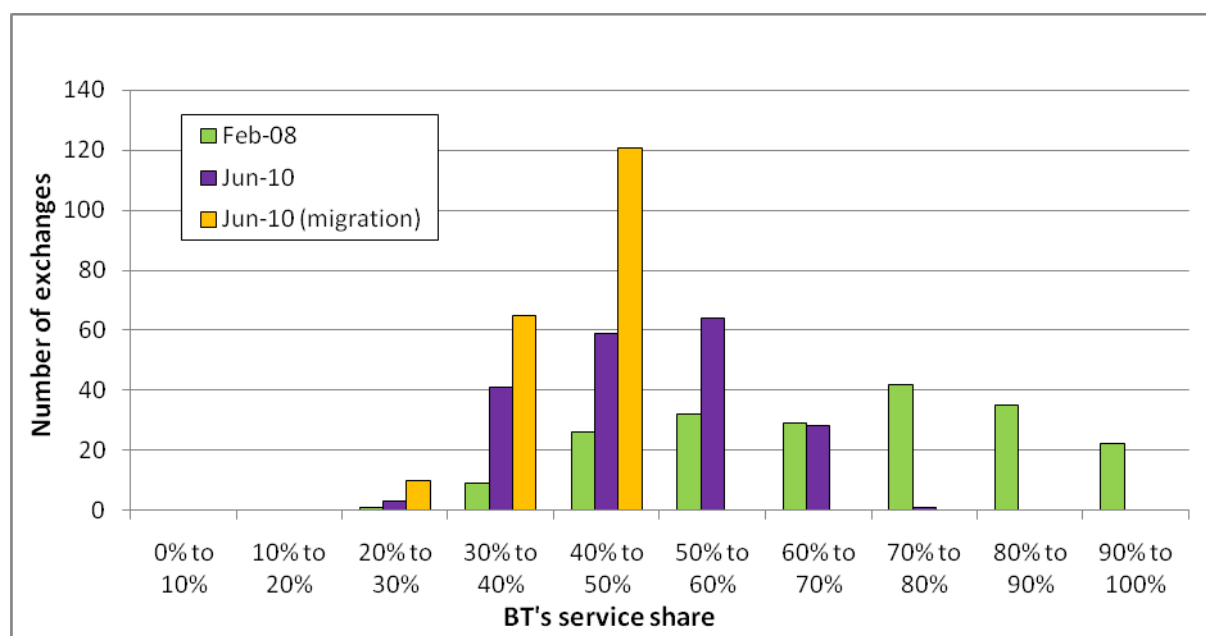


Figure A4.4 BT's share evolution in 196 exchanges where three POs are present or forecast to be present by December 2010 that are included in Market 3

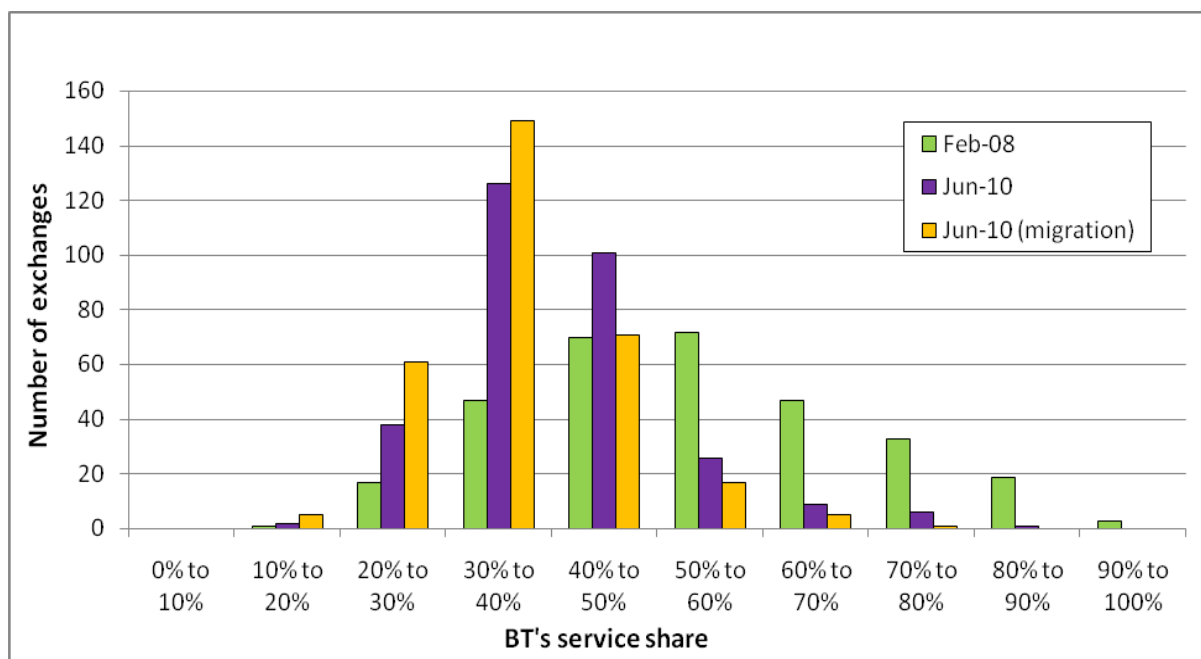


A4.9 Comparing Figures A4.3 and A4.4 above we see that all but one exchange where three POs are present and BT's service share is over 70 per cent (pre-migration) remain in Market 2. Exchanges where BT has pre-migration share between 50 per cent and 70 per cent are split between the two markets with Market 3 attracting those where a new LLU entrant has already significant service shares through a BT wholesale product.

Service share distribution and evolution in exchanges where four POs are present

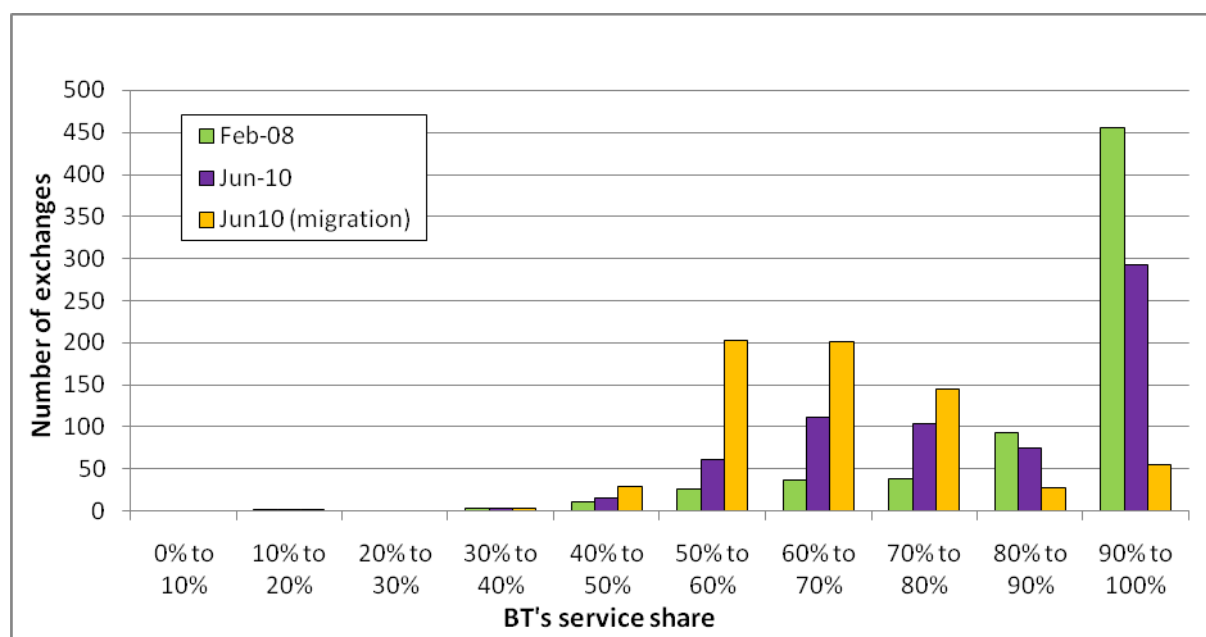
A4.10 We have not set a market share criterion in exchanges where four POs are present or forecast to be present. There are 309 exchanges where four POs are present in June 2010. Figure A4.5 shows the BT service share evolution since February 2008 in these exchanges. It shows that there is a clear reduction in the number of exchanges where BT has a high share. At present there are only 42 (out of the 309) exchanges where BT has a share above 50 per cent and if forecast entry and migration are accounted for this figure drops to 23.

Figure A4.5 Evolution of BT's market share evolution in 309 exchanges where four POs were present in June 2010, including the effect from customer migration



Service share distribution and evolution in Market 2

A4.11 In the new market definition we include 660 exchanges in Market 2. Figure A4.6 shows the distribution of BT's service share within these 660 exchanges and how it has evolved over time (including the effects of migration).

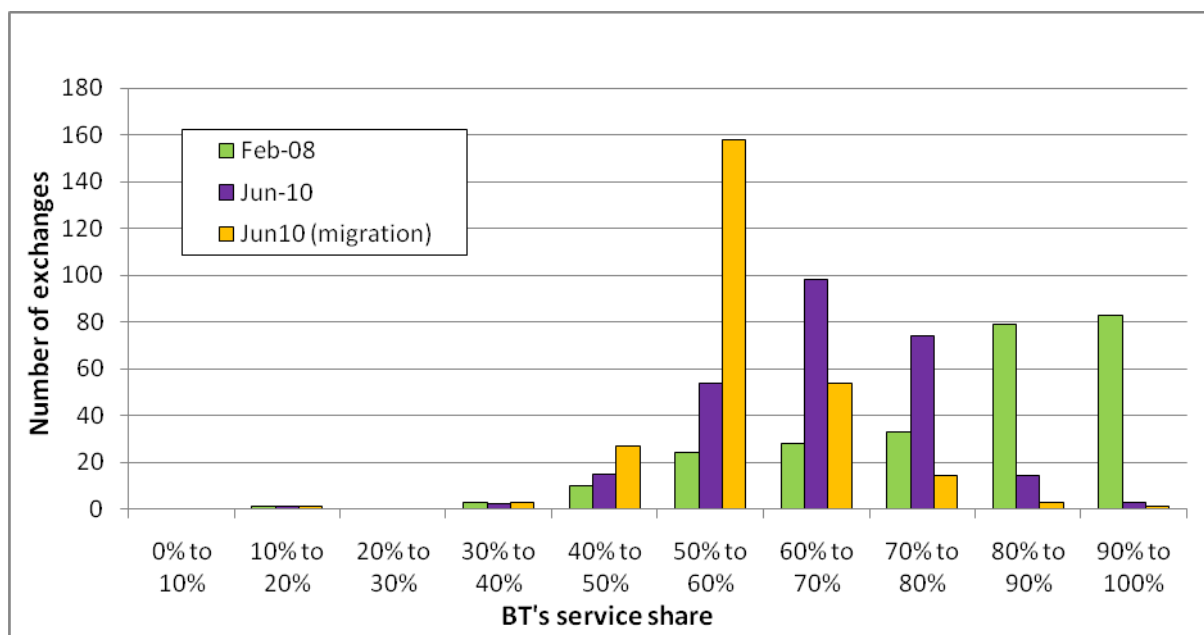
Figure A4.6: Distribution of BT's service share in Market 2

A4.12 This shows that there are a large number of exchanges (292) where BT's service share is over 90 per cent as per June 2010. Although there are a small number of cases where BT's share has stayed high even though entry occurred some time ago (five exchanges), this is mainly a result of the forward looking assessment, which has led us to include exchanges in Market 2 based on the forecast rollout plans of POs. This means that at the current time BT is the only operator present in 182 of these exchanges. In addition, 105 of these exchanges have been unbundled only recently. Accordingly, in these exchanges, BT will have a service share of (or close to) 100 per cent. However, we believe that, following entry by other POs, BT's service share will reduce in these exchanges and will develop in a similar manner to those exchanges in Market 2 where entry occurred in the past.

A4.13 Figure A4.6 shows the effect of customer migration. This primarily affects market shares in exchanges where BT is currently the only service provider. The effect is smaller in exchanges where two or three POs have been present for some time as the number of off-net customers is likely to be small.

A4.14 Of the 660 exchanges in Market 2, 261 had two or three POs present in February 2008. The evolution of BT's shares in these 261 exchanges is shown in Figure A4.7.

Figure A4.7: Distribution of BT's service share in the 261 exchanges in Market 2 in which two or three POs were present in February 2008

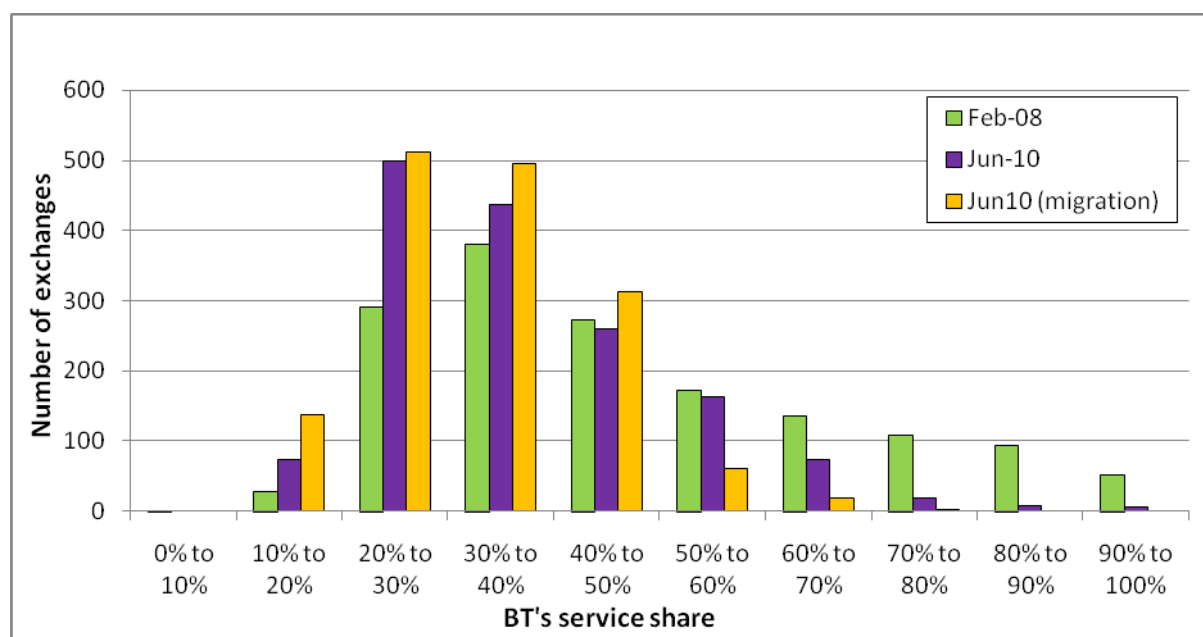


A4.15 Figure A4.7 shows clear reductions in BT's share over time. In particular, there is a significant reduction in the number of exchanges where BT's share is over 80 per cent. The other key feature shown in Figure A4.7 is that in the vast majority (243 out of 261) of these exchanges, BT's share remains above 50 per cent. Even when migration is taken into account, BT's share remains over 50 per cent in 230 exchanges.

Service share distribution and evolution in Market 3 exchanges

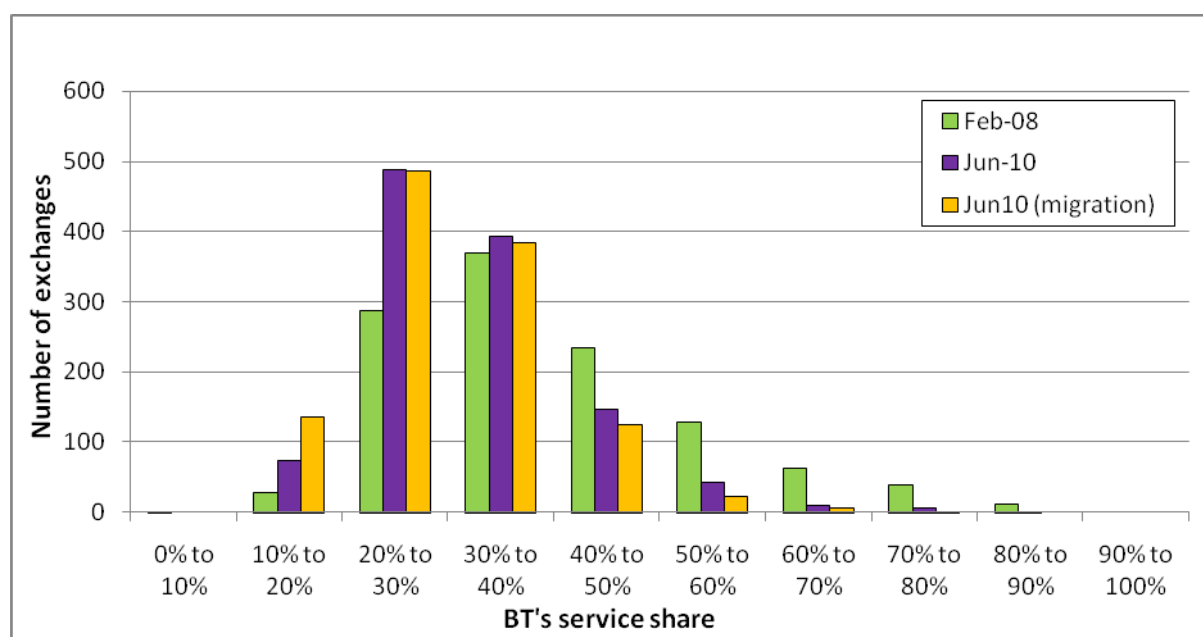
A4.16 In this statement we have concluded to include 1,540 exchanges in Market 3. One of these is a new exchange for which we do not have historic data. Figure A4.8 shows the distribution of BT's service share within the other 1,539 exchanges and how it has evolved over time.

Figure A4.8: Distribution of BT's service share in Market 3



A4.17 Of the 1,540 exchanges in Market 3, 1,163 exchanges had four or more POs present in February 2008. The evolution of BT's shares in these 1,163 exchanges is shown in Figure A4.9.

Figure A4.9: Distribution of BT's service share in the 1,163 exchanges in Market 3 in which four or more POs were present in February 2008



A4.18 Excluding the effects of migration, this shows that in the majority of these exchanges, BT's share is less than 40 per cent (955 exchanges) and there are few exchanges (61 exchanges) where BT's share is over 50 per cent. When migration is also accounted for, there are only 31 exchanges where BT's share is over 50 per cent.

- A4.19 Comparison between Figures A4.8 and A4.9 shows that the increase in exchanges in Market 3 does not materially affect the overall market share distribution. The cases where BT has a higher share in Figure A4.8 are due to the forecasted or very recent deployment in these exchanges or are exchanges where three POs are present but BT's share is below 50 per cent, as per our adopted market definition in section 3. As set out in section 3 we consider that in these exchanges BT's share will continue to fall to be more in line with the shares seen in Figure A4.9