# Review of the wholesale broadband access markets

## Consultation on market definition, market power determinations and remedies

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Consultation

Publication date: 11 July 2013

Closing Date for Responses: 25 September 2013

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Section 1

# Summary

1.1 Broadband is increasingly important to both residential and business consumers. It allows them access to a range of content and services. Effective retail competition plays a key role in ensuring that consumers benefit from lower prices, greater choice, better quality services and innovation, and has helped to promote high levels of broadband adoption.

1.2 Competition in retail broadband services depends on effective competition in the wholesale broadband access (WBA) market, complemented by regulation where necessary.

1.3 Levels of competition in WBA vary significantly across the country. Urban areas are most likely to have a choice of broadband access providers, thanks to competition from both cable and operators who take advantage of local loop unbundling (LLU). The intensity of competition broadly decreases with population density, as the economics of rolling out broadband infrastructure become more difficult.

1.4 However, these geographic variations are evolving as the market develops. Since 2010, competition has spread to more rural areas as communications providers have continued to roll out their broadband networks, but it has still not reached the most remote areas and is unlikely to do so.

1.5 Our market definition has evolved in line with market developments: whereas in 2010 we defined four markets, we now propose only to define three: Market A – where there are only one or two potential significant wholesale broadband providers present or forecast to be present, which accounts for 9.6% of UK premises; Market B – in which we believe there is effective competition, accounting for 89.7% of premises; and the Hull Area – 0.7% of UK premises, where KCOM is the only significant provider.[1]

1.6 As we propose that there is effective competition in Market B we do not propose any regulation. In addition, we propose to remove regulation in those parts of Market B where there is currently regulation – approximately 12% of UK premises. In both Market A and the Hull Area we propose to retain the general access, non discrimination and transparency obligations that are currently in place.

1.7 In Market A we also propose to implement a price control at a level within the range CPI-7% to CPI-1%, together with cost accounting obligations.

## Introduction and context

1.8 The purpose of this review is to analyse the state of competition in the WBA market and to consider the appropriate form of ex ante regulation, if any, that should be imposed in that market. The market review process requires us to identify any competition problems and impose appropriate remedies; in order to do so we have to identify and define relevant markets that are susceptible to ex ante regulation and assess whether any operator has significant market power (SMP).

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[1] See Sections 3 and 4.

1.9 Competition in the provision of retail broadband services depends on effective competition at the wholesale level, or, where this is not occurring, effective regulation. The WBA market sits between the Wholesale Local Access (WLA) market and the retail broadband market. The WLA market concerns access to the fixed telecommunications infrastructure – the connection between consumers' premises and the telecommunications network. It is therefore critical for all fixed line services. We published a consultation on the WLA market recently.[2] 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.

1.10 This is now the fourth such review of the WBA market, the last of which we completed in 2010/2011.[3] In that review we defined four markets:

- the Hull Area, where KCOM was the sole supplier of fixed broadband access;
- Market 1: exchanges where only BT was present or forecast to be present;
- Market 2: exchanges where two Principal Operators (including BT) were present or forecast to be present or where three were present or forecast to be present, but BT's market share was 50% or more; and
- Market 3: exchanges where four or more Principal Operators were present or forecast and exchanges where three Principal Operators were present or forecast but where BT's share was less than 50 per cent.

1.11 We imposed general access, non discrimination and transparency conditions on BT in Market 1 and Market 2 and KCOM in the Hull Area, as well as a charge control and cost orientation on BT in Market 1, and cost orientation but no charge control in Market 2. This was particularly to take account of the likelihood of further entry in Market 2.

1.12 Since 2010 we have seen the market continue to evolve. LLU has been rolled out further, but that roll-out is now slowing considerably as operators reach the less profitable exchanges. In parallel, there has been further consolidation among LLU operators, with the latest development being Sky's purchase of O2. In addition, fibre-based 'superfast' broadband services are increasingly available in many parts of the country, with state funding via Broadband Delivery UK (BDUK) planned in some of the remaining areas.

## Market definition and market power

1.13 The first step in the market review process is to define the relevant market and assess market power.

1.14 We have looked at the definition of the WBA market from a product and geographical point of view both at the retail and the wholesale levels. These are markets that have

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[2] http://stakeholders.ofcom.org.uk/consultations/fixed-access-market-reviews/?utm_source=updates&utm_medium=email&utm_campaign=famr-13

[3] http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf and http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf.

seen evolution since 2010 rather than revolution, so our view of the relevant markets remains fairly similar to three years ago.

1.15 We propose that the relevant WBA product market should remain:

> 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.

1.16 We propose that services provided via copper, cable and fibre access networks are within the same market. We consider that broadband access provided via mobile, wireless and satellite networks are outside the relevant market.

1.17 We currently regard all speeds of broadband access as being in the same wholesale market. There may come a point when this changes, but the timing of this is uncertain. In the period relevant to our review, we propose that superfast products are likely to be constrained by lower speed offerings.

1.18 We propose to identify three distinct geographic markets, to reflect the geographical differences in competition and supply conditions:[4,5]

- Market A: exchange areas where there are no more than two Principal Operators (POs)[6] present or forecast to be present, which accounts for 9.6% of UK premises.
- Market B: exchange areas where there are three or more POs present or forecast to be present, which accounts for 89.7% of UK premises.
- The Hull Area: 0.7% of UK premises.

1.19 We have analysed the conditions of competition in the three markets we have identified, and our proposed findings on market power are that:

- BT has SMP in the provision of WBA services in Market A.
- No operator has SMP in the provision of WBA services in Market B.
- KCOM has SMP in the provision of WBA services in the Hull Area.

## Remedies

1.20 In 2010, we found 77.6% of the country to be effectively competitive. In this review, we propose that the competitive areas of the country – Market B – have extended

[4] See Section 4.
[5] Based on analysis of data gathered in December 2012. We plan to re-run our analysis using the most up-to-date data on the number of POs which have entered, or are forecast to enter, an exchange area before we issue our statement. We will re-allocate exchanges to Market A and Market B accordingly.
[6] We explain what we mean by 'Principal Operator' in Section 4.

further. We propose no regulation in this area and to remove regulation within this area where we have previously imposed it.

1.21 Based on our proposed finding of market power in Market A, we consider there is a risk of various competition problems including: refusal to supply, undue discrimination, margin squeeze and excessive pricing. We propose to place general access and non-discrimination obligations on BT.[7] These obligations would ensure that other CPs have the opportunity to use wholesale products supplied by BT to compete effectively at the retail level. We also propose to impose obligations requiring BT to publish information that provides transparency of the services it provides in Market A. We propose 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.

1.22 We also propose that BT's services in Market A should be subject to a price control in order to ensure that BT does not set excessive prices for wholesale broadband services which would ultimately be passed on to consumers. We propose to use a CPI-X charge control. We propose that the value of X should be within a possible range of -7% to -1%, with a central case of CPI-4%.

1.23 We have used a more aggregated model to calculate the value of X than we used in setting the charge control in 2011. There are significant uncertainties in forecasting both revenues and costs in this market, which means that a highly detailed model would risk spurious accuracy. We also consider a more simplified model to be a proportionate approach now that we are controlling prices in only a relatively small part of the overall market.

1.24 We are also proposing to set sub-caps on the following services:

- Contracted bandwidth.
- End-user access rental.
- Some ancillary services: migration, re-grade and cancellation charges.

1.25 In the Hull Area, we propose broadly to continue with the same set of regulatory obligations as we imposed in 2010 – i.e. general access, non-discrimination and transparency remedies.

[7] We propose to impose non-discrimination requirements on BT on an 'Equivalence of Inputs' basis.

**Section 2**

# Introduction

## Scope and purpose of this review

2.1 In this review we assess the state of competition in the wholesale broadband access (WBA) market. Where competition is not effective we assess how best we should regulate the behaviour of any company we find to have significant market power (SMP), which is a position of economic strength affording it power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.

2.2 The WBA market is positioned between the retail broadband market, which relates to the products that consumers buy, and the Wholesale Local Access (WLA) market, which relates to the physical connection between the consumer and the network. The WBA market concerns the wholesale broadband products that CPs provide for themselves and sell to each other.

2.3 On 3 July 2013, we published a consultation on the Fixed Access Market Review (the 2013 FAMR Consultation),[8] which includes the WLA market. That market review is considering what regulation we should put in place to allow access to infrastructure in the access network of any dominant providers. In reviewing the WBA market, we are concerned with assessing whether there is sufficient competition based on competing infrastructures, or whether we need to impose additional remedies at the WBA level in order that operators can provide competing retail offers.

2.4 We set out our market review process in summary below and we provide more detail in Annex 7.

## Background to this consultation

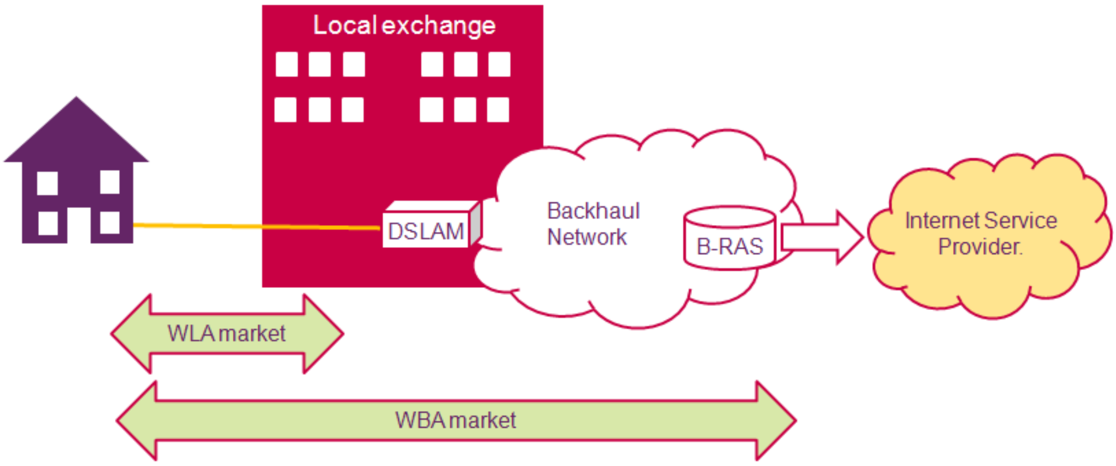
### WBA product description

2.5 WBA products offer the opportunity to enter the broadband market without the need to deploy an access network (or the need to use an upstream remedy such as LLU or VULA). WBA products require only a limited number of interconnection points to provide nationwide coverage. As such, WBA products can be used by new providers entering the market, or by providers wishing to offer services in exchange areas where they have not deployed their own access network. Given the economics of providing full national coverage by deploying alternate access networks or via LLU, all providers except BT are likely to be dependent on WBA products to some extent to provide service on a national basis.

2.6 Figure 2.1 illustrates WBA products using the current copper access network.

[8] http://stakeholders.ofcom.org.uk/consultations/fixed-access-market-reviews/?utm_source=updates&utm_medium=email&utm_campaign=famr-13

**Figure 2.1: WBA products using current generation copper access network**




2.7 The WBA product shown above is built using a number of elements:

- the access network considered in the WLA market review, which includes the connection from the customer's premise to the local exchange;[9]
- the broadband equipment at the local exchange (the Digital Subscriber Loop Access Multiplexor (DSLAM); [10]
- backhaul connectivity across the WBA provider's network; and
- the functionality of the Broadband Remote Access Server (B-RAS) which provides management of the end-user's internet sessions.

2.8 The characteristics of the WBA products support the main features of retail broadband offers:

- The maximum downstream speed is set by the specific equipment deployed by the WBA product provider at the local exchange. For products that use the copper access network, the distance between the customer premise and the local exchange is an additional factor.
- As well as the maximum downstream speed, retail products are differentiated by maximum download limits and, potentially, lower speed during peak hours or traffic shaping.[11] The CP will pay for use of the WBA provider's backhaul network and may set download and/or usage limits to reduce the amount of bandwidth used across the backhaul network.

2.9 Products in the WBA market offer CPs the ability to connect to the WBA provider's core network in order to provide broadband services to consumers. The handover of traffic from customers to the CP is aggregated at a limited number of points. The

[9] As discussed in the 2013 FAMR Consultation, Sub-Loop Unbundling is a remedy also offered in the WLA market. This provides access at the cabinet instead of the local exchange. However the general characteristics of WBA products built using SLU would be the same.
[10] CPs may provide voice and broadband over the copper access line by deploying a Multi-Service Access Node (MSAN) rather than a DSLAM. However, the broadband service provided over the MSAN is equivalent to that provided via a DSLAM.
[11] When the network is busy, an ISP may choose to limit the speed at which some bandwidth hungry traffic (such as peer-to-peer networking or video on demand services) may operate.

customer access is controlled by the WBA product provider, allowing much less innovation opportunity to the interconnected CP than it could achieve by deploying its own network. Differentiation can be offered only at the services level.

2.10 BT provides a number of WBA products using the network architecture shown in Figure 2.1 above. The DSLAM may support ADSL (which offers a headline speed of 8Mb/s downstream) or ADSL2+ technology (deployed as part of BT's 21st Century Network (21CN) deployment and offers headline speeds up to 24Mbit/s). Using ADSL, BT offers the following products:

- DataStream, which is a legacy product based on Asynchronous Transfer Mode (ATM) technology.

- IPstream, which provides an IP services offering aggregated access for CPs.

2.11 Using ADSL2+ technology, BT provides the Wholesale Broadband Connect (WBC) product.

2.12 BT is also deploying a Next Generation Access (NGA) network, using Fibre to the Cabinet (FTTC) and Fibre to the Premise (FTTP). FTTC means that the DSLAM is located in the street cabinet (which is located closer to the customer than the local exchange). The cabinet is then connected to the network using fibre whilst the copper network remains in place between the customer and the cabinet. The DSLAM in the cabinet uses Very high bit rate DSL (VDSL2) technology. FTTP replaces the access connection between the customer and the network completely and no DSLAM is needed.

2.13 BT provides access to its FTTC and FTTP deployments through the WBC FTTC/FTTP products. These offer headline speeds of up to 80Mb/s for FTTC and up to 330Mb/s for FTTP.

## The findings of the last WBA market review

2.14 In December 2010, we published our findings in the last WBA review.[12] In that review we concluded that the relevant product market was:

> "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 speeds greater than a dial up connection. This market includes both business and residential customers".

2.15 We considered the extent to which different competitive conditions existed in different geographic locations. We concluded that the key determining factor in this assessment was the number of Principal Operators (POs) – operators which are large enough to impose a material competitive constraint. We did not define POs via rigid thresholds, but designated as POs those operators which were relatively large, with a substantial presence across the UK as a whole, on the basis of network

[12] Review of the wholesale broadband access markets, Statement on market definition, market power determinations and remedies, 3 December 2010, http://stakeholders.ofcom.org.uk/binaries/consultations/wba/statement/wbastatement.pdf.

coverage. We considered six operators to be POs. Also, in considering competitive conditions, we took account of BT's share in the wholesale market.

2.16 Table 2.1 summarises the geographic markets identified[13] and the relevant SMP findings in the 2010 WBA Statement[14] and provides an overview of the remedies imposed on BT and KCOM.[15]

**Table 2.1: Geographic markets identified, SMP findings and remedies in the 2010 WBA Statement**

| Geographic Market | SMP finding | Remedy |
|---|---|---|
| **The Hull Area:** (0.7 per cent of UK premises). | KCOM holds a position of SMP in the provision of WBA services in the Hull Area. | • Requirement to provide network access on reasonable request<br>• Requirement not to unduly discriminate<br>• Requirement to publish a reference offer<br>• Requirement to notify charges, terms and conditions<br>• Transparency as to quality of service<br>• Requirement to publish technical information<br>• Requirement to account separately |
| **Market 1:** exchanges where only BT was present or forecast to be present (11.7 per cent of premises).[16] | BT holds a position of SMP in the provision of WBA services in Market 1. | Same remedies as in the Hull Area and:<br><br>• Basis of charges (cost orientation)<br>• Charge control<br>• Cost accounting |
| **Market 2:** exchanges where two POs were present or forecast and exchanges where three POs were present or forecast but where BT's market share was greater than or equal to 50 per cent (10.0 per cent of premises). | BT holds a position of SMP in the provision of WBA services in Market 2. | Same remedies as in the Hull Area and:<br><br>• Basis of charges (cost orientation)<br>• Cost accounting |
| **Market 3**: exchanges where four or more POs were present or forecast and exchanges where three POs were present or forecast but where BT's share was less than 50 per cent (77.6 per cent of premises). | No operator holds a position of SMP in Market 3. | No remedies |

[13] See Section 3 of the 2010 WBA Statement for further details.
[14] See Section 4 of the 2010 WBA Statement.
[15] See Section 5 of the 2010 WBA Statement.
[16] Forecasts for the market definitions in the 2010 WBA Statement were based on information gathered in June 2010.

2.17 In July 2011, following a further consultation on the design of the proposed charge control, we published a further statement setting out our conclusions on the charge control imposed on BT for WBA services in Market 1 areas (the 2011 WBA Charge Control Statement)[17]. TalkTalk Telecom Group plc (TalkTalk) appealed against the 2011 WBA Charge Control Statement on the basis that there had been a material change between the date of the prior SMP finding and the subsequent imposition of the SMP charge control condition. That appeal is ongoing.[18]

## Developments since the last WBA market review

### Investments in fixed broadband networks

2.18 Since the 2010 WBA Statement, we have seen a rapid increase in the average speeds of fixed access connections and increased availability of super-fast broadband. These improvements reflect the private and public investment being made in these networks.[19]

Investments in current generation access (CGA) broadband

2.19 Since the 2010 WBA Statement, broadband availability via LLU lines has increased from 80% of households in 2007 to 92% of households in 2011.[20] Recently, however, the rate of LLU roll-out has slowed down considerably as CPs are reaching the less profitable exchanges.

2.20 BT has continued to roll out WBC which, according to BT Group's 2013 Annual Report, is now in exchanges serving more than 90% of UK premises.[21]

Development of superfast broadband[22]

*BT*

2.21 In 2008, BT announced its intention to build its own NGA[23] network by investing £2.5bn in implementing a mixture of FTTC and FTTP.

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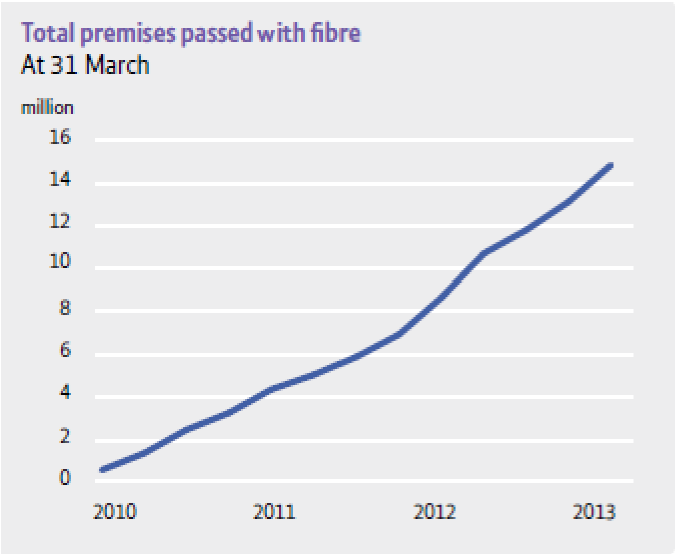
[17] WBA Charge Control - Charge control framework for WBA Market 1 services, 20 July 2011 http://stakeholders.ofcom.org.uk/binaries/consultations/823069/statement/statement.pdf
[18] Court of Appeal, Appeal No C3/2012/0785 *TalkTalk Telecom Group plc v Office of Communications & ors*, judgment pending.
[19] Ofcom, Infrastructure Report, 2012 Update, 16 November 2012, p 9. http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/infrastructure-report/Infrastructure-report2012.pdf.
[20] Ofcom, The Consumer Experience of 2012, January 2013, p.22, http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-12/Consumer_Experience_Researc1.pdf.
[21] BT Group plc's Annual Report & Form 20-F 2013, http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2013_BT_Annual_Report.pdf.
[22] Superfast Broadband (SFBB) is broadband connection that can support a maximum download speed of 30Mbps or greater. In the 2010 WBA Statement we defined CGA as services offered at up to 24Mbit/s, which was the maximum speed of services provided using ADSL2+. We are not aware of any services offering speeds above 24Mbit/s but less than 30Mbit/s and so our definition in this review is substantively the same as in the 2010 WBA Statement.
[23] According to the European Commission's Recommendation on regulated access to Next Generation Access Networks (the NGA Recommendation) "*Next generation access (NGA) networks (NGAs) means wired access networks which consist wholly or in part of optical elements and which*

2.22 Both these approaches provide higher speed broadband connections than is possible over the Current Generation Access (CGA)[24] network. As explained above, the headline downstream rate offered via CGA technologies (i.e. ADSL2+) is up to 24Mb/s. FTTC deployments use VDSL technology over the copper connection between the cabinet and the customer. This approach allows headline downstream speeds of around 80Mbit/s to be achieved.

2.23 BT is also deploying FTTP by using a Gigabit Passive Optical Network (GPON) network. A GPON network is shared between a number of end premises. Currently, headline downstream speeds of up to 330Mbit/s are available.

2.24 BT originally aimed to reach two-thirds (66%) of homes and businesses in the UK by 2015 but subsequently brought this target date forward by one year. According to BT Group's 2013 Annual Report, more than 15m premises have been passed and more than 1.5m premises have already been connected (see Figure 2.2).[25]

**Figure 2.2: BT's fibre roll-out progress**




*Source: BT Group plc's Annual Report & Form 20-F 2013*[26]

2.25 While these deployments change the access network and result in retail customers being able to receive much faster speeds, the characteristics of WBA products that run over and NGA networks are essentially the same (although the upstream inputs are different). This is because WBA products provide aggregated access to many

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*are capable of delivering broadband access services with enhanced characteristics (such as higher throughput) as compared to those provided over already existing copper networks. In most cases NGAs are the result of an upgrade of an already existing copper or co-axial access network". Commission recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA)* OJ L251/35, 20 September 2010, http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:251:0035:0048:EN:PDF

[24] Current generation access (CGA) network is a copper-based access network that can support a maximum download speed of 24 Mbit/s.

[25] BT Group plc's Annual Report & Form 20-F 2013, http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2013_BT_Annual_Report.pdf.

[26] BT Group plc's Annual Report & Form 20-F 2013, http://www.btplc.com/Sharesandperformance/Annualreportandreview/pdf/2013_BT_Annual_Report.pdf.

customers, and offer less scope for innovation than direct access to the more upstream infrastructure.

### *Other CPs*

2.26 Since March 2010, Virgin Media has been automatically upgrading existing cable network customers to faster broadband speeds as part of its ‘Double Speeds upgrade programme’.[27] According to Virgin Media’s Q1 2013 results, the number of customers on superfast speeds increased by 337,900 during Q1 2013, taking the total to approximately 2.5m or 58% of Virgin Media’s total broadband base.[28]

2.27 In the Hull Area, KCOM has announced plans for a fibre access network deployment. The first phase has now been completed with a total of 15,000 premises having been passed and the next phase has been announced with a target to pass a further 30,000 homes and businesses by March 2015. Also, in the Hull area, MS3 Communications is currently deploying a fibre network with an initial investment of £4.5m.[29]

2.28 Altogether, superfast services were available to 65% of UK households by June 2012.[30]

### *BDUK*

2.29 Beyond this, the UK government has expressed its commitment to the UK having the best superfast broadband network in Europe and wants superfast broadband networks to be available to 90% of homes and businesses by 2015, with a broadband connection of at least 2Mbit/s downstream available to the remainder. To help it realise its goals, it has allocated £530m funding to stimulate commercial investment in superfast broadband in “final third” areas through the BDUK scheme.[31] Because network operators who receive this funding must provide wholesale access to other CPs, the additional premises could also have access to a range of providers of superfast broadband services through this process.

2.30 Currently 44 local broadband projects are under the BDUK umbrella scheme.[32] The two bidders for the projects, as per the framework contract that was signed on 29 June 2012, are BT (Openreach) and Fujitsu.[33] Of these projects, 26 are currently in delivery (although more specific information about the roll-out in the relevant areas is not yet available) with BT winning the relevant bids.[34]

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[27] Virgin Media press release, 1 March 2012, http://mediacentre.virginmedia.com/Stories/Virgin-Media-s-Speed-Doubling-Starts-2380.aspx.
[28] Virgin Media’s Q1 2013 results, http://investors.virginmedia.com/phoenix.zhtml?c=135485&p=irol-irhome.
[29] http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/responses/KCOM.pdf.
[30] Ofcom, Infrastructure Report: 2012 update, 20 December 2012, p. 2.
[31] https://www.gov.uk/broadband-delivery-uk
[32] https://docs.google.com/spreadsheet/ccc?key=0Ah3sVRjT82kKdEltX0lJNjNVWWhNbjBnNGwxeHhqMHc#gid=0
[33] https://www.gov.uk/broadband-delivery-uk
[34] https://docs.google.com/spreadsheet/ccc?key=0Ah3sVRjT82kKdEltX0lJNjNVWWhNbjBnNGwxeHhqMHc&usp=sharing#gid=0

2.31 Furthermore, £100m has been allocated for superfast broadband to create ‘superconnected’ cities.[35] A total of 1.9 million homes and businesses in these cities will receive broadband connections of at least 80Mbit/s downstream, and there will also be funding for public outdoor wireless connectivity in these areas. The cities are: Belfast, Birmingham, Bristol, Cardiff, Edinburgh, Leeds and Bradford, London, Manchester and Newcastle. The government has since announced an additional £50m of superfast broadband funding for a second wave of ‘superconnected’ cities.[36] They are: Aberdeen, Brighton and Hove, Cambridge, Coventry, Derby, Derry/Londonderry, Newport, Oxford, Perth, Portsmouth, Salford and York.

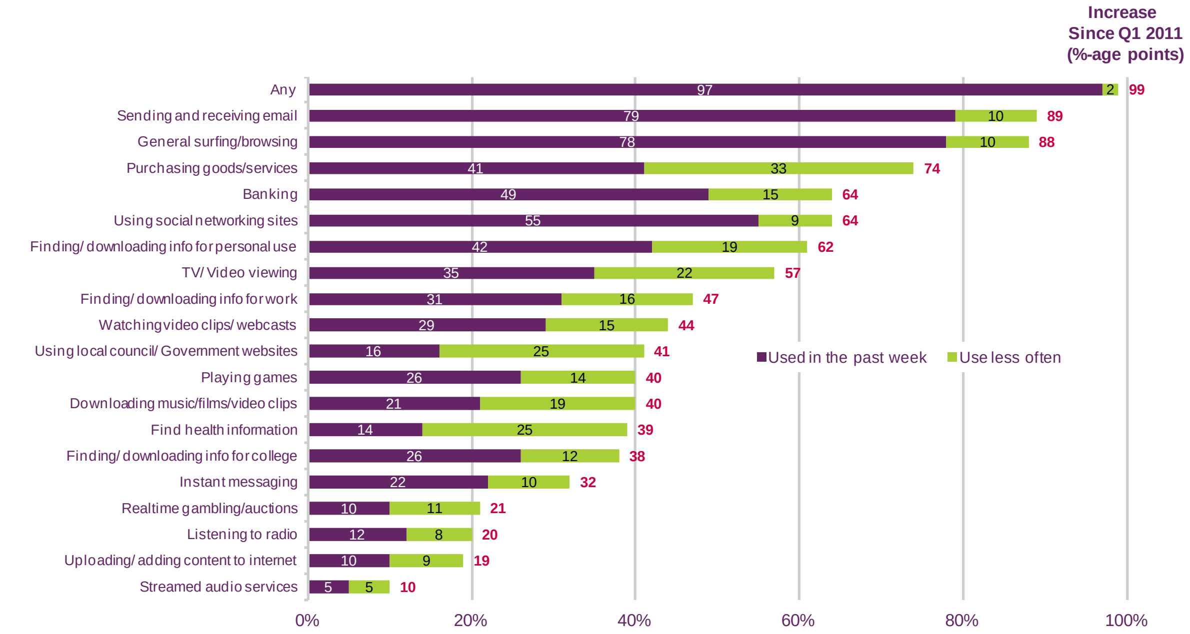
## Evolution in consumer usage

### Increased bandwidth requirements of residential consumers

2.32 Residential consumers use the internet for a range of activities, the most common of which include email, general browsing and purchasing goods or services, as shown in Figure 2.3. While these require relatively low bandwidths, applications that require higher speeds are also used by many broadband users, such as TV/video viewing, watching video clips/webcasts, and downloading music and films. More recently, we have seen growth in these areas (albeit relatively modest), with claimed use of the internet for TV/video viewing increasing by approximately five percentage points between 2010 and 2012.[37]

[35] Ten super-connected cities announced: http://www.culture.gov.uk/news/news_stories/8931.aspx.
[36] Ofcom, CMR 2012, p. 285 and also https://www.gov.uk/government/policies/transforming-uk-broadband/supporting-pages/investing-in-super-connected-cities.
[37] Ofcom, CMR 2012, figure 4.22 and figure 4.35.

**Figure 2.3: Claimed use of the internet for selected activities**

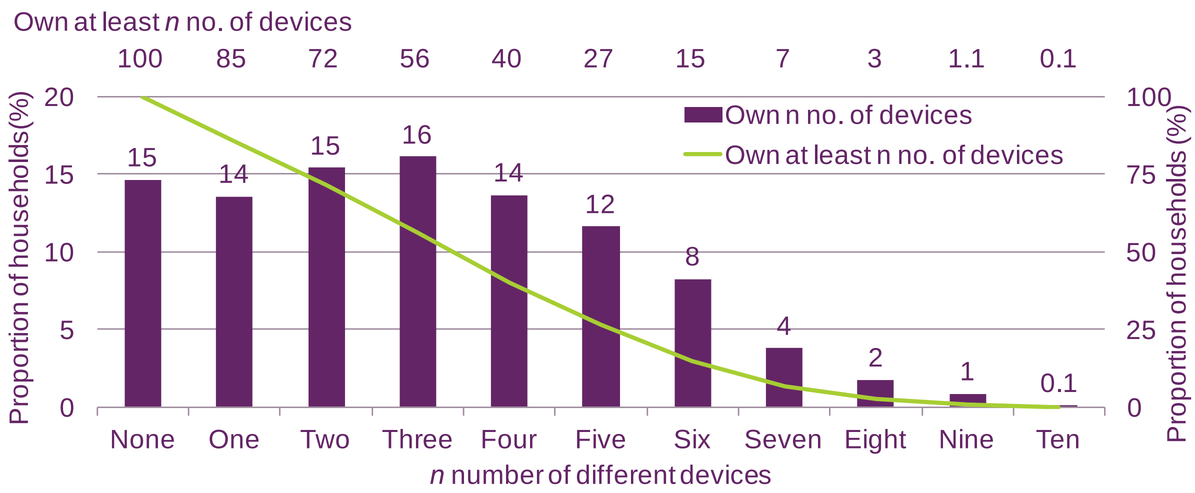



*Source: Ofcom, Communications Market Report (CMR) 2012, figure 4.35*[38]

## Use of multiple internet-enabled devices

2.33 In addition, there has been a change in the way that consumers are accessing the internet, which may also affect bandwidth requirements in future. In particular, where once a household might have had a single computer to access the internet, there is an increasing array of new internet-enabled devices, such as tablets and Smart TVs. In 2012, 72% of households owned at least two internet-enabled devices.

**Figure 2.4: Number of different internet-enabled devices per household**




*Source: Ofcom, CMR 2012, figure 4.23*

2.34 There is the potential for the high number of internet-enabled devices in a household to translate into multiple simultaneous users of a single broadband connection. Half

[38] http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr12/

of all respondents (53%) to a survey cited easy access to the internet as a reason for purchasing a tablet, with 87% of consumers stating that they primarily use their tablet in the home.[39] This may have implications for the quality of user experience, particularly if this in turn translates into multiple simultaneous users of bandwidth-heavy applications.

Increased bandwidth demand from businesses consumers

2.35 Businesses are also likely to demand increasing bandwidths in the future, for example as a result of increasing usage of centralised file hosting and file sharing, accessed via virtual private networks (VPNs). VPNs have become increasingly popular amongst many companies to accommodate the needs of remote employees and distant offices using a public network (usually the internet). Instead of using a dedicated connection such as a leased line, a VPN uses "virtual" connections routed through the Internet from the company's private network to the remote site or employee. The widespread take-up of broadband at home has meant that employees are able to work together without being restricted by their physical locations. Similarly, businesses are able to extend their geographic connectivity, provide additional networking opportunities and reduce operational costs compared to traditional wide area networks (“WANs”) using leased lines.

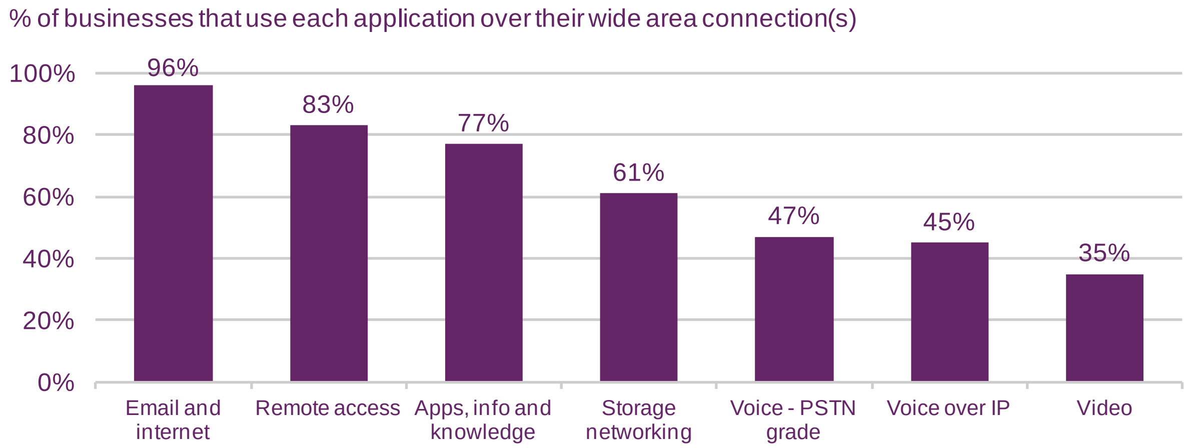
2.36 Other factors that increase business bandwidth requirements are:

- video conferencing between offices;
- remote monitoring and surveillance; and
- improved online presence and supply-side management.

2.37 Figure 2.5 shows the range of applications used by businesses over their network connections.

[39] Ofcom, CMR 2012, section 1.6.4.

**Figure 2.5 Applications used over businesses' wide area network connections[40]**



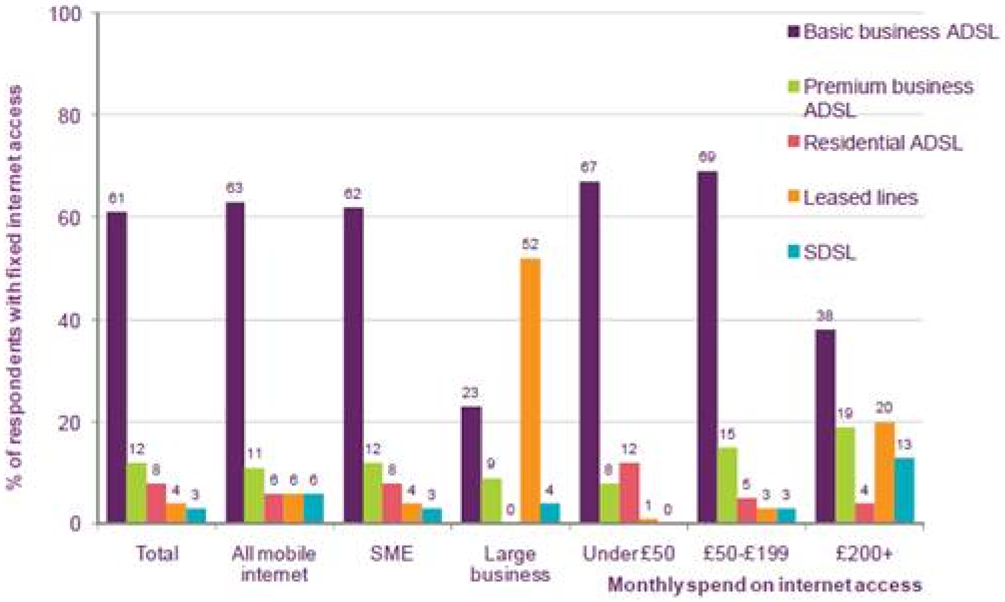

*Source: Ofcom, CMR 2012, figure 5.47*

2.38 The majority of businesses purchase broadband products based on ADSL technologies (rather than other options such as leased lines or symmetric services). In 2010, as Figure 2.6 shows, the majority of businesses (73%) purchased business ADSL services, while some (8%) purchased residential ADSL broadband services.

2.39 Some businesses purchase products aimed at the residential market. However, suppliers also offer products aimed at business consumers. These include features that are important to some businesses such as improved service levels compared to residential services, higher upstream speeds and lower network contention which reduces the potential for services to be slowed down in high traffic periods.

[40] The purpose of wide area networks is to connect business sites to other sites within the same business and/or to the internet.

**Figure 2.6: Methods of internet access by businesses**




*Source: Ofcom. Consumer research into use of fixed and mobile internet, 23 March 2010, Figure 4.1*[41]

2.40 Overall, we estimate that the majority of non-corporate fixed broadband connections (about 90%) are residential, with SME connections comprising less than 10% of the total.[42]

## Mobile services, including the launch of 4G services

2.41 Although the proportion of households in the UK using a mobile phone has remained relatively stable,[43] we have seen a significant increase in the use of mobile data – resulting from the increasing adoption and use of smart phones and tablets. Total data volumes over mobile broadband have more than doubled, with an average of 246MB of data consumed per year for every active SIM.[44]

2.42 As Figure 2.7 illustrates, over the past few years the number of mobile broadband connections, 3G enabled tablets and smart phones has grown.

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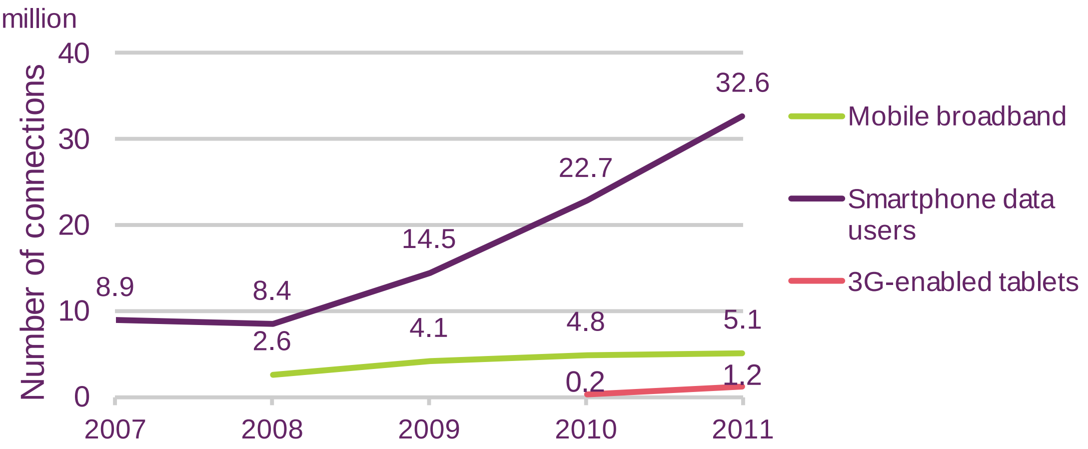
[41] http://stakeholders.ofcom.org.uk/binaries/consultations/wba/annexes/consumer_research.pdf
[42] Source: Ofcom/operators.
[43] Ofcom Infrastructure Report: 2012 Update, updated 20 December 2012, p 27.
[44] Ofcom Infrastructure Report: 2012 Update, updated 20 December 2012, p 2.

**Figure 2.7: Number of mobile broadband connections, 3G enabled tablets and users accessing the internet on their mobile devices**




*Source: Ofcom Infrastructure Report: 2012 Update, updated 20 December 2012, p 28*

2.43 Although the absolute levels of data carried over mobile networks are still much lower than for fixed networks, the growth rate of mobile broadband is much higher, as people tend to use their mobile devices ever more to access the internet (often in addition to their fixed line access). This is expected to increase with the commercial launch of 4G mobile services in the UK by all the mobile operators.[45]

2.44 In August 2012, Ofcom approved an application by the mobile phone operator Everything Everywhere (EE) to use its existing 1800 MHz spectrum to deliver 4G services. In October 2012, EE launched a commercial 4G service in some areas of the UK.[46]

2.45 In February 2013, Ofcom announced the winners of the 4G mobile spectrum auction, EE, Hutchison 3G UK Ltd, Niche Spectrum Ventures Ltd (a subsidiary of BT Group plc), Telefónica UK Ltd and Vodafone Ltd. It is expected that by the end of 2017 almost the whole UK population will be able to receive 4G mobile services.[47]

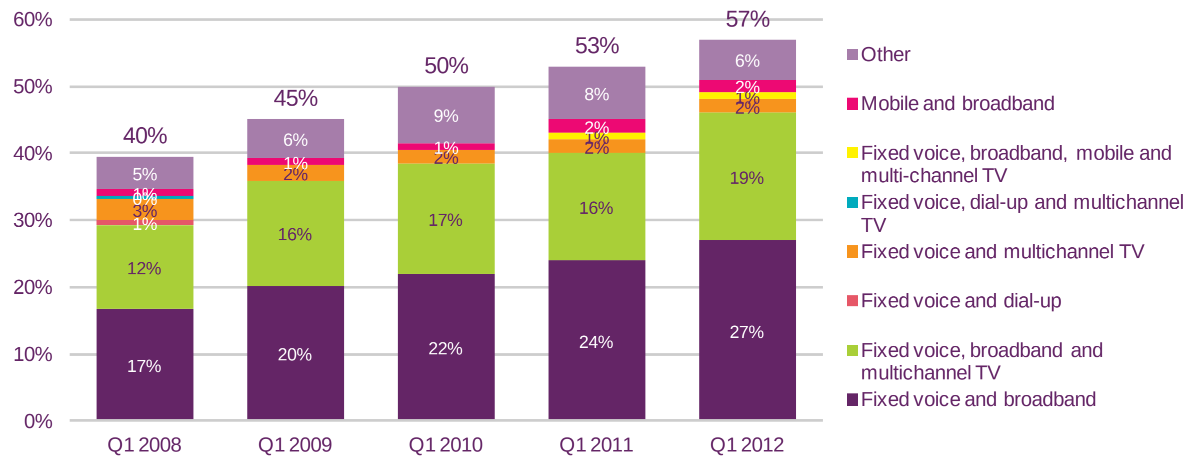
### Increase in bundling

2.46 There has been an increase in the number of ‘bundles’ or packages of communications services offered to consumers. Figure 2.8 illustrates the trend in bundled purchasing. The number of consumers with bundled services rose from 53% in 2011 to 57% in 2012. Dual-play fixed-line and broadband, and triple-play fixed-line, broadband and multichannel TV bundles remain the most popular packages among consumers. Dual-play fixed-line and broadband bundles have continued to increase

[45] Ofcom Infrastructure Report: 2012 Update, updated 20 December 2012, p 2.
[46] http://media.ofcom.org.uk/2013/02/20/ofcom-announces-winners-of-the-4g-mobile-auction/.
[47] Ofcom has attached a coverage obligation to one of the 800 MHz lots of spectrum. The winner of this lot is Telefónica UK Ltd. This operator is obliged to provide a mobile broadband service for indoor reception to at least 98% of the UK population (expected to cover at least 99% when outdoors) and at least 95% of the population of each of the UK nations – England, Northern Ireland, Scotland and Wales – by the end of 2017 at the latest, http://media.ofcom.org.uk/2013/02/20/ofcom-announces-winners-of-the-4g-mobile-auction/.

since 2011 (27% up from 24%) as have triple-play fixed line, broadband and multichannel TV (19% up from 16%).[48]

**Figure 2.8: Trends in purchasing multiple communications services from a single supplier**




*Source: Ofcom, The Consumer Experience of 2012, January 2013, p.78*

## 2012 WBA Call for Inputs

2.47 We started this market review by publishing the 2012 WBA Call for Inputs[49] on 9 November 2012 to gather stakeholders' views on the key issues, including:

- how we might define the relevant markets and assess SMP, particularly in light of any market developments since our last market review;
- the existing remedies, their experience of regulated WBA services, market entry and competition in the relevant markets;
- whether and how these markets have changed since the last market review was completed, both from their perspective and the perspective of their customers; and
- any other relevant issues that we need to consider.

2.48 Most respondents to the 2012 WBA Call for Inputs that addressed the issue of product market definition (BT, TalkTalk, EE, Vodafone, Virgin Media, KCOM), considered that there have not been significant changes in the broadband market since the last review, and broadly agreed that the product market definition we used in the 2010 WBA Statement would continue to be satisfactory for the current market review. A number of respondents (Birmingham City Council, Derby City Council, The Bit Commons, FCS), however, considered that the roll-out of NGA will have an impact upon the WBA market and said that this needed to be taken into account.

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[48] Ofcom, The Consumer Experience of 2012, January 2013, p.77 to 78.
[49] Review of the wholesale broadband access markets, Call for Inputs, 9 November 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/summary/reviewL.pdf.

2.49 With regard to geographic market definition, the majority of stakeholders that addressed the issue (Sky, Virgin Media, EE, and TalkTalk) acknowledged that the criteria which Ofcom used to define the geographic markets in the last review were appropriate and to a large extent still remain relevant. However BT[50] and EE believed that we should consider aggregating some of the geographic markets, and BT suggested that we should consider eliminating the 50% market share threshold between Market 2 and Market 3 (as defined in the previous review). Furthermore, BT and EE suggested that we should adopt a mechanism that would allow for exchanges to be reclassified throughout the review period as and when unanticipated entry occurs. TalkTalk stated that we should be able to adapt the market definition quickly, when changes occur.

2.50 Many respondents did not believe that there has been much change in the WBA markets which would impact on the SMP assessment. BT said that Ofcom was too cautious in its 2010 SMP assessment, placing too much emphasis on prevailing market shares and not enough on the evolution of market shares over the review period. It also suggested that the presence of two competing LLU operators in an exchange, in addition to BT, would be sufficient for effective competition, regardless of BT's market share. TalkTalk stated it anticipated that BT still holds SMP in Markets 1 and 2 but not in Market 3. It further suggested that the magnitude of BT's market power in Market 1 would be significant while its market power in Market 2 would be weaker given the competitive constraints imposed by other operators.

2.51 On remedies, the majority of stakeholders that addressed the issue (Vodafone, EE, FCS, TalkTalk, Sky and Virgin Media) agreed that the remedies imposed in the previous market review were broadly appropriate and necessary. Vodafone, EE, FCS and TalkTalk agreed that where SMP is identified price regulation of some form should be imposed. BT, however, questioned the proportionality of imposing a charge control remedy in this market review.

2.52 We discuss in detail the responses to the 2012 WBA Call for Inputs at appropriate points throughout this document.

## The regulatory framework

2.53 The regulatory framework for electronic communications is based on a suite of EU Directives, which have been implemented into national legislation.[51] It imposes a number of obligations on the relevant national regulatory authorities (NRAs), such as Ofcom. One of these obligations is to carry out periodic reviews of certain markets. We set out the market review process, and the regulatory framework, in more detail in Annex 7. In this chapter we have set out, in summary, what the market review process involves.

### The market review process

2.54 The review is carried out in three stages:

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[50] SPC Network, *Some Economic Aspects of the Wholesale Broadband Access Market Definition, Prepared for BT plc,* 20 December 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/responses/BT_SPC_Report.pdf.

[51] The harmonised EU regulatory framework for electronic communications was amended in 2009. Those amendments to the Directives were transposed into national legislation and came into effect from 26 May 2011.

i) we identify and define the relevant markets;

ii) we assess whether the relevant markets are effectively competitive, which involves assessing whether any operator has SMP in any of the relevant markets; and

iii) we assess the appropriate remedies which should be imposed, where there has been a finding of SMP, based on the nature of the competition problem identified in the relevant markets.

2.55 In carrying out the review, we are obliged to define relevant markets appropriate to national circumstances, in particular relevant geographic markets within the UK, in accordance with the principles of competition law.[52] In so doing, we are also obliged to take utmost account of the European Commission's Recommendation on relevant product and service markets (the Recommendation on Markets)[53] and the Commission's guidelines on market analysis and the assessment of SMP (the SMP Guidelines).[54] We are also required to take utmost account of any opinion, recommendation, guidelines, advice or regulatory best practice adopted by the Body of European Regulators for Electronic Communications (BEREC).[55]

## The Recommendation and its application to this review

2.56 The Recommendation on Markets sets out those product and service markets which, at a European level, the Commission has identified as being susceptible to ex ante regulation. These markets are identified on the basis of the cumulative application of three criteria:

- the presence of high and non-transitory barriers to entry;
- a market structure which does not tend towards effective competition within the relevant time horizon; and
- the insufficiency of competition law alone to adequately address the market failure(s) concerned.

2.57 The WBA market is identified in the Annex to the Recommendation on Markets as a relevant market for the purpose of carrying out market reviews in accordance with Article 15 of the Framework Directive.

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[52] See Article 15(3) of the Framework Directive (Directive 2002/21/EC on a common regulatory framework for electronic communications networks and services, as amended).
[53] Commission Recommendation of 17 December 2007 on relevant product and service markets within the electronic communications sector susceptible to *ex ante* regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services (Second Edition) (C(2007)5406 rev1) http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2007:344:0065:0069:en:PDF.
[54] 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.
[55] Regulation (EC) No 1211/2009 establishing the Body of European Regulators of Electronic Communications (BEREC) and the Office (2009 L 337/1). http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0001:0010:EN:PDF.

The SMP Guidelines and their application to this review

2.58 The SMP Guidelines include guidance on market definition, assessment of SMP and SMP designation. In assessing whether an undertaking has SMP, we have taken due account of the SMP Guidelines as required by Section 79 of the Communications Act 2003 (the 2003 Act). Where relevant, we have also had regard to the application of the equivalent Oftel Guidelines[56] and the ERG's revised working paper on SMP[57] (ERG Revised SMP Paper).

The BEREC Common Position on best practice in remedies on the market for WBA

2.59 In December 2012, BEREC adopted a revised Common Position on best practice in remedies on the market for WBA.[58] BEREC Common Positions are intended to assist national regulatory authorities in designing the most effective remedies to address the competition problems identified in their respective national markets, in pursuit of the objectives of the regulatory framework for electronic communications and services.

Forward look

2.60 Rather than just looking at the current position, market reviews look ahead to how competitive conditions may change in future. For this review we have taken a forward look of three years, reflecting the characteristics of the retail and wholesale markets and the factors likely to influence their competitive development over the intended period of this market review (1 April 2014 to 31 March 2017). The forward look period also reflects the requirement in the Directives that ordinarily market reviews should be conducted within three years of the previous review.

2.61 This does not preclude us from reviewing any of the markets earlier but, absent unforeseen developments, we anticipate that we would time the next market review to conclude three years after completion of the current review. We therefore propose that the charge control we propose in this consultation will apply for a period of three years.

## Impact assessment and equality impact assessment

2.62 The analysis presented in this document constitutes an impact assessment as defined in section 7 of the 2003 Act.

2.63 Impact assessments provide a valuable way of assessing different options for regulation and showing why the preferred option was chosen. They form part of best

[56] Oftel's market review guidelines: criteria for the assessment of significant market power, http://www.ofcom.org.uk/static/archive/oftel/publications/about_oftel/2002/smpg0802.htm.

[57] ERG, *Revised working paper on the SMP concept for the new regulatory framework*, September 2005, http://berec.europa.eu/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf, September 2005.

[58] BEREC, *Revised BEREC common position on best practice in remedies on the market for wholesale broadband access (including bitstream access) imposed as a consequence of a position of significant market power in the relevant market*, December 2012 http://berec.europa.eu/eng/document_register/subject_matter/berec/regulatory_best_practices/common_approaches_positions/1126-revised-berec-common-position-on-best-practice-in-remedies-on-the-market-for-wholesale-broadband-access-including-bitstream-access-imposed-as-a-consequence-of-a-position-of-significant-market-power-in-the-relevant-market.

practice policy-making. This is reflected in section 7 of the 2003 Act, which means that generally we have to carry out impact assessments where our proposals would be likely to have a significant effect on businesses or the general public, or when there is a major change in Ofcom's activities. However, as a matter of policy Ofcom is committed to carrying out impact assessments in relation to the great majority of our policy decisions. For further information about our approach to impact assessments, see the guidelines, Better policy-making: Ofcom's approach to impact assessment, which are on our website.[59]

2.64 Annex 13 sets out our Equality Impact Assessment for this market review.

## Structure of this document

2.65 The rest of this document is structured as follows:

- Sections 3 and 4 describe our proposals on the two dimensions of the wholesale market definition – product market definition and geographic market definition;
- Section 5 describes our provisional assessment of SMP in each of the markets identified; and
- Section 6 discusses our proposals for remedies in those markets where we propose a provider holds a position of SMP; and
- Section 7 discusses the detail of our proposals for a charge control remedy in the market in which we provisionally conclude that BT has SMP.

2.66 There are also a number of annexes, covering the following:

- Annexes 1 to 4 concern the process for responding to this consultation, Ofcom's consultation principles and the consultation questions set out in this review;
- Annex 5 provides a list of respondents to the 2012 WBA Call for Inputs;
- Annex 6 includes the draft of the legal notifications of the SMP conditions we propose to impose;
- Annex 7 summarises the market review process we have followed in this market review;
- Annex 8 provides information on retail broadband pricing used to inform our analysis;
- Annex 9 explains our approach to market definition;
- Annex 10 discusses our analysis of the coverage of different operators by geographic area;
- Annex 11 explains our treatment of base year input costs in the proposed charge control;
- Annex 12 sets out our modelling approach to the proposed charge control;

[59] http://stakeholders.ofcom.org.uk/binaries/consultations/ia_guidelines/summary/condoc.pdf

- Annex 13 sets out our Equality Impact Assessment;
- Annex 14 lists the main sources of evidence we have relied on in undertaking this market review; and
- Annex 15 provides a glossary of terms used in this document.

## Section 3

# Product market definition

## Summary

3.1 In this Section we set out our assessment of the product market definition in relation to the provision of WBA services.

3.2 Since 2010 there have been a number of developments that are potentially relevant to the product market definition. These include the increased availability and take-up of superfast broadband services, the continued growth of retail bundling in the form of dual and triple play services, and the auction of 4G mobile spectrum for the provision of mobile broadband services.

3.3 We have analysed the WBA product market, taking these developments into account, but consider that the definition we adopted in our 2010 WBA Statement continues to remain appropriate for the period of this review. We therefore propose that the relevant WBA 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.

3.4 This means that broadband services provided to business and residential customers via copper, cable and fibre access networks at all speeds are within the same market, including superfast (30Mbit/s or faster) broadband services. Broadband access provided via mobile, wireless and satellite networks are outside the market.

3.5 Although our market definition concerns WBA, we also consider the constraints that exist at the retail level in order to inform this analysis.

3.6 The Section is structured as follows:

- We first summarise the comments on product market definition that we received in response to the 2012 WBA Call for Inputs;
- We summarise our general approach to product market definition;
- We consider retail product market definition;
- We consider wholesale product market definition;
- Finally, we summarise our provisional conclusion on product market definition.

## 2012 WBA Call for Inputs

3.7 In our 2012 WBA Call for Inputs we asked stakeholders whether they thought there had been any changes in the appropriate market definition since the 2010 WBA Statement, and whether they saw any developments over the period of this review which would affect the appropriateness of the WBA product market definition used in the 2010 WBA Statement.

3.8 In summary the responses were:[60]

- Some respondents (Sky, EE) generally agreed with Ofcom's definition of the 2010 WBA product market and did not consider that there have been significant changes which would affect the existing parameters of the market.

- A number of stakeholders (Derby City Council, The Bit Commons, FCS, Birmingham City Council) disagreed with the conclusion in the 2010 WBA Statement that current generation broadband services were in the same wholesale market as higher speed next generation services and they suggested that we need to define a separate NGA market. Vodafone also argued that the wider roll-out of NGA will have a bearing upon the WBA market.

- TalkTalk also stated, in its 2012 WBA Call for Inputs response, that the current WBA product market definition is still appropriate in that no significant changes have occurred since the 2010 WBA Statement. However, in its submission in response to the 2012 FAMR Call for Inputs, it suggested that although there was a single market for all speeds at present, future developments mean that by the end of the review period the market definition should be asymmetric so that NGA was not constrained by CGA services, although CGA was constrained by NGA.

- Virgin Media, in contrast, put forward the view that CGA products still place a real constraint on the pricing of NGA services. It also argued that there is scope for 4G services to be considered as a substitute at the retail level to fixed broadband services.

- BT also suggested that we should take into account the growing impact of mobile broadband on the nature of competition at the retail level. Further to that, in a report that consultants SPC undertook for BT, it was suggested that we should consider the effect of retail bundling on the wholesale market definition.

- Solway Communications characterised the restriction of the current WBA market to asymmetric connections as outdated and suggested that symmetric services should be included in the new product market.

- KCOM said that we should consider including fixed wireless access services in our product market definition. It also suggested that we should refrain from introducing a separate market for NGA broadband services, which might deter investment.

3.9 We discuss 2012 WBA Call for Inputs responses in further detail where relevant in the remainder of this Section.

## Approach to market definition

3.10 The purpose of market definition in this review is to structure and inform our forward looking assessment of whether SMP exists in the WBA markets, as defined. Therefore, market definition is not an end in itself, but should be carried out with the aim of understanding whether, during the course of the review period, broadband

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[60] The full list of respondents can be found in Annex 5.

customers will be protected by effective competition, or whether ex ante regulation is required. In this Section we present our analysis and proposals for which products should be included in the relevant market. In Section 4 we consider the geographic extent of the market.

3.11 Our general approach to market definition is set out in Annex 9. In formulating this approach, we have taken account of the Commission's Recommendation on Markets, the accompanying explanatory memorandum (the "Explanatory Memorandum"), as well as the Commission's SMP Guidelines. Where appropriate, we have also considered the Commission's Recommendation on regulated access to Next Generation Access Networks (the NGA Recommendation).[61]

3.12 WBA 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."

3.13 As in previous reviews, we have sought to inform our assessment of the market boundaries by considering the likely strength of competitive constraints from demand- and supply-side substitution. The hypothetical monopolist test is a useful tool in assessing such substitution possibilities. This approach considers whether a hypothetical monopolist could profitably impose a small but significant, non-transitory increase in price (a SSNIP) in a candidate market. If demand- or supply-side substitution to an alternative service is sufficient to render the price increase unprofitable on a forward looking basis then the market should be widened to include this service. Products which do not constrain each other directly may be linked by a chain of substitution. For example, price increases in product A may not be constrained by product C directly, but if product A is constrained by product B and product B is constrained by product C, it may be appropriate to include products A, B and C in the same market.

3.14 In order to define the relevant markets on a forward-looking basis we have considered existing market conditions, taking into account past performance and data, and expected or foreseeable market developments over the review period. We will also review any new or updated information which may become available prior to the publication of our final statement.

3.15 As in the 2010 WBA Statement, we have applied the Modified Greenfield Approach when carrying out the market definition exercise. This means that the market definition exercise is conducted in relation to a hypothetical scenario in which there are no ex ante SMP remedies in the WBA market, but ex ante SMP remedies in the upstream WLA market in relation to LLU, VULA, SLU and PIA, exist.

3.16 In the absence of SMP remedies in the WBA market, BT, Virgin Media, and LLU and VULA operators would each supply retail broadband services. This would directly constrain prices at the retail level, and can also be expected to result in an indirect constraint on prices at the wholesale level.

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[61] Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks (NGA) (2010/572/EU), http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:251:0035:0048:EN:PDF.

3.17 There may also be some voluntary provision of WBA services to third parties in the absence of ex ante regulation in the WBA market. This may be in the operators' interest if there are firms which can add value at the retail level, for example from the strength of their brand or a greater ability to provide bundled services. For example, at present BT supplies WBA services in Market 3 (as defined in the 2010 WBA Statement), even though there is no regulatory requirement for it to do so. Several LLU operators also supply WBA services to third parties. However, the extent of wholesaling activities is likely to be more limited without regulation. In particular BT may be more reluctant to supply CPs with which it competes directly at the retail level.

## Retail product market definition

### Introduction

3.18 At the retail level, BT's WBA products are used to supply asymmetric broadband internet access services over copper and fibre connections. Asymmetric broadband internet access provides, at a minimum, an always-on capability that allows both voice and data services to be used simultaneously and provides speeds greater than dial-up connections. In this Section, we assess the scope of the product market into which these services are supplied. Using asymmetric broadband internet access as our starting point, we consider whether or not the following should be included in a single market:

- Broadband services provided over copper, cable and fibre networks;
- Broadband services of different speeds;
- Residential and business products;
- Bundled and non-bundled products;
- Mobile broadband;
- Symmetric services;
- Fixed wireless access;
- Satellite access;
- Narrowband access.

3.19 We consider each of these issues in turn.

### Copper, cable and fibre

3.20 Broadband services provided over copper, fibre and cable all have the same intended use. It is clear from the marketing of these services that they are positioned as alternative methods of delivering the same retail service, with the main difference being the speed of the service.

3.21 The issue of whether or not services provided over copper, cable and fibre are in the same market is therefore covered under our discussion of whether products of different speeds should be in the same market. If so, it follows that fibre, cable and copper should be in the same market.

## Differing broadband speeds

### Introduction

3.22 The majority of broadband services provided by the main ISPs offer headline speeds ranging from 16Mbit/s to 76Mbit/s, although offers based on ADSL have lower speeds. ADSL based services are increasingly being replaced by offers based on ADSL2+. Where this has happened the lower speed offers are being withdrawn but in areas where this change has not been made headline speeds lower than 16Mbit/s are still offered. Speeds of 100Mbit/s or higher are only available to a very small number of customers and will probably remain so during the course of the review, based on operators' estimates.

3.23 Broadband services with headline speeds under 30Mbit/s (referred to in this document as Standard Broadband, or SBB) are usually delivered by CGA technology,[62] while services with speeds equal to or above 30Mbit/s (referred to in this document as Superfast Broadband, or SFBB) are delivered using NGA or cable technology.

3.24 This Section considers whether retail broadband packages offering different speeds should be included within the same market and, in particular, whether SFBB services are in the same market as SBB services.

### Position in 2010

3.25 In our 2010 WBA Statement (and in the previous review in 2008), we concluded that there was a "chain of substitution" through the available asymmetric broadband internet access speeds. This meant that for a product providing asymmetric broadband internet access of any speed, there were lower or higher speed products (the next links in the chain) which were sufficiently close substitutes that products of all speeds were subject to a common pricing constraint. We recognised that it could be appropriate in future to define separate markets based on speed, and noted that this would depend on the emergence of applications that require higher speed services to work effectively.[63]

### 2012 WBA Call For Inputs responses

3.26 In response to our 2012 WBA Call for Inputs, a number of respondents commented that NGA roll-out is the main change that has taken place in the WBA market since the 2010 WBA Statement. However, the conclusions they drew about its impact on market definition varied.

3.27 A number of respondents (Birmingham City Council, Derby City Council, The Bit Commons, FCS) argued that Ofcom should define a separate market for NGA services. Two of these gave additional reasoning to support that position:

- Birmingham City Council argued that the current market definition is restrictive, since it prevents new business models from emerging and it facilitates the maintenance of the incumbent's advantage and of artificially high prices while it deprives the market from the potential that connectivity can offer.

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[62] In this document, unless stated otherwise, "speed" refers to headline speeds.
[63] Ofcom, 2010 WBA Consultation, paragraphs 3.88 to 3.102 and 2010 WBA Statement, paragraphs 3.15 to 31.17.

- FCS suggested that the current generation products do not offer a viable alternative to the higher speeds which can be obtained via the next generation products and which are essential for some applications.[64]

3.28 TalkTalk also commented on the impact of NGA (see paragraphs 3.8 and 3.49). In particular, its response to the 2012 FAMR Call for Inputs stated that future developments may mean that by the end of the review period the market definition could be asymmetric so that NGA would not be constrained by CGA services, although CGA would be constrained by NGA.[65]

3.29 Other respondents suggested that it was still appropriate to define a single market:

- EE generally agreed with Ofcom's definition of the WBA product market and did not consider that there have been significant changes to affect it.

- Virgin Media acknowledged that since the 2010 WBA Statement there have been developments, which have impacted both the wholesale and retail markets for broadband services, including BT's roll out of FTTC, the availability of the GEA product at the wholesale level and the offering of NGA services by at least three major CPs at the retail level who have chosen to consume GEA. However, when considering the appropriateness of the current product market definition, Virgin Media said that current generation access products still exhibit a real constraint on the pricing of NGA services.[66]

- KCOM argued that, although the market could change quickly in the future, in particular with regards to NGA developments, Ofcom should not define separate speed-based markets in order not to disincentivise the relevant investments expected.

3.30 Vodafone was of the view that any CGA market changes since the 2010 WBA Statement have not been significant. Overall, however, it suggested that the wider roll-out of NGA will have a bearing upon the WBA market, although it did not provide any further explanation for its views.

## Position in this market review

3.31 Deployment of NGA networks and take-up of SFBB services is increasing and it is likely to account for significant volumes during the period of this review. BT's fibre has now been rolled out to 55% of the UK (and BT is seeking to reach two thirds of the country by April 2014).[67] This means that overall, including Virgin Media's network, as of June 2012, superfast services were available to 65% of the UK. Take-

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[64] FCS, *Wholesale Broadband Access Market Review – Call for Inputs,* 19 December 2012, http://stakeholders.ofcom.org.uk/consultations/review-wholesale-broadband/?showResponses=true

[65] TalkTalk, *Wholesale Local Access Market Review – Call for Inputs, additional submission*, 5 April 2013.

[66] Virgin Media, *Review of the Wholesale Broadband Access Market – Call for Inputs,* 20 December 2012, http://stakeholders.ofcom.org.uk/consultations/review-wholesale-broadband/?showResponses=true.

[67] BT press release, http://www.btplc.com/News/Articles/Showarticle.cfm?ArticleID=B95CCF6C-F125-4ABF-A78D-82476B31A07C and also further clarification (April 2014) provided by BT in its response to confidentiality checks.

up of SFBB increased from 0.2% of all connections in early 2010 to 18% by Q1 2013.[68]

3.32 In this section we first look at how price varies with broadband headline speed. We then consider the need for SFBB. Finally we consider how the market might develop in the future, in order to ensure a forward looking view.

*Pricing seems indicative of a chain of substitution*

3.33 In this Section we look at analysis we conducted on residential and business broadband tariffs to see how prices change with headline speed.[69] As discussed below, our analysis suggests that retail prices increase only gradually with speed and there is at present no clear break in the chain of substitution between different service speeds. We note TalkTalk has alleged that BT has engaged in an abusive margin squeeze in the supply of SFBB services. Ofcom has recently opened an investigation into this.[70] This investigation is still ongoing.

3.34 We have considered in our analysis both the average retail prices and the range of prices offered for each of the main speeds offered in residential and business packages.[71] We collected information on broadband tariffs for the most popular ISPs (Be, BT, EE, O2, Plus.net, Sky, TalkTalk, Virgin Media) during March 2013. For each speed, there is a range of prices available depending on, for example, length of contract, data allowance, discounts given to existing customers, and the identity of the provider. We calculated the average monthly costs by headline speed over a 24 month contract duration, including line-rental as well as installation and connection fees, and promotional discounts. The methodology for deriving these averages is explained in detail in Annex 8. The results are shown in Figure 3.1, which shows that there is a general trend for price to increase with headline speed, but the increase in price is very gradual.

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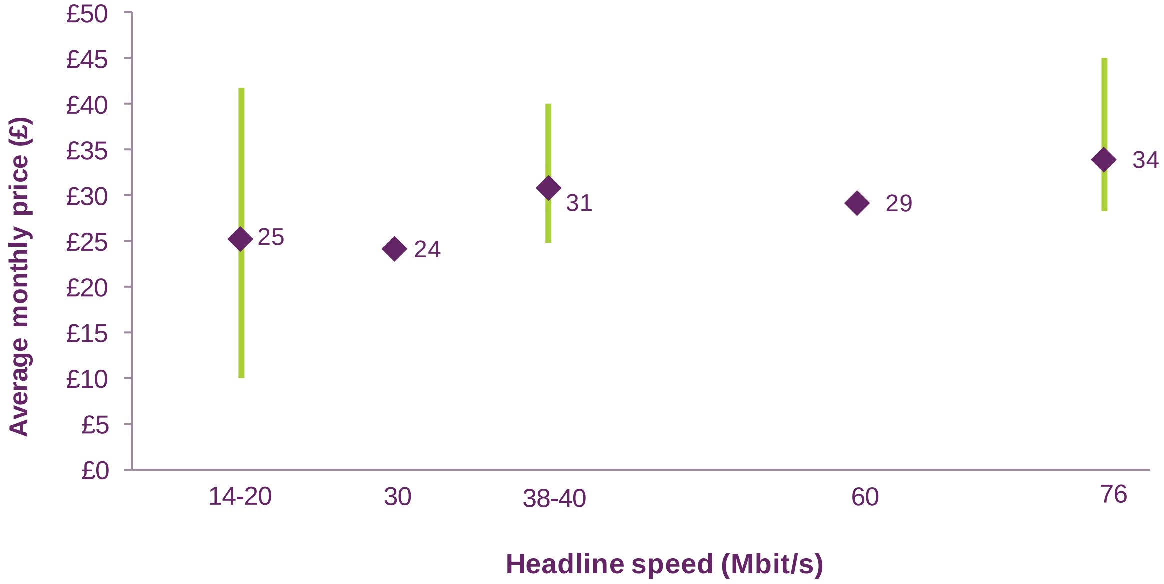
[68] Ofcom calculations based on Virgin Media and BT published annual reports, which state there were approximately 1.5 million BT SFBB connections and 2.5 million Virgin Media SFBB connections as of Q1 2013.

[69] Further details of the pricing information are included in Annex 8.

[70] http://stakeholders.ofcom.org.uk/enforcement/competition-bulletins/open-cases/all-open-cases/cw_01103/

[71] Headline speeds for broadband packages range from 8Mbit/s to 160Mbit/s. Virgin Media and BT are the only providers providing speeds above 76Mbit/s (i.e. 100Mbit/s and 160Mbit/s), and these account for a small number of contracts. Packages with speeds below 16Mbit/s are usually ADSL-based packages and are also small in numbers.

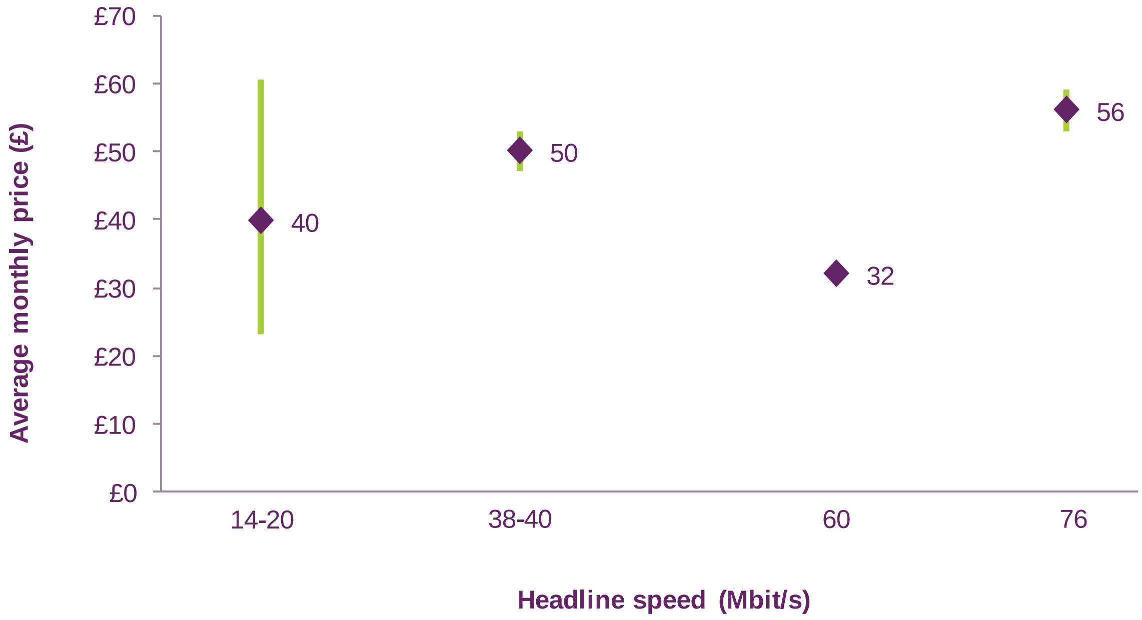
**Figure 3.1: Retail price range and average retail price per month for residential broadband by headline speed (March 2013)**




*Source: Ofcom's analysis based on ISPs' websites, March 2013*

3.35 Our analysis of the price of business broadband products is shown in Figure 3.2. It shows average prices and the range of prices for each headline speed. There is a generally positive relationship between speed and prices but, like residential broadband, the increase is rather gradual. The outlier is the 60Mbit/s service, which is considerably cheaper than services at neighbouring speeds. This product was provided by Virgin Media at the time the research was conducted (March 2013) but appears to have been withdrawn since then as it is no longer advertised on its website.

**Figure 3.2: Retail price range and average retail price per month for business broadband by headline speed (March 2013)**




*Source: Ofcom's analysis based on ISPs' websites, March 2013*

3.36 This gradual increase in price with speeds for both residential and business packages suggests that if the price of one speed increased by a small but significant amount, a significant number of consumers would switch to an alternative service with a different headline speed.

3.37 Broadband prices, in particular those of BT, have been changing in recent months. BT's changes are shown in Table 3.1 below. Prior to February 2013, BT's retail prices for SBB and SFBB services were very similar. For example, BT's 16Mbit/s and 38Mbit/s services with a 40GB allowance were priced at £18 per month, and 16Mbit/s and 76Mbit/s offerings with unlimited data allowance were priced at £26 per month. BT revised its retail tariffs in February 2013, and then again in May 2013, reducing the price of its CGA services and the superfast service with a 40GB data allowance, and introducing a new unlimited 38Mbit/s service as well as a 16Mbit/s Unlimited Broadband Extra product which provides additional services such as additional BT Cloud storage and use of BT NetProtect Plus. The price of BT's 76Mbit/s offer has not changed.

**Table 3.1: BT broadband tariffs as of January, February and May 2013**

| Tariff | Headline speed | Allowance | Jan 2013 price | Feb 2013 price | May 2013 price |
|---|---|---|---|---|---|
| Broadband Evening and Weekend Calls | 16Mbit/s | 10GB | £13 (or £18 for 40GB allowance) | £13 | £10 |
| Unlimited Broadband | 16Mbit/s | Unlimited | £26 | £16 | £16 |
| Unlimited Broadband | 16Mbit/s | Unlimited | Did Not Exist | £21 | £21 |

| Tariff | Headline speed | Allowance | Jan 2013 price | Feb 2013 price | May 2013 price |
|---|---|---|---|---|---|
| Extra[72] | | | | | |
| BT Infinity 1 | 38Mbit/s | 40GB | £18 | £18 | £15 |
| Unlimited BT Infinity 1 | 38Mbit/s | Unlimited | Did Not Exist | £23 | £23 |
| Unlimited BT Infinity 2 | 76Mbit/s | Unlimited | £26 | £26 | £26 |

*Source: Ofcom's analysis based on BT's website, March 2013, May 2013 and Pure Pricing Reports*.

3.38 These changes have increased the price differential between some headline speeds and in particular between unlimited SBB and SFBB. However, it is not clear that this is sufficient to define a separate market – charging a premium for SFBB is consistent with a chain of substitution, although as discussed above, some providers have historically not done so. BT told us that review of the retail broadband portfolio was [✂].[73] As such, these changes do not have any clear implications for market definition. The analysis of pricing therefore seems consistent with a single market.

*Superfast broadband is not "must have"*

3.39 In recent years, average broadband speeds for residential customers have increased significantly, as has the demand for high bandwidth applications, like online TV services. However, as in the 2010 WBA Statement, it remains the case that there are few devices or applications that require SFBB speeds in order to work effectively. The main advantage of a SFBB service is that it may facilitate a better user experience in relation to some devices or applications.

3.40 For example, TalkTalk indicated that consumers require broadband speeds of only 3Mbit/s to use its basic 'YouView' TV service, and 5Mbit/s to use all additional functionality.[74] Openreach estimates, shown in Table 3.2 below, suggest that CGA speeds are sufficient to access common TV services, such as video on demand (VoD) in standard definition (SD) and high definition (HD) or linear TV in standard definition. Viewing of linear HD online may be somewhat constrained on CGA. Services such as ultra HD or linear 3D do require SFBB speeds, but are not commonly used at present.

**Table 3.2: Throughputs required for TV over IP**

| Definition | Type | Throughput required |
|---|---|---|
| **SD** | Video on Demand (Time Shifted via Catch Up Services) | 2.3 Mbit/s |
| **HD** | Video on Demand (Time Shifted via Catch Up Services) | 3.7Mbit/s |

[72] The Unlimited Broadband Extra offer consists of the Unlimited Broadband offers (up to 16 Mbit/s, unlimited data allowance) with an extended online storage of 50GB.
[73] Email from BT dated 22 May 2013 in response to follow up questions related to BT's response to s.135 notice, 19 March 2013.
[74] TalkTalk, "How does YouView work?", https://sales.talktalk.co.uk/info/tv/youview-tv.

| Definition | Type | Throughput required |
|---|---|---|
| **3D** | Video on Demand (Time Shifted via Catch Up Services) | ~10Mbit/s |
| **Ultra HD** | Video on Demand (Time Shifted via Catch Up Services) | ~60Mbit/s |
| **SD** | Linear (Time Shifted via PVRs) | 5.7Mbit/s |
| **HD** | Linear (Time Shifted via PVRs) | 13.7Mbit/s |
| **3D** | Linear (Time Shifted via PVRs) | ~30Mbit/s |
| **Ultra HD** | Linear (Time Shifted via PVRs) | ~250Mbit/s |

*Source: Openreach Developers Working Groups, presentation, 25th January 2012* [75]

3.41 In addition, the evidence shown in figure 5.13 of the 2011 Communications Market Report[76] suggests that the adoption of SFBB appears to result in users spending more time on applications already used with CGA, rather than new applications, suggesting the take-up of SFBB is not driven by specific uses.

3.42 Even though there are very few applications which individually require SFBB speeds, several internet-enabled devices served by the same broadband connection may be constrained by slower speeds if used simultaneously. By March 2012, 72% of UK households had more than two internet-enabled devices.[77] If multiple people in a household are using high bandwidth applications, in particular for watching IPTV, SBB speeds may not provide an acceptable service for all. However, this does not seem to be a significant concern at the moment, as catch-up TV only represents a minority of TV consumption (around 16% in 2011).[78] In Q1 2012, only 29% of adults watched catch-up at all, and only 22% streamed TV via the internet. [79]

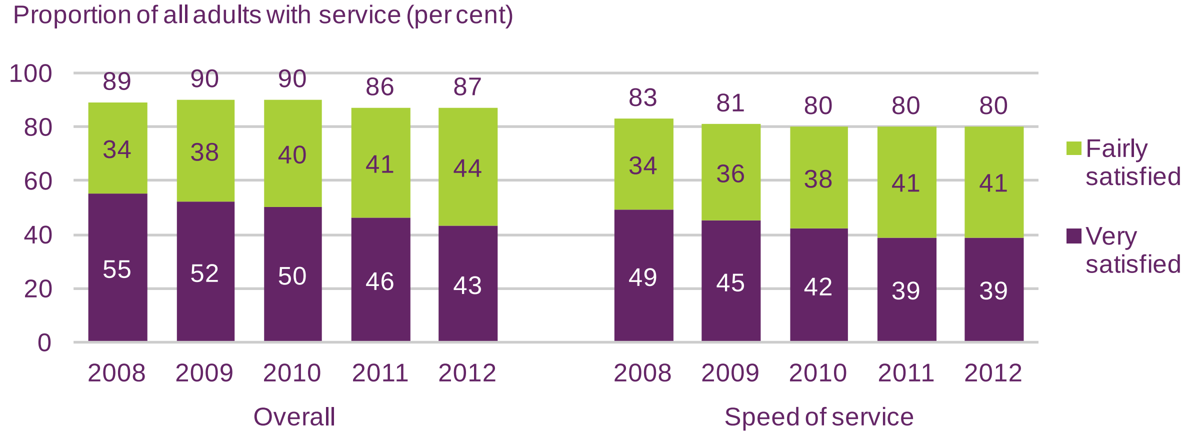
3.43 FCS told us that [✂].[80] We recognise that, as suggested by FCS, there may be some customers that require superfast speeds. However, we do not consider the need for SFBB to deliver such services will be sufficiently widespread to define a separate market. This is particularly so because, as discussed below, we consider that there is substitution between residential and business products.

3.44 Evidence from surveys of residential customers seems to suggest that their needs are broadly being met by current services. As shown in Figure 3.3, the vast majority of residential consumers were either “highly satisfied” or “very satisfied” with their overall broadband connection and the speed of their service in Q1 2012. This reflects

[75] http://www.openreach-communications.co.uk/our-network/docs/Developers-Working-Group-250112.pptx
[76] http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr11/
[77] Ofcom, *Consumer Market Research* 2012, figure 4.23.
[78] Ofcom, *Consumer Market Research* 2012, figure 2.61.
[79] Ofcom, *Consumer Market Research* 2012, figure 2.8.
[80] FCS response to 2012 WBA Call for Inputs, follow-up e-mail dated 30 January 2013.

predominantly non-SFBB speeds since only 8% of broadband connections were superfast in May 2012.[81]

**Figure 3.3: Residential consumer satisfaction with aspects of fixed broadband service, Q1 2012**




*Source: Figure 5.71, Ofcom CMR 2012*

3.45 We have also considered uptake of SFBB. This has increased quite rapidly in recent periods, although from a very low base. For example, in May 2012, 8% of connections were SFBB, but this had more than doubled to 19% by Q1 2013. Given that around 65% of the country was covered by SFBB at that time,[82] by Q1 2013 take-up in areas with availability stood at approximately 30%. However, until early 2013, BT's pricing policy left very little difference in the overall cost of BT's fibre and ADSL broadband offerings. Virgin Media also adopted a policy of upgrading service speeds to its customers to SFBB for free.[83] Thus take-up to date does not clearly indicate a need to move to SFBB or a lack of constraint from CGA.

3.46 CPs' internal documents suggest that mass market demand for SFBB services has yet to emerge. For example, [✂].[84] Similarly, a July 2012 internal TalkTalk presentation states "Fibre product is in it's [sic] infancy, early adopters are not mass consumers just yet". [85] Elsewhere TalkTalk stated that overall fibre demand among its customer base remains modest, although it noted that there were certain segments of its customer base that could derive clear value today from upgrading to fibre, for example those who are interested in taking TV from them but who currently do not receive sufficient speed to do so.[86]

3.47 Enders Analysis reports also suggest that although there has been recent growth in the take-up of SFBB, it is not yet a mass market phenomenon, although it is likely to

[81] Figure 1.3, *UK fixed-line broadband performance November 2012,* 14 March 2013, http://stakeholders.ofcom.org.uk/binaries/research/broadband-research/nov2012/Fixed_bb_speeds_Nov_2012.pdf.
[82] Ofcom, *Infrastructure Report: 2012 update,* 20 December 2012, p. 2.
[83] Starting in March 2012, its 10Mbit/s customers were upgraded to either 20Mbit/s or 30Mbit/s for no extra charge, while existing 20Mbit/s and 30Mbit/s customers were upgraded to 60Mbit/s. Those that had a superhub were upgraded to 30 Mbit/s and those didn't were put onto the 20Mbit/s service but will be sent a superhub and put onto 30Mbit/s when they renew their contract http://mediacentre.virginmedia.com/Stories/Virgin-Media-s-speed-doubling-starts-2380.aspx.
[84] Sky response to WLA s.135 notice, 26 November 2012.
[85] TalkTalk response to Q2.1 of s.135 notice, 26 November 2012.
[86] P3, *TalkTalk Telecom Group PLC Interim Management Statement Third Quarter FY 2012/13*, http://www.talktalkgroup.com/~/media/Files/T/TalkTalk/pdfs/results/q3-results-2013.pdf.

become so in future. For example, Enders stated in a February 2013 report that "the adoption rate [of SFBB] is accelerating even though penetration is quite high already, suggesting that it is receiving good word-of-mouth and that it is far from niche interest, with eventual adoption likely to be well over 50%. We continue to believe that the current high speed standard (30Mbit/s) will become the new normal over the next few years, but this is not yet happening outside BT and Virgin Media".[87] In a March 2013 report, Enders stated that "BT's high speed (fibre) broadband net adds grew markedly during the [previous] quarter….Growth of the other DSL operators also accelerated, but from a much lower base, with high speed still not a mass market phenomenon within these subscriber bases".[88]

3.48 In April 2013, Enders stated that "[EE] was quite positive on consumer demand for high speed, stating that resistance to paying a premium has come down significantly over the last year, and that it would be marketing fibre products more aggressively in the rest of the year".[89] This again suggests an increasing differentiation between CGA and NGA in the eyes of retail consumers, although it is not clear that it is sufficient to define a separate market. Charging a premium for SFBB is consistent with a chain of substitution, although as discussed above, BT and Virgin Media have historically not done so.

## Future developments

3.49 The evidence presented above suggests that consumer requirements for speed are likely to increase in the future, and that this could potentially result in a lessening in the substitutability of SFBB and SBB services for consumers. For example, sales of internet-enabled TVs, tablets and computers are set to rise. This could increase simultaneous viewing of catch-up TV, meaning fibre-based broadband could be required by more households, in order to satisfy their increased needs.

3.50 TalkTalk has suggested that it is possible it may be appropriate to define separate markets for SBB and SFBB by the end of the review period. In particular, TalkTalk argued there will be a virtuous circle created over time whereby increasing fibre uptake leads to applications and services (e.g. HD IPTV) being developed which are based on users having access to SFBB speeds, which in turn drives greater numbers of users to switch to fibre. TalkTalk also believes there will be an "endowment effect" such that once consumers get used to having NGA they will be unwilling to trade down, and will be willing to pay more to retain it than they did in the first place.[90]

3.51 We recognise that more consumers will regard SFBB services as necessary in future. We discuss the take-up of SFBB in the 2013 FAMR consultation document in detail and we show estimates of SFBB take-up from a number of CPs in Table 3.3 below. These suggest a significant proportion of connections are likely to be superfast by 2017, materially higher than today. Nevertheless, even by the end of the review period, we believe that the majority of households are likely to continue to be served by CGA-based broadband services. Thus, even if as TalkTalk suggests,

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[87] Enders Analysis, *BT Q3 2012/13 results: Fibre take-up accelerates, but sports costs loom*, 5 February 2013 p. 2-3.
[88] Enders Analysis, *UK broadband, telephony and pay TV trends Q4 2012 – Solid and solidifying*, 4 March 2013, p. 10.
[89] Enders Analysis, *EE Q1 2013 results: 4G progress*, 24 April 2013 p. 2.
[90] TalkTalk response to 2012 WLA Call for Inputs, 5 April 2013, p.19, http://stakeholders.ofcom.org.uk/binaries/consultations/fixed-access-markets/responses/TalkTalk_Group_supplemental.pdf.

consumers are reluctant to trade down once they have experienced SFBB, prices for SFBB are likely to remain low in order to make it attractive for the large number of consumers still on CGA to migrate to SFBB. To the extent that the prices for SFBB could increase because the premium some consumers are willing to pay for SFBB rises, it is not clear that this means we should define a separate market. Charging a premium for SFBB is consistent with a chain of substitution, even though historically some providers have not done so.

**Table 3.3: CPs' estimates of superfast broadband subscribers in 2017**

| 2017 (m) | BT | Sky | EE |
|---|---|---|---|
| Subscribers | [✂] | [✂] | [✂] |
| % of all broadband | [✂] | [✂] | [✂] |

*Source: Ofcom calculations based on: BT response to Q 2.8(b) of WLA s.135 notice, 26 November 2012; Sky response to Q 2.2(b) of WLA s.135 notice, 26 November 2012; EE response to Q 2.2(b) of WLA s.135 notice, 26 November 2012; Virgin Media response to Q 2.3(b) of WLA s.135 notice, 26 November 2012. '% of all broadband' calculation is based on Analysis Mason forecasts of total superfast broadband subscribers.*

Conclusion

3.52 On balance, the evidence suggests that it is appropriate to define a single market for broadband services at all speeds. We acknowledge that there are factors pointing to a separate market emerging at the retail level for fibre-based products at some point in the future. However, we consider that there is not sufficient evidence to conclude that this is likely to occur during the three-year forward look period of this market review. Therefore, on balance, we are proposing to define a single retail product market including both fibre- and copper-based products. This is consistent with the NGA Recommendation, which states that WBA over VDSL should be considered a chain substitute to existing WBA over copper loops.

### Bundles

Introduction

3.53 The current telecommunications and media retail markets are characterised by double-, triple- and quadruple-play suppliers. That is, broadband access can be bundled with different combinations of fixed voice telephony, mobile telephony and pay TV services.

3.54 In its Explanatory Memorandum to the Recommendation on Markets, the Commission explained that in most cases the individual services in a bundle are not good demand-side substitutes for each other yet may be considered to be part of the same retail market if there is no independent demand for individual parts of the bundle. The Explanatory Memorandum goes on to say that if, in the presence of a SSNIP there is evidence that a sufficient number of customers would "unpick" the bundle and obtain the service elements of the bundle separately, then it can be concluded that the service elements constitute the relevant markets in their own right and not the bundle.

3.55 We follow the approach suggested by the Commission, and after reviewing our position in 2010 and responses to our 2012 WBA Call for Inputs, we consider first whether there is demand for stand-alone broadband services, before looking at whether bundled and unbundled offers are seen as substitutes.[91]

## Position in 2010

3.56 In our 2010 WBA Statement, we considered bundling of telecommunications and media services. At that time we considered that it was appropriate to define the retail market in terms of broadband services supplied on either a standalone basis or as part of a bundle.

## 2012 WBA Call for Inputs responses

3.57 With the exception of BT, none of the stakeholders commented on our approach to retail bundling. BT submitted a report by SPC which argued that Ofcom should consider the relevance of increased retail bundling in the market review.[92]

## Position in this market review

*Is there independent demand for broadband?*

3.58 There is an increasing trend towards broadband being sold as part of a bundle, with sales of broadband-only packages declining. The proportion of broadband bought in a bundle has increased to 72% in Q1 2012 from 67% the previous year.[93, 94]

3.59 In almost all cases (96%) broadband bundles include fixed voice services.[95] This raises the question of whether it is still relevant to refer to broadband access as a standalone service or whether we should instead consider fixed line voice and broadband bundles as the appropriate products.

3.60 Despite the trend towards bundling, in Q1 2012, 28% of consumers bought broadband on a stand-alone basis. In contrast, from the responses to our information requests, we understand that although some major ISPs [✂] still sell a non-negligible part [✂] of their broadband sales on a standalone basis, others – [✂] for example – mainly sell bundled offers, and overall standalone broadband (i.e. not bundled with phone or TV service) accounts for less than [✂] of customers.[96]

3.61 TV and mobile are bought in bundled packages with broadband much less frequently. By Q1 2012, TV was included in 43% of broadband bundles. Mobile telephony was only included in 6% of broadband bundles.[97]

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[91] Our 2013 FAMR Consultation also discusses voice and broadband bundles in the context of defining the market for Wholesale Fixed Access Exchange Lines (WFAEL).
[92] SPC, *Some Economic Aspects of the Wholesale Broadband Access Market definition, prepared for BT plc*, 20 December 2021.
[93] Ofcom, Consumer Experience of 2012, January 2013, Figure 82, http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-12/Consumer_Experience_Researc1.pdf.
[94] In addition, BT has provided additional recent research which shows that the proportion of all subscribers that are single-play (broadband without voice or voice only) has fallen significantly over the past few years, as many subscribers move to dual and triple-play packages.
[95] Ofcom, CMR 2012, figure 1.10.
[96] [✂]
[97] Ofcom, The Consumer Experience of 2012 report, figure 80.

3.62 It therefore appears that there is no strong case for considering that TV or mobile to be included in the market, as there is significant demand for broadband sold separately from these services. It is less clear whether there is demand for broadband independent from voice services.

3.63 However, as we explain in the section on wholesale market definition below, we do not need to conclude on this issue. This is because, regardless of the situation at the retail level, there is independent demand for broadband at the wholesale level.

*Are bundled and unbundled offers seen as substitutes?*

3.64 Where there is independent demand for a product, we need to consider whether in the presence of a SSNIP there is evidence that a sufficient number of customers would “unpick” the bundle and purchase the service elements of the bundle separately. If so, it can be concluded that broadband sold in bundles is in the same market as standalone products.

3.65 BEREC has suggested that economies of scope and transaction cost savings might make it less likely that consumers will “unpick” a bundle.[98] It also suggests that to infer substitutability of bundled and unbundled products, it is useful to consider, amongst other things, the take-up of bundles compared to individual products and the availability of individual products. We consider these factors below with regard to fixed voice services, TV services and mobile services in turn.

3.66 We consider first substitution between broadband and fixed voice telephony bundles and standalone products. There may be economies of scope in supplying fixed voice and broadband services for example in terms of marketing and distributing similar communications services. There may also be transaction cost savings for consumers in buying broadband services and voice services together, as they only have to deal with one supplier. Moreover, as discussed above, there is a very high volume of fixed voice and broadband bundles, which suggests that these economies of scope or transaction cost savings may be sufficient to inhibit switching from bundled voice and broadband offers to unbundled offers. The pricing of unbundled offers is also such that it is significantly more expensive to buy products separately than to buy the bundled offers. It is therefore not clear that consumers would unpick a voice and broadband bundle and substitute with independently purchased products.

3.67 We have also considered whether consumers would be prepared to unpick TV and broadband bundles. Some suppliers do provide discounts for TV and broadband bundles compared to the standalone products. Nevertheless, significant numbers of consumers (roughly a quarter of UK households) appear to purchase TV and broadband services separately.[99] There is however an emerging trend to deliver TV channels over broadband and this may increase the prevalence of bundles and the discounts for such bundles. For example, BT has recently begun providing access to

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http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-12/Consumer_Experience_Researc1.pdf.

[98] BEREC, the Impact of Bundled Offers in Retail and Wholesale Market Definition, December 2010, (BoR (10) 64) http://berec.europa.eu/eng/document_register/subject_matter/berec/reports/?doc=209.

[99] As stated in Ofcom CMR 2012, broadband penetration is 72% in the UK and given that 42% of the bundles contain TV services, we estimate that pay TV within a bundle is purchased by 30% (=0.72 x 0.42) of UK households. Overall, however, 54% of UK households subscribe to pay TV services (Ofcom, Digital Television Update - 2012 Q4, http://stakeholders.ofcom.org.uk/market-data-research/other/tv-research/dtv/dtv-q4-2012/).

its sports channel free of charge with its residential broadband products.[100] It is too early to conclude with any certainty on how this trend may develop. Given that a significant number of people currently unpick TV and broadband bundles, we therefore believe TV/broadband bundles and standalone products are substitutable.

3.68 We also believe that consumers would be prepared to unpick mobile and broadband bundles. Not all CPs supply mobile and broadband bundles and overall such bundling is not widespread – only 6% of broadband customers have a bundled mobile phone service (see paragraph 3.61).

3.69 It therefore seems likely that consumers would be prepared to buy mobile and TV separately from broadband, although the evidence is less clear for fixed voice services. However, as explained in the section on wholesale market definition below, we do not believe it would make a difference to our proposals in this consultation if bundled services were separate from unbundled services at the retail market. This is because at the wholesale level there is clear substitutability between bundled and unbundled offers, regardless of the situation at the retail level. Therefore we do not need to conclude on whether consumers would unpick bundles at the retail level.

#### Conclusion

3.70 We do not conclude on whether there is independent demand for broadband at the retail level, or whether bundles are substitutable for independent products. As explained in the section on wholesale market definition, we do not believe these issues would make a difference to our proposals in this consultation.

### Residential and business

#### Introduction

3.71 At the retail level, many providers of asymmetric broadband internet access products offer distinct residential and business packages. There is a wider range of service and technical characteristics for business broadband services than for residential offerings.[101]

#### Position in 2010

3.72 In the 2008 and 2010 WBA Statements, we concluded that residential and business broadband products were in the same relevant market. On the demand side, we showed that a range of price/quality options were available for both business and residential broadband services. These appeared to constitute a continuous chain of substitution. In particular, we stated that SMEs could substitute between the more expensive residential offers and cheaper business offerings, and there was also substitution between the range of business offerings. In addition, on the supply side, we argued that there was no real difference between the wholesale inputs used to provide the retail products to residential or business customers.

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[100] http://www.btplc.com/news/articles/showarticle.cfm?articleid=%7B3c92e33b-6f97-420c-a5e2-3cdbc4d95929%7D

[101] For example, these may include lower tolerance of delays compared to residential customers, lower contention ratios, higher download limits, greater upstream capacity, tailored business support helpdesk and service level guarantees, web hosting, more email accounts, PC security and static IP addresses. The elements included in business products will vary depending on the provider and between packages offered by the same provider.

## 2012 WBA Call for Inputs responses

3.73 No respondents provided any indication that we should change the approach adopted in the 2010 WBA Statement to the residential and business market segments.

## Position in this market review

*Residential packages and basic business packages are in the same market*

3.74 In 2010, as Figure 2.6 shows, the majority of businesses (73%) purchased business ADSL services, most of which were basic business broadband services.[102] Many business customers purchasing such packages, such as small-office home-office (SOHO) and small and medium enterprise (SME) users may find that services targeted primarily at residential customers are sufficient for their needs, particularly given the improvements to residential products. As mentioned above in Section 2, some businesses already purchase residential ADSL services (8% in 2010). This suggests the price that CPs can charge to such business customers may be constrained by the price of residential offerings. Our analysis of pricing in Annex 8 is consistent with this. It shows that the average price for business broadband is slightly higher than residential broadband, but there is significant overlap between the prices of the two services.

*There is a chain of substitution between lower grade broadband offerings and higher grade offerings*

3.75 In paragraphs 3.33 to 3.52, we argue that there is a chain of substitution across all speeds. Similarly, we believe there is likely to be a similar chain of substitution linking services with different features (such as differences in data allowance, the ability to prioritise traffic, etc.). For example, a product with a small number of service features may not be seen by customers as a direct substitute for one with many service features. However, customers may be willing to substitute with an intermediate product, suggesting all products could be in the same relevant market via a chain of substitution.

*Supply-side substitution*

3.76 If an operator were to move from the provision of lower grade (residential target) services to higher grade (business target) services, they would likely need to develop new processes and systems. However, as we argued in the 2010 review, a provider who already has a network that can be configured to offer higher quality services should be able to obtain the necessary processes and systems within 12 months, either by developing them in-house, buying them in or contracting support out to a third party. In any case, most providers already have at least some of the necessary processes and systems.

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[102] A “premium” business package includes enhanced or managed IT solutions such as engineer visits, web hosting, resilient back-up options or managed internet access. For businesses needing even greater functionality than those services delivered using ADSL technology, there is a further range of business-specific, higher specification communications packages available, such as SDSL or leased lines. The market for these services is reviewed in the 2013 BCMR Statement.

3.77 Therefore a hypothetical monopolist would be prevented from imposing price increases above the competitive level in one segment by the threat of supply-side substitution. In practice many operators already supply both.[103]

## Conclusion

3.78 We propose to define the product market to include both residential and business services, as in 2010.

## Mobile

### Introduction

3.79 In this section we consider whether the retail broadband market should be defined to include mobile broadband services. We consider two mobile services: mobile broadband and mobile internet access via smartphones.[104]

### Position in WBA 2010

3.80 In the 2010 WBA Statement, we concluded that mobile broadband was not part of the relevant market as it was generally used as a complementary service to fixed broadband services, rather than as a substitute. We argued that although it may be a substitute for a small segment of the market (14% of households were mobile-only), data allowances were much more restrictive on mobile broadband plans than on fixed broadband plans, and mobile provided much lower speeds. We also showed that satisfaction was lower amongst mobile broadband users than fixed broadband users due to consumers' concerns over speed and reliability. Finally, we argued that mobile broadband was less easily set up as a shared connection, while fixed broadband access tended to be shared between members of a household.[105]

### 2012 WBA Call for Inputs

3.81 Two respondents mentioned that the development of 4G/LTE should be considered in the market definition for WBA services at the retail level.

3.82 BT stated that "Ofcom's analysis will need to take into account the growing impact of mobile broadband on the nature of competition at the retail level, particularly with the advent of 4G/LTE services" and also that if "it is successful, mobile access would act as an increasing and effective constraint on fixed line broadband services with implications on both product and geographic market definitions".[106] It highlighted the

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[103] We generally take supply-side substitution into account in market definition to the extent that it provides additional constraints above those identified on the demand side. This restricts it to operators who are not already materially present in the market. However, whether suppliers are treated as supply-side substitutes or as already having entered the market, there do not appear to be any significant barriers to entry or expansion (the ability of such operators to expand could be taken into account in the market power assessment).

[104] Mobile broadband means access via a mobile network using a USB stick or dongle, or built-in 3G connectivity in a laptop, netbook or tablet PC with a data card, but excludes access from mobile handsets. A smartphone combines a piece of hardware with both a telephone and a mobile broadband connection.

[105] Ofcom, 2010 WBA Statement, paragraph 3.20.

[106] BT, Response to Ofcom Call for Inputs on Wholesale Broadband Access Markets, 7 January 2013, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/responses/BT.pdf.

fact that there has been a change in the way that individuals (especially certain age groups) access the internet, particularly driven by the increase in use of tablets and smartphones (it referred to evidence from Ofcom's CMR 2012). It said that this preference could lead more people to move away from fixed-line services and become 'mobile only' users.

3.83 Virgin Media believed that there was scope for mobile services to substitute for fixed broadband services rather than acting as a complement to them, especially due to the roll-out of 4G services. It argued that, while currently the retail prices of 4G services were high in comparison to fixed services, it anticipated a reduction in the future, as a result of more operators providing the service.[107]

3.84 No other respondents mentioned any issues concerning mobile broadband in their responses to the 2012 WBA Call for Inputs.

## Position in this market review

*Mobile broadband access is not a sufficient constraint on fixed access today*

3.85 While take-up of mobile broadband has continued to grow, it is almost always used alongside, rather than in place of, fixed broadband access. The CMR 2012 found that the majority of mobile broadband connections are purchased in addition to fixed broadband access, with only 5% of households relying solely on mobile broadband (and some of these may only be using mobile products because fixed line services are not available).[108]

3.86 This use of mobile broadband in addition to, rather than instead of, fixed broadband is likely to reflect the lower quality of mobile products, in terms of speed and data allowance.

3.87 At prices that are broadly comparable, the actual speed users receive on mobile broadband are likely to be significantly lower than they can receive on fixed broadband. Speeds can be particularly constrained indoors due to the difficulties mobile signals have in penetrating buildings effectively. Inclusive data allowances in mobile broadband tariffs are usually capped at levels that are well below fixed broadband. Most mobile broadband offers cap data allowance between 0.5GB and 15GB a month, while fixed broadband tariffs usually include at least 10GB data allowance with the majority including 'unlimited' (subject to fair usage policy) data allowance. The average data throughput per fixed broadband residential connection is higher than is offered by mobile broadband packages, at 23GB for June 2012, having risen from 17GB in March 2011.[109]

3.88 On this basis, we do not think that mobile broadband offers significant substitutability for fixed broadband.[110]

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[107] Virgin Media, Review of the Wholesale Broadband Access Market – Call for Inputs, 20 December 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/responses/Virgin_Media.pdf.

[108] Ofcom, CMR, July, 2012, p.26, http://stakeholders.ofcom.org.uk/binaries/research/cmr/cmr12/UK_5.pdf.

[109] Ofcom, Infrastructure Report 2012, p.2.

[110] We are aware that in Austria, the regulator has found that fixed wholesale broadband for residential consumers is constrained by mobile but the European Commission concluded that fixed

*Internet access over smartphone is not a sufficient constraint on fixed access today*

3.89 A smartphone can also be used to access the internet. In addition to connecting the smartphone itself, a small proportion of smartphone users (12.6%) also use their handset as a modem to connect other devices.[111]

3.90 Although tariffs for smartphones may be similar to fixed broadband, the same factors which lower the quality of mobile broadband are valid for broadband over smartphone. Specifically:

- Broadband access over smartphones is used alongside (rather than in place of) fixed broadband access. Only 3% of UK adults rely solely on their phone for home internet access.[112]

- Monthly allowances are usually capped at levels well below those of fixed line: most mobile operators have offers with data allowance between 100MB and 4GB per month while fixed broadband usually offers at least 10GB data allowance with many products offering 40GB or even unlimited data allowance.[113]

- The Ofcom research on mobile broadband speed indicates that broadband speed via smartphone reaches more than 3Mbit/s less than 10% of the time, which is well below the speeds broadband delivers.[114]

- The differences in quality of mobile connectivity are reflected in the extent to which consumers use WiFi, supplied over fixed line, to connect their smartphones in preference to mobile where possible. In the CMR 2012, we stated that smartphone users adopted WiFi to save on mobile data and to increase speed.[115] 71% of smartphone users accessing the internet use WiFi to offload data and 28% use WiFi as often as they use the mobile network.[116]

## Future developments

3.91 Ofcom has recently concluded its 4G spectrum auction and 4G services are likely to become increasingly available over the review period. EE is already providing a 4G service re-using existing spectrum to provide coverage of 4G in 11 cities across the UK and has said that it is aiming to cover 98% of the UK population by the end of

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and mobile retail broadband services do not normally belong to the same market and the situation in the Austrian market led to a temporary substitutability of the two. The Commission also recommended the Austrian regulator closely monitor future market developments and change the market definition if its forecasts prove to be incorrect. We notice that the mobile broadband penetration rate in Austria reached 13.8% in July 2009 in contrast to 4.9% in the UK. http://europa.eu/rapid/press-release_IP-09-1888_en.htm?locale=en

[111] Ofcom, CMR 2012, p.288.

[112] Ofcom, CMR 2012, p.293, figure 5.93.

[113] The data allowances sampled are for “pay monthly” plans, both for sim only and phone plans. One operator, 3, offers also all-you-can-eat data allowance, but this is an exception.

[114] Ofcom, Measuring Mobile Broadband in the UK, figure 6.2 http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/bbspeeds2010/Mobile_BB_performance.pdf. The results may not be fully representative of all speeds since they were sampled from a drive test, but seem nonetheless indicative of the fact that speeds on the mobile network are lower than fixed line.

[115] Ofcom, CMR 2012, p.293.

[116] Ofcom, CMR 2012, p.293, figure 5.93.

2014.[117] Vodafone and O2 plan to launch 4G in the summer of 2013 and Three in the autumn.[118] On the basis of these plans, it appears likely that the vast majority of the UK population will have access to a 4G network from at least one service provider over the review period.

3.92 These developments increase the quality of mobile products. However, there are on-going developments in fixed line services, specifically the development of fibre, which increase broadband speeds. Thus the developments in mobile do not necessarily imply it is appropriate to define a single market for mobile and fixed line services. Indeed, the evidence considered below suggests that even on a forward looking basis, mobile is likely to remain in a separate market.

3.93 Table 3.4 below provides information on 4G mobile broadband services offered by EE and Table 3.5 provides information on EE's 4G smartphones tariffs.

**Table 3.4: EE's 4G mobile broadband price, speed and data allowance**

| Price (£/month) | Max download speed (Mbit/s) | Max upload speed (Mbit/s) | Data allowance (GB) |
|---|---|---|---|
| 12.99 | 150 | 50 | 1 |
| 15.99 | 150 | 50 | 3 |
| 20.99 | 150 | 50 | 5 |
| 25.99 | 150 | 50 | 8 |

*Source: Data collected by Ofcom from provider's website as of 13 May 2013*

**Table 3.5: EE's 4G broadband over smartphone price, speed and data allowance[119]**

| Price (£/month) | Max download speed (Mbit/s) | Max upload speed (Mbit/s) | Data allowance (GB) |
|---|---|---|---|
| 51 | 150 | 50 | 1 |
| 56 | 150 | 50 | 3 |
| 61 | 150 | 50 | 5 |
| 66 | 150 | 50 | 8 |

*Source: Data collected by Ofcom from provider's website as of 24 May 2013*

3.94 4G smartphone tariffs are considerably more expensive than fixed line tariffs, although they do cover/subsidise the price of the phone. 4G services offer increased mobile broadband speeds, potentially similar to those achieved on CGA fixed line services. The actual download and upload speed are also significantly improved over previous (3G-based) mobile broadband services. EE aims to boost average speeds to 20 Mbit/s,[120] and a test in Manchester in November 2012 showed that the average download speed for EE was 17Mbit/s on 4G.[121] Given the improved speed, 4G mobile services may be regarded by some consumers as a possible alternative to

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[117] EE press release, "EE continues 4G roll-out with 17 new towns and cities to be switched on by March 2013", 13 December 2012, page 3.
[118] Enders Analysis, *UK mobile market Q4 2012 - 4G launches: little impact so far, more to come*, 16 April 2013, page 2.
[119] Data sampled in May 2013 for 12 month contracts.
[120] EE, *Doubling 4G Network Speeds and Pushing the Pace of UK Mobile Innovation,* 9 April 2013, https://explore.ee.co.uk/our-company/newsroom/ee-doubling-4g-network-speeds-and-pushing-the-pace-of-uk-mobile-innovation
[121] EE, *EE continues 4G roll-out with 17 new towns and cities to be switched on by March 2013*, 13 December 2012, page 2.

some fixed broadband products. However, the limited data allowance for mobile broadband is likely to mean that the majority of mobile broadband users continue to purchase fixed broadband services as well. As shown in Table 3.4 and Table 3.5, data limitations are still below 8GB, while fixed lines services typically offer much higher data allowances and often unlimited. These limitations on mobile products are likely to make them inappropriate for use with bandwidth-hungry devices (e.g. HD Smart TVs) which will be used increasingly over the review period.

3.95 Continued investment in LTE is likely to increase bandwidth capacity. However, as more consumers obtain LTE devices and the data usage per device increases, the contention between users will increase in 'macro' cells. This will tend to reduce the capacity. This may mean that tight caps on data allowance remain and average data speeds achieved on 4G may decline compared to what is being achieved initially when there are few users.

3.96 WiFi off load is expected to become more important as data volumes grow and smartphone penetration increases.[122,123] Other forms of small cells which use LTE, such as femtocells, are also being launched in order to overcome capacity constraints and improve speed on the mobile network.[124] Both WiFi and femtocells rely on a fixed connection to backhaul the data. The growth in the importance of small cells for delivering good mobile services weakens rather than strengthens the substitutability between mobile and fixed broadband connections.

## Conclusion

3.97 The above analysis suggests that mobile broadband access does not currently constrain fixed broadband access. Neither does access to the internet via a smartphone. This is because speeds are lower and data allowances are much more restrictive. The reduced quality of the mobile network compared to fixed lines mean that people often use WiFi to offload data where possible.

3.98 In future, faster 4G services may change the mobile landscape. This is still in the early stage of development with uncertainties such as its roll-out, take-up and speed. Within the timescale of the current market review period, we think it appropriate to continue to consider that mobile broadband access is not in the same relevant market as fixed broadband access. Although 4G mobile broadband access is likely to increase significantly over the period of the market review, we consider that most consumers will continue to require fixed broadband and will regard mobile broadband as a complementary service. This is because it is likely that capacity constraints in the mobile network mean that data allowance or speed are much more limited than fixed broadband services.

3.99 In addition, forecasts expect WiFi to increase in importance in the future. As WiFi requires a fixed connection, this may tend to weaken the constraint from mobile in the future. Similarly, small cells, such as femtocells, may also grow in importance,

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[122] Cisco expects 46 percent of all mobile traffic to be off-loaded to fixed or WiFi by 2017, compared with 33 percent now.
[123] See Ofcom's Mobile Auction Competition Assessment which contains evidence on the continued importance of Wifi as an alternative to mobile spectrum (paragraphs A2.41 to A2.44), http://stakeholders.ofcom.org.uk/binaries/consultations/award-800mhz/statement/Annexes1-6.pdf.
[124] See Ofcom's Mobile Auction Competition Assessment which contains evidence on the growth of femto cells (paragraph A.245), http://stakeholders.ofcom.org.uk/binaries/consultations/award-800mhz/statement/Annexes1-6.pdf.

and these also require a fixed connection. This also suggests that consumers will continue to use both fixed broadband and mobile services.

3.100 This is consistent with research by Nomura which showed that in Sweden and Germany, where LTE services have been promoted most actively, it is difficult to discern from the trends of incumbent's fixed-line loss in the past two years that fixed to mobile substitution has increased directly as a function of LTE.[125]

### Symmetric broadband services

Introduction

3.101 Symmetric services are provided using leased lines, Symmetric Digital Subscriber Loop (SDSL) or Ethernet in the First Mile (EFM). They provide equal maximum upload and download speeds. In addition, they can be configured to deliver high quality broadband services for example with a bandwidth guarantee, lower latency and dedicated connectivity.

3.102 From customers' point of view, leased lines may be a substitute to asymmetric broadband access when the latter is used to access a virtual private network (VPN). In this section, we consider whether this substitution is such that a SSNIP on high end asymmetric broadband products would be rendered unprofitable because business customers accessing VPNs via broadband would use symmetric services to access the private network instead. If so, it could be included in the same market as high end asymmetric broadband services and, via a chain of substitution, all other asymmetric residential and business broadband services.

3.103 In the 2010 WBA Statement we considered SDSL services, but these are being phased out. As noted in the 2013 BCMR, BT has announced it will be retiring its SDSL products by the end of 2014.[126] While other LLU providers will continue to provide SDSL services, this announcement suggests that the product is coming to the end of its life. We therefore do not propose to consider it in detail here.

3.104 SDSL is being replaced in part by services provided over EFM. These services are provided over the copper network using LLU. As explained in Annex 10, lines unbundled for EFM use are included in our market share analysis, but given the low volumes this has very little effect. We therefore do not think it necessary to conclude on whether or not EFM should be included in the product market.

Position in WBA 2010

3.105 In the 2010 WBA Statement we concluded symmetric services were not part of the relevant market. We noted that leased lines were not a substitute for asymmetric broadband products because of higher prices and important functional differences. We argued that consumers would not switch rapidly between symmetric and asymmetric services even in response to significant price differentials, and that switching supply from symmetric services to asymmetric would be unprofitable.

[125] Nomura Equity Research, "2013 Telecom Sector Outlook", 30 November 2012, page 12.
[126] See 2013 BCMR Statement, paragraph 3.143.

## 2012 WBA Call for Inputs

3.106 Only one stakeholder, Solway Communications Limited, mentioned any issues concerning symmetric broadband services in its response to our 2012 WBA Call for Inputs. It asserted that "the restriction of WBA to asymmetric connections is anachronistic" and must be dropped since upload speeds are catching download speeds up.[127]

## Position in this market review

3.107 Current internet access usage patterns will change over time, with more end-users demanding increasing upload speeds, e.g. putting user-generated content online and therefore needing higher upload speeds. However, the need for download speeds has also increased. This suggests that asymmetric services are still appropriate for most broadband users, and we have not seen a migration towards symmetric services. For example, in January 2012, Virgin Media announced it would be doubling bandwidths available to most end-users and that uploads would increase in proportion to the increase in downstream bandwidth.[128] Indeed, the 2013 BCMR Statement noted that the trend appears to be towards asymmetric services and users of symmetric packages have switched to business broadband.[129]

3.108 As noted in the 2013 BCMR Statement, asymmetric broadband services do not support many important service characteristics provided with a leased line service. These include differences in terms of contention, latency and jitter, the level of security, resilience options, SLAs/SLGs and synchronisation support.[130]

3.109 Broadband services are also significantly cheaper than leased lines. The BCMR noted that, in general, even at higher bandwidths, broadband is significantly cheaper than leased lines. It suggested that to deliver 2Mbit/s using a partial private circuit (PPC) within the same exchange area would incur an annual wholesale charge of approximately £2,000 (this was a minimum, as it was based on wholesale prices which set a floor for the retail price).[131] This price would only include the leased line; an additional charge for internet access would also be incurred. In contrast, broadband pricing suggest that on average a business can expect to pay £400 a year for a broadband service offering up to 16Mbit/s download bandwidth, increasing to £620 per year on average for a 100Mbit/s service (see Annex 8).

3.110 The 2013 BCMR Statement noted further that broadband services are not positioned as a cheap alternative to symmetric services but are aimed at end-users who demand different service characteristics.[132]

3.111 It is therefore unlikely that leased lines constrain broadband offerings. Given the significant price difference, differences in service features, and the different

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[127] Solway Communications Limited, *Review of the wholesale broadband access markets - Call for Inputs*, 20 December 2012, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/responses/Solway_Communications_Limit1.pdf.

[128] Virgin Media, January 2012, Virgin Media boosts Britain's broadband speeds http://mediacentre.virginmedia.com/Stories/Virgin-Media-boosts-Britain-s-broadband-speeds-2322.aspx.

[129] Ofcom, 2013 BCMR Statement, p.96, paragraph 3.198.

[130] Ofcom, 2013 BCMR Statement, p.90, paragraph 3.177.

[131] Ofcom, 2013 BCMR Statement, p.96, paragraph 3.196.

[132] Ofcom, 2013 BCMR Statement, p.93, paragraph 3.189.

positioning of the products, it seems unlikely a small but significant price increase of high end broadband products would result in significant numbers of customers switching to a leased line.

3.112 Given the trend is towards broadband, it is perhaps more likely that if prices of fibre-based broadband rose, it may dissuade customers that would otherwise have switched from leased lines. This may act as a constraint on fibre-based broadband pricing. It is, however, not clear that the concerns about deterring such potential switching from symmetric services are significant enough to constrain price rises of premium asymmetric products. The price difference between even high end broadband business products and symmetric services is very significant and so a small but significant price rise is unlikely to have a significant impact on the decision to switch from leased lines/SDSL. No responses to the 2012 WBA Call for Inputs suggest this to be the case.

3.113 On the supply side, suppliers of leased lines services could in theory move into the broadband market in response to a SSNIP by a hypothetical monopolist. However, as we stated in 2010, their networks tend to be more highly specified to meet the demands of leased lines customers, which would put them at a cost disadvantage compared to ADSL providers, which would translate into higher retail prices. Such supply is therefore unlikely to be profitable. We have no reason to suppose this position has changed – in particular no respondents to the 2012 WBA Call for Inputs mentioned this in their responses.

Conclusion

3.114 The assessment of the demand-side and supply-side substitution possibilities suggest that symmetric broadband services are more appropriately considered as a separate market to asymmetric broadband internet access. Looking ahead, we see no evidence that this is likely to change.

### Fixed wireless access

Introduction

3.115 Fixed wireless access is the use of wireless technology in the delivery of last mile access that enables subscribers to connect to the fixed line network without the need for cables.

Position in WBA 2010

3.116 The 2010 WBA Statement suggested that fixed wireless access services were not close demand side substitutes for fixed broadband services. Neither was there any possibility of supply side substitution. We therefore proposed that fixed wireless access should not be included in the wholesale WBA market definition.

2012 WBA Call for Inputs

3.117 KCOM was the only respondent to raise the issue of fixed wireless access in its response to the 2012 WBA Call for Inputs. It stated that since the 2010 WBA Statement it has seen accelerated deployment of wireless solutions as an alternative to fixed broadband services. It mentioned that there is currently a number of providers offering wireless DSL connections to both businesses and residential customers. While it said that these connections are currently not being used as wholesale inputs, it believed that this could change in the future. For this reason it suggested that Ofcom should reconsider its views on fixed wireless access as part of this market review.[133]

## Position in this market review

3.118 Fixed wireless access can be used as an in-fill technology, a complementary solution to broadband in urban areas or as an alternative to low bandwidth symmetrical business services. We propose that in none of these cases can fixed wireless access be regarded as a close enough substitute to asymmetric broadband access to be included in the same market.

3.119 Fixed wireless access services via LTE or WiMAX target both business and residential customers. Even though they have been available for several years, they have not become a real alternative to fixed broadband. It is more generally considered as an 'in-fill' technology that can be used to provide services in 'not-spots' (areas where cable and ADSL technologies cannot provide satisfactory services due to technical and/or economic reasons).

3.120 Fixed wireless access services via WiFi are generally offered in urban areas. The quality of fixed wireless access is lower than that of fixed broadband. These products seem to be positioned as complementary to fixed broadband offerings, providing temporary internet access, for example for those who are only at an address for a short time, or in places other than at home or at work. For example, Boingo advertises that the "plan includes WiFi in airports, hotels, restaurants, and cafés".[134]

3.121 Finally, some fixed wireless access providers offer business services in urban areas priced and positioned as a cheaper alternative to low bandwidth symmetrical business services, rather than ADSL. Metranet, for example, offers a 2Mbit/s package priced at £275 a month for a contention ratio of 10:1.[135] However, low bandwidth symmetrical business services are not substitutable for broadband services, so fixed wireless used as an alternative does not seem likely to be regarded as effective demand-side substitute for asymmetric broadband access. Moreover, the products are significantly more expensive than fixed line services.

3.122 We do not think there is a significant possibility of these operators investing in the necessary infrastructure to provide fixed broadband services, in response to a SSNIP on fixed broadband services. Therefore we do not consider it appropriate to widen the market on the basis of supply side considerations.

## Conclusion

3.123 We provisionally conclude that fixed wireless access is not in the same market as broadband access because it is not substitutable in terms of quality and price with broadband access.

[133] KCOM response to the 2012 WBA Call for Inputs, http://stakeholders.ofcom.org.uk/binaries/consultations/review-wholesale-broadband/responses/KCOM.pdf.
[134] Boingo, http://www.boingo.com/wifi-plans/laptop/boingo-uk-ireland/?lang=en .
[135] http://metranet.co.uk/services.htm

## Satellite

3.124 It is possible to get small business systems provided by satellite that closely emulate fixed broadband services, along with more dynamic low latency systems that support advanced broadband applications like VPN, VoIP and video conferencing. Coverage is available anywhere in the UK including the Channel Isles and the Scottish Islands. However, satellite broadband providers typically market their product as an alternative solution to fixed broadband where this is not available (or only at poor quality).[136]

3.125 In the 2010 WBA Statement, we argued that broadband access using satellite was marketed as a replacement solution that could not compare with the standard retail broadband packages in terms of price, quality and set up costs. Consequently, we concluded that too little switching to satellite would follow a price increase of asymmetric broadband to make the price rise unprofitable, and considered satellite broadband was not part of the relevant market.

3.126 We received no comments on satellite access in the replies to our 2012 WBA Call for Inputs.

3.127 It remains the case that satellite broadband products are generally more expensive and lower quality than fixed line services. Irrespective of the similarities in the service characteristics between fixed and satellite broadband services, the prices differentials mean that it is unlikely that a small but significant increase in the price of fixed broadband would result in a sufficient number of customers switching to satellite broadband to render that price increase unprofitable.

### Conclusion

3.128 We propose to exclude satellite broadband from our retail market definition.

## Narrowband

3.129 Developments in the internet access market over the last few years have meant that narrowband dial up internet access has declined significantly since 2005. In 2010, it accounted for only 2% of total internet access connections amongst UK households, and in 2012, only 1%.[137]

3.130 We excluded narrowband internet access from the product market in the 2010 WBA Statement. No stakeholders have suggested that we should now include narrowband. We therefore propose that narrowband and broadband internet access markets will continue to be considered as separate product markets.

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[136] See for example, PointTopic, 4 October 2011, *Satellite broadband: KA-band enters the UK,* p.8

[137] Figure 37, Ofcom, *Consumer Experience 2011,* 6 December 2011 http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-11/research_report_of511a.pdf.
Ofcom, Consumer Experience of 2012, January 2013, p.42, http://stakeholders.ofcom.org.uk/binaries/research/consumer-experience/tce-12/Consumer_Experience_Researc1.pdf.

### Provisional conclusion on retail market definition

3.131 This section has discussed our approach in defining the relevant downstream retail market into which WBA products are supplied. We have discussed the extent to which different services should be included in a single market.

3.132 Based on the analysis above, we propose that the relevant retail market should be defined as 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 services of all speeds provided over copper, cable and fibre. It excludes mobile broadband, symmetric services, fixed wireless access, and satellite broadband. We do not conclude on whether or not there is demand for broadband as a standalone product at the retail level, or whether standalone broadband products are substitutable for bundles.

## Wholesale product market definition

### Introduction

3.133 Having defined the relevant retail product market we now go on to define the relevant market at the wholesale level.

3.134 Demand for WBA is derived from demand for retail broadband services. This suggests that products which are included in the market at the retail level impose an indirect constraint on prices at the wholesale level. Thus products which are included at the retail level are generally included in the market at the wholesale level. This has been the case for all previous WBA reviews. Wholesale markets can be widened if there are direct constraints at the wholesale level that are not included at the retail level. However, previous WBA reviews did not find reason to widen the wholesale market definition. Therefore the wholesale market definition reflected the retail market definition.[138]

3.135 As in the previous WBA reviews, we propose that we define the relevant WBA product market as:

> "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."

3.136 This section is structured as follows:

- We first consider whether supply by LLU and VULA constrain BT's WBA products. We propose that they do.

- We then argue that cable should be included in the same market.

[138] In its response to the 2012 WLA Call for Inputs, TalkTalk discussed an alternative new approach to considering indirect constraints. This is set out in paragraph 7.33 of the 2013 FAMR Consultation. That document also explains why we do not think it appropriate to adopt that approach.

- We then consider whether different speeds should be included in the same market, and propose they should.

- We argue that it is appropriate to define a single market for WBA used to supply residential and business customers in the retail market.

- We also consider bundling, and propose that the market should not include products bundled with broadband but should include broadband bought as part of a bundle (e.g. MPF).

- We then look at mobile, fixed wireless and satellite, which we propose are not included in the product market.

### Constraint from LLU and VULA operators

3.137 LLU and VULA are remedies in the WLA market, upstream from the WBA market, designed to facilitate competition in the retail broadband market. Where they are effective in achieving this aim, there is no further need for regulation at the WBA level. Thus, we consider it appropriate to include supply via VULA and LLU in the wholesale market.

3.138 This is consistent with our previous treatment of LLU. We are not aware of any market developments that would mean we should change our approach. No respondents to the 2012 WBA Call for Inputs identified such a development.

### Cable

3.139 As discussed in the section on retail market, broadband services provided over cable have the same intended use as those provided over copper and fibre, and are positioned as alternative technologies providing the same retail service. Thus, because of derived demand, we believe they should be included in the wholesale market.

3.140 This is consistent with our approach in 2008 and 2010 WBA Statements. For broadband services provided over cable now to be excluded from the market, the extent of substitutability at the retail level would need to have fallen. However, we are not aware of any market developments that would reduce the extent of substitutability. No respondents to the 2012 WBA Call for Inputs identified such a development. We recognise that the deployment of fibre allows for the widespread provision of superfast broadband over BT’s network. However, superfast broadband is also available over Virgin Media’s network.

3.141 We therefore include cable in the same wholesale market due to indirect constraints from demand side substitution at the retail level.

### Speed

3.142 We believe wholesale asymmetric broadband offerings of different speeds, including in particular copper-access and fibre-access products, are in the same market. This reflects the chain of substitution connecting products of different speeds in the retail market. As noted above, since demand at the wholesale level is derived from the retail level, products in the same market at the retail level generally form an indirect constraint at the wholesale level.

3.143 In addition, there may be direct constraints between different speeds. This is because for any given speed, a wholesale price increase is likely to encourage significant substitution to other speeds by CPs purchasing this product. CPs may feel it necessary to have a range of different speed options available but they have some flexibility on where to focus their offerings. If, for example, the price of a particular speed bracket increased, CPs could switch to marketing other speeds in the retail market instead.

3.144 This is consistent with our previous WBA market definition, and we are not aware of any market developments that would mean we should change our approach. No respondents to the 2012 WBA Call for Inputs identified such a development.

### Business versus residential

3.145 As set out above, we propose that business and residential asymmetric broadband internet access services are in the same relevant market at the retail level.

3.146 In the case of broadband internet access, there is unlikely to be a distinction between business and residential services at the wholesale level compared with the retail level. This is largely due to supply-side considerations at the wholesale level.

- The wholesale input to support the provision of asymmetric broadband internet access services to business customers is essentially the same as that used to support the provision of such services to residential customers;

- The underlying costs of providing a WBA product for business end-use are the same as the costs for a product with the same features intended for residential end-use;

- At the wholesale level there is less differentiation between services targeted at business and residential customers. As a result, there is extremely limited scope for a provider of WBA services to price discriminate between the provision of such services for business and residential end use. An ISP would be able to use the lower priced wholesale input to provide services to both residential and business customers; and

- While there may be a distinction in the "service wrap" around the business service, this additional service wrap is generally downstream to the WBA level. This includes the situation where WBA is used as part of a virtual private network VPN.

3.147 On the basis of the above, we propose that there is a broad market definition that includes both business and residential markets. This is consistent with the approach we adopted in the 2008 and 2010 WBA Statements.

### Bundling

3.148 In our discussion of the retail market, we did not conclude on whether to widen the retail market definition to include other products sold in a bundle together with broadband services because there is no independent demand for broadband. We also did not conclude on whether, if there were independent demand for broadband, it was substitutable with broadband sold in a bundle.

3.149 This would not affect the wholesale WBA market definition. This is because even where products are bundled at the retail level, they are not necessarily bundled at the wholesale level. In particular, NGA wholesale products must be combined with other services to supply the end-user with a dual play, or triple play, package. In addition, as discussed in the 2013 Narrowband Consultation, for a variety of reasons, a significant proportion (30%) of all retail LLU lines are still SMPF lines.[139] Thus there is independent demand for broadband at the wholesale level.

3.150 Moreover, bundled voice and broadband provided via MPF competes at the retail level and at the wholesale level with services provided via separate voice and broadband inputs (WLA and SMPF) since it provides the same service with the same quality for the end consumer.[140] Thus we believe that bundled voice and broadband products constrain unbundled products at the wholesale level via indirect constraints from the retail level.

3.151 It is not clear that other products supplied in retail bundles (i.e. TV and mobile) are available in a bundle with broadband at the wholesale level to any significant extent. To the extent that they are, we believe they would be substitutable for separate wholesale services.

3.152 We therefore believe there is independent demand for wholesale broadband services, but that these services are constrained by bundled wholesale packages.

### Mobile

3.153 As set out above, we propose that the retail market definition of asymmetric broadband services does not include mobile broadband services.

3.154 If the price of WBA services increased and mobile operators voluntarily offered a wholesale mobile broadband product, CPs might be able to substitute to a wholesale mobile broadband product and use it to offer a fixed broadband service. Based on our retail analysis of the service characteristics and consumers' experience, it is unlikely that such a change would be profitable for the CP. This is because fixed broadband services tend to be able to offer both higher download speeds as well as higher download limits at a more consistent throughput.

3.155 On the supply side, we believe that the scale of the investment required for mobile networks to respond to a SSNIP by a hypothetical monopolist of fixed broadband services and start supplying fixed line services renders such a response unlikely.

3.156 We therefore propose mobile broadband to be in a separate product market from fixed broadband products at the wholesale level.

### Fixed wireless access

3.157 As discussed in the retail market section above, deployment of broadband services using fixed wireless access so far has been limited to specific geographic areas or specific circumstances. In the short term, given the costs involved in providing fixed wireless access and the lower quality of the service, it is unlikely that an increase in the price of wholesale broadband products will lead a substantial number of CPs to switch to fixed wireless access at the wholesale level. It does not appear to us that

[139] 2013 Narrowband Consultation, paragraph 5.89, http://stakeholders.ofcom.org.uk/binaries/consultations/nmr-2013/summary/NMR_Consultation.pdf.
[140] Ofcom, 2012 Narrowband Consultation, p.59, paragraph 5.89.

this should be regarded as effective demand-side substitutes for asymmetric broadband access.

3.158 On the supply-side, we believe that the scale of the investment required for fixed wireless access providers to respond to a SSNIP by a hypothetical monopolist of fixed broadband services and start supplying fixed line services renders such a response unlikely.

3.159 We therefore propose that broadband using fixed wireless access is not part of the relevant market under consideration in this review.

### Broadband access using satellite

3.160 As with fixed wireless access, broadband access via satellite at the retail level is considered as a niche service and accounts for a small proportion of the total broadband access market. We do not think feasible that satellite providers will start providing broadband access via satellite if wholesale prices of fixed broadband went up. We therefore propose that the market definition does not include satellite broadband.

## Provisional conclusions

3.161 Based on the analysis above, we propose that the relevant WBA 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.

## Consultation questions

***Question 3.1****: Do you agree with Ofcom's proposed product market definitions? If not, please explain why.*

## Section 4

# Geographic market definition

## Summary

4.1 Our proposed definition for the wholesale geographic market is, in summary:[141]

- The Hull Area (0.7% of UK premises);
- Market A: Exchange areas where there are no more than two POs present or forecast to be present (9.6% of UK premises);
- Market B: Exchange areas where there are three or more POs present or forecast to be present (89.7% of premises).

4.2 The relevant wholesale geographic markets that we have identified differ from those identified in the 2010 WBA Statement in two respects.

- First, the conditions of competition in exchanges where BT is the only PO ("BT-only" exchanges) and those exchanges where there is one other PO present or forecast to be present ("BT+1" exchanges) are sufficiently similar to justify their inclusion in the same geographic market (i.e. Market A) for the purpose of our SMP assessment.[142] This reflects the fact that BT's service share is high across both types of exchange and, in contrast to 2010, it is no longer necessary to differentiate between these areas according to the extent of likely future entry.
- Second, the conditions of competition in those exchanges where there are two POs present or forecast to be present, in addition to BT, ("BT+2" exchanges) are sufficiently similar to those in exchanges where BT faces three or more competing POs to justify their inclusion in the same geographic market (i.e. Market B) for the purpose of our SMP assessment. In the 2010 WBA Statement we found that the conditions of competition were appreciably different between BT+2 exchanges in which BT's service share was greater than 50% and BT+2 exchanges in which BT's service share was less than 50%. This would not be appropriate for the current market review. This is because we now have evidence indicating that where there are two POs in addition to BT, BT's service share is expected to decrease significantly and progressively in the years following entry by the third PO.

## Introduction

4.3 The purpose of this section is to define the scope of the relevant WBA geographic markets. Our proposed approach follows that adopted in the 2008 and 2010 WBA Statements, updated to reflect market recent developments, including the additional evidence now available on the impact of LLU entry on competitive conditions over time.

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[141] The full market definition is given at paragraphs 4.113 and 4.114.
[142] The assessment of the number of POs in an exchange area takes into account the exchanges where operators have "committed" to enter as well as those where they are already active at the wholesale level. Our definition of committed entry is explained in paragraphs 4.64 to 4.68.

4.4 In broad terms, competitive conditions in the majority of exchange areas remain unchanged since the last review. In particular, there are still a number of exchanges in which BT is the only PO present, while there does not appear to have been a significant lessening of competition in the exchanges that were found to be effectively competitive in the 2010 WBA Statement.[143] Since the last review, however, there has been additional LLU roll-out in a number of exchanges that were classified as Market 1 or Market 2 exchanges in 2010. As explained below, we have updated our analysis to take into account the additional roll-out that has occurred since the last review, and further planned roll-out during the review period.[144] Evidence gathered during the course of this review indicates that whilst there may be some further LLU roll-out during the review period, over and above that already accounted for in our analysis, this is likely to be more limited than was the case in the 2010 WBA Statement. This reflects the fact that LLU operators have already entered the majority of exchanges that are sufficiently large to justify the sunk costs required for unbundling.

4.5 BT has progressed the deployment of its NGA fibre network since the last review. BT's commercial roll-out of fibre has focused on the areas of the country previously found to be competitive (i.e. in areas that were classified in Market 3 in the 2010 WBA Statement). However, as described in Section 2, state funding via the BDUK scheme may lead to fibre being rolled-out in less competitive areas of the country. At present, however, it is unclear exactly what the impact of this scheme might be. The implications of the roll-out of fibre for our geographic market definition are explained at paragraphs 4.30 to 4.33.

4.6 This section is structured as follows:

- we summarise our position in 2010;
- we summarise relevant responses to our 2012 WBA Call for Inputs;
- we then summarise our approach to market definition;
- we consider competitive conditions at the retail level;
- we consider competitive conditions at the wholesale level;
- we consider how to update our geographic market definitions; and
- we propose our market definition as a whole, based on the combination of product market and geographic market assessments.

## Position in 2010

4.7 In 2010 we defined wholesale geographic markets using the methodology first adopted in the 2008 WBA Statement and set out in the ERG Common Position on Geographic Aspects of Market Analysis (the "ERG Geographic Common

[143] There has also been consolidation in the market, in particular the acquisition of O2 by Sky. However, this was cleared by the OFT, indicating that the acquisition was not expected to lead to any significant lessening of competition. We discuss the impact of this acquisition on our analysis in further detail in paragraphs 4.99 to 4.100.

[144] The assessment of the number of POs in an exchange area takes into account the exchanges where operators have "committed" to enter as well as those where they are already active at the wholesale level. Our definition of committed entry is explained in paragraphs 4.64 to 4.68.

Position").[145] This methodology seeks to identify geographic markets through a process of grouping together BT local exchange areas that have sufficiently homogeneous competitive conditions. Competitive conditions were assessed on the basis of a number of factors, including the number of POs present (where POs were taken as those CPs which were large enough to impose a material competitive constraint and excluding those which were clearly niche operators), current and future LLU deployment, and the service shares of each PO in each BT exchange area.

4.8 In contrast to the 2008 WBA Statement, where all exchanges with three POs were included in Market 2, in the 2010 WBA Statement we introduced a service share criterion to the definitions of Market 2 and Market 3, as we considered that there were appreciable differences of competitive conditions present amongst exchanges with three POs depending on the level of BT's service share.

4.9 We defined four separate wholesale geographic markets in the 2010 review:

- the Hull Area (0.7% of premises);
- Market 1: exchanges where only BT was present or forecast to be present (11.7% of premises);[146]
- Market 2: exchanges where two POs were present or forecast to be present and exchanges where three POs were present or forecast to be present but where BT's share was greater than or equal to 50% (10.0% of premises); and
- Market 3: exchanges where four or more POs were present or forecast to be present and exchanges where three POs were present or forecast to be present but where BT's share was less than 50% (77.6% of premises).

4.10 We also considered the retail market. We proposed two separate retail markets (the UK excluding the Hull Area and the Hull Area) but since the geographic markets we defined at the wholesale level would not have been affected by the precise scope of the retail market we stated it was not necessary to conclude on the retail geographic market.

## 2012 WBA Call for Inputs responses

4.11 In the 2012 WBA Call for Inputs, we asked stakeholders for comments on whether we should adopt the same approach to geographic market definition in this review as we did in the 2010 WBA Statement; whether it was still appropriate to identify four separate geographic markets using the same criteria as in the 2010 WBA Statement; and what was the most appropriate way to capture changes in competition that may arise from future roll-out by POs.

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[145] ERG, *Common Position on Geographic Aspects of Market Analysis (definition and remedies),* October 2008, http://www.irg.eu/streaming/ERG%20(08)%2020%20final%20CP%20Geog%20Aspects%20081016.pdf?contentId=545387&field=ATTACHED_FILE.

[146] In assessing forecast plans, operators were only counted as present where they had firm plans to deploy in specific exchanges. The analysis of the size of each market was based on information gathered in June 2010.

4.12 At the retail level, no stakeholders suggested we should change the conclusions we reached in the 2010 WBA Statement.

4.13 As a general comment concerning the wholesale market definition, all stakeholders agreed with the spirit of our approach to grouping exchanges into homogeneous areas:

- KCOM said that the Hull Area should continue to be treated as a separate geographic market in this review and said that it had no comment on the methodology we followed;
- Sky said that developments in the market were not important enough to change the approach we adopted last time;
- Virgin Media concurred with our previous approach;
- EE generally agreed with the approach of aggregating exchanges into groups with homogeneous competitive conditions;
- TalkTalk recognised that it was appropriate to group exchanges into homogeneous groups, and that the metrics we used remained appropriate. It also added the actual rules remained broadly sound.

4.14 However, some respondents (BT, EE, FCS, Bit Commons) challenged aspects of our previous approach:

- BT and EE suggested changes to the way we delineated competitive areas from non competitive areas:
    - o BT argued that the additional service share criterion we used to distinguish between Market 2 and Market 3 was now irrelevant, and that all exchanges with three POs should be classified as competitive. In addition, it said that exchanges with two POs should be classified as competitive where those exchanges served more than 3,000 premises.[147]
    - o BT also submitted a report by its consultants SPC which suggested the definition of geographic markets (excluding Hull) could be retained at three or simplified and reduced to two: one with those exchange areas where there is only BT or BT plus one of Sky, TalkTalk and Virgin Media; the other with those exchanges with BT plus two or more of these operators.[148]
    - o EE argued that there was no need to continue to define a separate Market 2, and that Market 2 exchanges should be combined with Market 3 exchanges so that only areas served only by BT should be considered uncompetitive.
    - o BT also disagreed with the threshold we used to determine Virgin Media's presence at an exchange.

[147] BT's (in conjunction with SPC Network) additional s.135 submission, *'The choice of multiple criteria in geographic market definition'*, of 26 April 2013.
[148] BT's (in conjunction with SPC Network) additional s.135 submission, *'The choice of multiple criteria in geographic market definition'*, of 26 April 2013.

- FCS and Bit Commons argued that our market definition was inappropriate because the market is moving increasingly to services based on fibre networks.

- TalkTalk criticised the way we took into account future LLU roll-out in the 2010 WBA Statement. It considered that planned roll-out should be taken into account in the same way as existing roll-out, and if there is some uncertainty about the planned roll-out, Ofcom should discuss in further detail with the operator.

- BT and EE suggested we should use a mechanism of automatically updating the geographic market definition in the course of the review period in the event that CPs enter new exchanges during the course of the market review period.

## Approach to geographic market definition

4.15 The purpose of market definition in this review is to structure and inform our forward looking assessment of whether SMP exists in the WBA market. Market definition is not an end in itself, but is intended to assist the competition assessment in order to understand whether broadband customers are protected by effective competition, or whether ex ante regulation is required.

4.16 In formulating our approach to market definition, we have had regard to the Commission's Recommendation on Markets and the accompanying Explanatory Memorandum, as well as the Commission's SMP Guidelines and the ERG Geographic Common Position.

4.17 Our general approach to market definition is set out in Annex 9. As in the 2010 WBA Statement, and discussed in Section 3, we have applied the Modified Greenfield Approach when carrying out the market definition exercise. This means that the market definition exercise is conducted in relation to a hypothetical scenario in which there are no ex ante SMP remedies in the WBA market, but ex ante SMP remedies in the upstream WLA market (i.e. LLU, VULA, SLU and PIA exist).

4.18 As in the 2010 WBA Statement, we first consider the geographic boundaries of the retail market before considering the wholesale market. Our approach to wholesale geographic market definition then follows the same basic approach used in the 2008 and 2010 WBA Statements. In particular, our analysis focuses on the assessment of competition in local exchange areas and then aggregates exchanges with sufficiently similar competitive conditions into wider geographic markets.

4.19 In order to inform our forward looking assessment, we have considered the existing market conditions, taking into account past performance and data. We have also taken into account market developments over the course of the review period.

## Retail geographic market definition

4.20 Although our primary interest is in the wholesale market, in order to assess competitive conditions at the wholesale level, we must take account of the competitive conditions at the retail level, which provide an indirect constraint on wholesale competition.

4.21 In general, when assessing the geographic scope of fixed-line communications markets, the application of demand-side and supply-side substitution through the hypothetical monopoly test can lead to very narrow geographic market definitions. This is because end-users are unlikely to move home to benefit from lower prices, thus demand side substitution between different areas is not possible. Moreover, supplying a new area, either by unbundling a new exchange or extending an existing network, can require significant sunk costs, limiting supply side substitution.

4.22 Areas which are not linked by supply- and demand-side substitution can nevertheless be included in the same market if they are linked instead by common pricing across different areas. In the retail broadband market, however, prices vary across the country (see Annex 8). CPs typically offer differentiated prices depending on whether they serve the retail market using LLU (on-net) or WBA products purchased from another CP, particularly BT (off-net). EE, which supplies purely using WBA, also prices differentially, with prices very much higher in Market 1 areas. Although BT's main retail offering is currently priced nationally, its wholly-owned subsidiary Plus.net does vary its pricing on a geographic basis (see Annex 8). In the absence of SMP remedies in the WBA market, BT could also decide to vary the prices of its broadband offerings on a geographic basis, for example to account for variations in competitive conditions that reflect the extent to which other operators are able to self-supply retail broadband services. Fibre offerings are not yet available nationwide, suggesting further differentiation by area. Taken together, this suggests that it is not appropriate to define a national market due to a common pricing constraint.

4.23 The geographic scope of the retail market is therefore likely to be local, reflecting the geographic variation in LLU presence and cable coverage across BT's exchange areas. There is also likely to be a distinct retail geographic market in the Hull Area.

4.24 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, so that where the WBA market is competitive, the retail market will be competitive, and where the WBA market is not competitive, the retail market will not be competitive.

4.25 To the extent that competition at the retail level in the absence of SMP regulation may follow the pattern of competition at the wholesale level, and given that the retail market definition is used only to inform the analysis of wholesale markets, it is not necessary for us to conclude on the precise scope of the retail geographic market for the purpose of this review, as our primary focus is the wholesale market.

## Wholesale geographic market definition

4.26 In this section we consider the wholesale geographic market definition. As in the 2008 and 2010 WBA Statements, we propose to identify a separate market in the Hull Area. In this area KCOM operates the local access network (as opposed to BT in the rest of the UK) and is by far the largest supplier at the retail level in the Hull Area. The competitive conditions in the Hull Area therefore differ from the rest of the UK.[149]

4.27 With regards to the geographic scope of wholesale market, we propose to use the same basic approach as in 2010, which is in line with ERG Geographic Common Position. In this approach, competitive conditions are assessed at the level of the local exchange area, and exchanges are then aggregated into wider geographic markets that form the basis of the SMP assessment. The aggregation of exchanges into geographic markets seeks to distinguish between areas where competitive conditions are appreciably different. Exchanges are therefore grouped together if

[149] MS3 has also recently entered the Hull Area, but at present has a very small share – see paragraph 5.188.

competitive conditions in these areas are sufficiently homogeneous, but placed in different geographic markets if competitive conditions are appreciably different.

4.28 In the remainder of this section we consider the rest of the UK, excluding the Hull Area. It is structured as follows:

- We first explain why we consider the appropriate geographic unit to be the area served by CGA-based services from each local exchange, including our analysis of the impact of the roll-out of fibre and how we account for the presence of Virgin Media.
- Next, we describe our method for assessing competitive conditions in BT local exchange areas, including how we determine our list of POs and how we ensure a forward looking view of the market.
- We then explain how we aggregate exchanges into geographic markets based on the homogeneity of competitive conditions.
- Finally, we summarise our geographic market definition.

### The local exchange area for current generation services as the geographic unit

4.29 In the 2008 and 2010 WBA Statements, we considered that BT exchange areas (based on current generation services) were the most suitable geographic unit on which to base the geographic analysis. This was because these areas align exactly with the upstream regulatory remedy (LLU) and LLU was a significant driver of competition in the WBA market. As discussed below, despite the growth in fibre, we believe this remains the most appropriate geographic unit for the current review. This section also discusses how to account for Virgin Media, whose cable network does not map precisely onto the footprint of BT's exchanges.

#### The impact of fibre

4.30 As discussed in Section 2, BT is deploying fibre-based broadband services. Where it deploys fibre, CPs are also able to purchase a regulated product in the WLA market (VULA) which enables them to provide NGA services to their retail customers. BT intends to use fewer local exchanges to provide access to the upstream fibre-based product than it uses to provide access to the copper product (LLU). The fibre product available at a particular local exchange will cover a wider geographic area than the copper access network that is accessed at that same exchange.

4.31 We considered the implications of NGA networks for geographic market definition in the 2010 WBA Statement. At that time we concluded that local exchange areas were the appropriate basis for geographic analysis, taking NGA into account. We considered competitive conditions for current and next generation access were likely to be the same for a given exchange because the POs present in the exchange would have access to, and the incentive to make use of, the upstream WLA remedies provided over both technologies. We consider that this is still the case and so remain of the view that fibre deployment does not require us to adopt a new method for our market definition for the purpose of this review. Moreover, based on BT's forecasts for fibre roll-out over the next two years, the vast majority of areas where fibre has been or will be deployed commercially are in the area defined as Market 3 in the

2010 WBA Statement and so were classified as competitive.[150] We do not believe competition is likely to have decreased in these areas, as the number of operators in these areas remains high. Therefore the commercial roll-out of fibre does not introduce a change in the competitive conditions.

4.32 Deployments under the BDUK scheme aim to extend the coverage of NGA and may suggest fibre could overlap with local exchange areas where there is limited or no use of LLU, potentially providing an additional constraint. However, we consider that we are unable to account for this in our analysis at this stage because the exact locations where BDUK fibre will be deployed has not yet been determined, the timing of roll-out is uncertain and there remains uncertainty over the take-up of fibre-based services.

4.33 Therefore we propose that the local exchange areas based on the current generation access network continues to be the most appropriate geographic unit for the WBA market.

<u>Accounting for Virgin Media</u>

4.34 Virgin Media has its own cable network, covering just under half ([✂]%) of UK premises.[151] In these areas, it does not rely on BT for the provision of WBA services.

4.35 Virgin Media's network does not precisely map onto the footprint of BT's exchanges. Therefore it is possible that Virgin Media's network serves a subset of the premises that are connected to an exchange. However, as in the 2010 WBA Statement, we believe that it is still appropriate to consider competition on the basis of the local exchange. This is because it is suitable for considering the competitive constraint from the majority of other operators (i.e. LLU operators).

4.36 For Virgin Media to exert a competitive constraint in a given exchange area, it must be able to compete with other operators in a significant part of that area. In 2008 and 2010, we concluded that Virgin Media should be considered to be 'present' in an exchange area if its network was able to supply at least 65% of the premises in that exchange area.

4.37 BT has argued that the threshold of 65% is too high because it underestimates Virgin Media's presence and strength, as it does not take into account the potential for Virgin Media to supply a service to additional households at the edge of its existing network areas at a low incremental cost.[152]

4.38 In a report submitted to Ofcom in March 2013 BT added that "[the 65% threshold]…may not reflect the circumstances under which Virgin Media has a significant impact on BT's market share". [153] This was based on an econometric study where BT's level of service shares was regressed on Virgin Media's presence. In the analysis, Virgin Media was defined to be present in an exchange wherever it had at least five subscribers in that exchange. BT found that where Virgin Media was present (based on this criterion), it tended to decrease BT's service shares. BT looked at Virgin Media's coverage (in terms of premises passed) in Market 3 and observed that in 36% of these exchanges where Virgin Media was present based on

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[150] Ofcom calculations based on BT, response to Q.1 of the s.135 notice, 28 November 2012.
[151] Ofcom calculations based on Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[152] BT response to Q2 of 2012 WBA Call for Inputs, 7 January 2012.
[153] BT, additional submission, *Econometric modelling of broadband penetration in the UK: An updated analysis for 2008-2012*, 27 March 2013.

their definition, Virgin Media passed less than 65% of premises, i.e. it was considered 'not present' by our definition. BT stated that detailed analysis indicated "there is a significant impact [on BT] when Virgin Media is present in exchanges where its coverage falls in the range 30-65%". BT however did not submit analysis in support of this.[154]

4.39 BT's submission does not show that the choice of a 65% threshold should be changed. BT first shows that there is a general link between Virgin Media selling broadband services and BT losing service shares. However, the analysis BT submitted does not look at how the impact on market shares varies according to the extent of Virgin Media's coverage in that exchange. The observation that in general there is an effect, combined with the observation than in some cases Virgin Media may have passed only a proportion of premises lower than 65% is not sufficient to convince us that a lower threshold is more suitable. BT refers to more detailed analysis which may have distinguished the impact on BT's share according to the extent of Virgin Media's presence but it did not submit this analysis.[155]

4.40 Characterising presence based on the number of active connections irrespective of coverage supposes that Virgin Media can expand its customer base at little cost, as an LLU operator may do once it unbundles an exchange. However, we continue to believe that Virgin Media cannot significantly and quickly extend coverage of its cable network due to the large costs it would have to incur. As a result a higher threshold is likely to be more appropriate than a lower threshold. Virgin Media informed us that it plans to extend its network to an additional tens of thousands [✂] of premises a year, but these were mostly in new developments, and to a lesser extent as 'in-fills'.[156] Moreover, to the extent there is any expansion, it is likely to be close to its current network, which is in more densely populated (urban) areas. Indeed, the network extensions concern exchange areas which we classified as competitive in the 2010 review. This suggests any new build that does occur is unlikely to have a material impact on the competitive conditions in the market.

4.41 Moreover, the exact threshold we use does not substantially impact our market definition in terms of allocation of exchanges across markets. Our sensitivity analysis shown in Annex 10 varies the coverage threshold for including Virgin Media as a PO. Moving the threshold from 50% to 85% moves only [✂] [less than 1%] of premises from Market A to Market B. Even if we move the threshold from 30% to 85%, it would mean only [✂] [less than 1%] of premises move from Market A to Market B.[157]

4.42 Given that we believe Virgin Media is unlikely to rapidly expand its coverage within exchange areas in response to changing competitive conditions, and the threshold we use does not substantially impact our market definition in terms of allocation of exchanges across markets, we propose to retain the 65% threshold that we used in 2010.

## Lack of common pricing constraint

4.43 As in the 2008 and 2010 WBA Statements, we do not believe there is a common pricing constraint linking different areas. We have already noted that, absent SMP

[154] Ibid.
[155] Ibid.
[156] Virgin Media response to Q.1 of the s.135 notice, 28 November 2012.
[157] Ofcom calculations based on BT response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

remedies in the WBA market, there will not necessarily be an effective common pricing constraint at the retail level. Wholesale prices for WBA services would be likely to reflect local competitive conditions in the absence of SMP regulation. BT's WBA prices currently vary across the geographic markets defined in the 2010 WBA Statement. In exchanges included in the 2010 Market 1 definition, BT's prices are determined by the charge control; in Market 2, which was subject to cost orientation, they are slightly higher; and in Market 3 (the competitive market), lower. It further differentiates its wholesale prices in Market 3 by offering discounts from its list price. [✂][158]

## Criteria for assessing competitive conditions in each exchange

4.44 In this section we explain how we propose to assess competitive conditions in local exchanges. This analysis forms the basis of our subsequent grouping of exchanges with sufficiently similar competitive conditions into the geographic markets that form the basis of our SMP assessment.

4.45 We consider several factors, discussed in turn below:

- the number of operators present at the exchange that exert a material competitive constraint (these are referred to as POs);
- service shares at the exchange; and
- the likelihood of further entry in the exchange.

4.46 As in the 2010 review, we continue to consider the number of POs present at an exchange (as defined below) in assessing the competitive conditions.

4.47 For our calculation of service shares, we use circuit volume data at the exchange level to determine volumes of active broadband connections supplied by each operator. Shares can then be calculated by dividing an operator's active circuits by all operators' active circuits. Shares include broadband connections provided via MPF and SMPF on BT's copper network (either by BT or by an LLU operator) or by Virgin Media using its cable network.

4.48 Our analysis does not include wholesale products based on fibre (GEA products), as we did not have a complete set of fibre data for all CPs. Differences in the fibre network topology mean that it would have been difficult to combine data on fibre with our database relating to the CGA network. Where relevant, we comment in qualitative terms on the effect that the exclusion of fibre may have but find that it does not significantly affect our analysis of competitive conditions. This is because, as explained in paragraph 4.31 the vast majority of areas where fibre has currently been deployed belong to exchanges that we found to be competitive in the 2010 WBA Statement (Market 3). We do not believe competition in these areas is likely to have decreased, as the number of operators in these areas remains high,[159] and BT's share is therefore correspondingly low.

[158] [✂]
[159] In March 2013, Sky announced its proposed acquisition of O2. This was cleared by the OFT in May 2013 which considered the acquisition would not significantly lessen competition. OFT, Decision ME/5913/13, 16 May 2013, http://www.oft.gov.uk/shared_oft/mergers_ea02/2013/BskyB.pdf.

4.49 We recognise that some active circuits will be used for services we propose are outside the WBA market such as symmetric services including Ethernet in the First Mile (EFM). Given the low proportion of such circuits we do not believe this is likely to have a significant effect on our analysis.

4.50 Compared to our 2010 review, we have expanded our analysis on service shares to consider in further detail how they may evolve over time. This is in line with BT's response to our 2012 WBA Call for Inputs, which emphasised that the development in service shares over time was important to our forward-looking assessment of geographic boundaries.

4.51 BT suggested in its 2012 WBA Call for Inputs response that we should use additional criteria for assessing geographic market definition, such as market concentration indices and the presence of retail bundling. We have considered these possible additional criteria, but have decided not to include them in our analysis since they do not change our conclusions.

4.52 Our analysis of Pos' coverage and service shares is based on data gathered in December 2012. We plan to update this data and our analysis prior to publication of the final statement.

Determining the list of Principal Operators

4.53 Of the many operators that have unbundled local exchanges in the UK, some focus on serving only small geographic areas or narrowly defined consumer segments. In carrying out our assessment, we propose to restrict our attention to the providers that are likely to exert a substantial competitive constraint on the other operators. This is captured by our definition of a PO, a concept we also used in the 2010 WBA Statement.

4.54 In order to assess which CPs to categorise as POs, we calculated the UK network coverage (in terms of premises) for each of the largest operators. In order to ensure our analysis was forward-looking, we took account of planned roll-outs by operators, provided they met our definition of "committed" roll-out (see paragraphs 4.64 to 4.68 for definition of committed vs. uncommitted roll-outs). The coverage of exchanges of the eight largest CPs as of December 2012 is shown in Table 4.1.

4.55 In addition to considering the coverage, we also looked at CPs' service shares. In our 2008 and 2010 WBA market reviews the European Commission had argued that geographic market definition should include levels and trends in market shares. The ERG Geographic Common Position also stresses the importance of shares, and their evolution, in considering geographic analysis.[160] CPs' national service shares are shown in Table 4.1. Below we comment qualitatively on exchange level service shares and on the evolution of national and exchange level service shares since 2010.

4.56 In May 2013, O2's broadband business was acquired by Sky. We have considered the constraint which may have been imposed by O2 before its acquisition by Sky, as it is relevant for our historical analysis of the relationship between the number of POs and BT's service shares that is presented in the remainder of this section. However, consistent with our approach to mergers in previous cases we propose to update our

[160] ERG, *Common Position on Geographic Aspects of Market Analysis (definition and remedies),* October 2008, p.13-14.

analysis for the statement to account for the merger. We have carried out an analysis of the effects of the merger and, as explained in paragraphs 4.99 to 4.100, this would not impact the size of Market A and Market B.

**Table 4.1: Network coverage (in terms of premises) and national service share for major CPs, December 2012**

| CP | Coverage (UK excluding the Hull Area) | National service share (UK excluding the Hull Area) |
|---|---|---|
| BT | 100% | 30-40% [✂] |
| TalkTalk | 93% | 15-25% [✂] |
| Sky | 90% | 15-25% [✂] |
| O2 | 60-70% [ ✂ ] | 0-10% [✂] |
| Vodafone[161] | 60% | 0-10% [✂] |
| Virgin Media[162] | 45-50% [ ✂ ] | 15-25% [✂] |
| Updata | 18% | 0-10% [✂] |
| Zen | 16% | 0-10% [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [163]

4.57 While there are eight CPs covering a substantial proportion of UK premises, only four of them serve a substantial share of the market: BT, Virgin Media, Sky and TalkTalk. All of these are large vertically integrated companies, well established in several telecommunications markets. We propose, as we did in the 2010 WBA Statement, to include them in the list of POs.

4.58 O2 may have imposed a significant constraint on BT before it was acquired by Sky. Like BT, Virgin Media, Sky and TalkTalk, O2 was a large vertically integrated company, present in several telecommunications markets where it is a well-established player. Although its national service share was low in December 2012, and moreover had been low throughout the 2010 review period, in some exchanges its service share was as high as [✂] [20-30%]. This suggests it may have exerted a significant competitive constraint in some areas. As we are unaware of any barriers to expansion in other areas where it has rolled out, it could also have represented a significant constraint elsewhere. We therefore treat O2 as a PO in the analysis presented in the remainder of this section. However, as explained above, we plan to update our analysis in light of the acquisition of O2's broadband business by Sky for

[161] Vodafone is the owner of Cable & Wireless Ltd, to which these figures correspond.
[162] Virgin Media's coverage figure corresponds to the coverage of its cable network in terms of premises passed.
[163] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

the statement, but as explained in paragraphs 4.99 to 4.100 we do not expect this to have a material impact on our market definition.[164]

4.59 We do not include Vodafone as a PO. Vodafone recently acquired Cable & Wireless (C&W), which was classified as a PO in our 2010 review on the basis of its market coverage. C&W is a sizeable company in the telecommunications market and has high coverage, but despite this it has low national service shares. It has not gained significant retail broadband share in any exchanges over the review period – its maximum exchange-level service share was less than 10% [✂] in December 2012.[165] Moreover, we understand that Vodafone at this stage does not have any plans significantly to expand its retail broadband operations.[166] We consider how the inclusion of C&W would affect our analysis in paragraph 4.101 and find that it would have very little impact.

4.60 We also exclude Updata and Zen. These are both much smaller companies than the other players in the WBA market. Their coverage is lower than the other players, at less than 20% of premises, and their national market shares are very low. Moreover, in individual exchanges their share is a maximum of 4%.[167] We understand that neither operator has plans to significantly expand their retail operations at this stage.

4.61 Thus the list of POs we propose in the present consultation is: BT, Sky, TalkTalk and Virgin Media. We exclude Vodafone, Zen and Updata. We consider O2 posed a significant constraint on BT prior to its acquisition by Sky, and so count it as a PO in our historical analysis. Neither the exclusion of O2 from our list of POs, nor the inclusion of Vodafone, would significantly affect our market definition (see paragraphs 4.99 to 4.101).

Ensuring a forward looking view of PO presence and shares

4.62 As with the 2010 WBA Statement, we use the numbers of POs present in a BT local exchange area as an indicator of the competitive conditions in that area. POs represent a significant competitive constraint on BT (by definition), and as such, the number of POs present is a key indicator of the strength of competition within an exchange area.

4.63 With regards to the only non-LLU-based PO, Virgin Media, we consider Virgin Media present as a PO in an exchange area if its cable network passes 65% of premises within an exchange area. BT stated in its response to the Call for Inputs that Ofcom should also take a forward look on Virgin Media's network "rather than a snapshot in time". We agree with BT in that we need to take a forward looking view in relation to Virgin Media's network. We asked Virgin Media to provide information of their expansion plans. It informed us that it had plans to extend to its network to an additional [✂] [tens of thousands] of premises a year mainly in new developments and in-fills but could not provide data at a level of granularity that would allow us to map onto BT exchange areas.[168] However, as discussed in paragraph 4.40 we do not think this will have a material impact on our analysis.

[164] Ofcom calculations based on BT, response to Q.1 of s.135 notice of 28 November 2012.
[165] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[166] Based on a conference call with Vodafone on 05 June 2013.
[167] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[168] Virgin Media response to Q1.3(c) of s.135 notice, 28 November 2012.

*The number of present POs at an exchange takes into account "committed" roll-out plans*

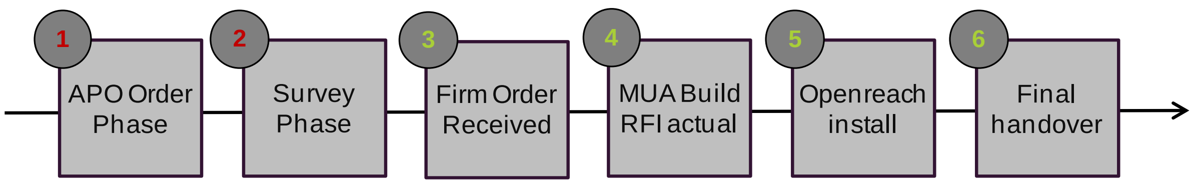
4.64 We need to take a forward-looking view on the number of LLU-based POs in each exchange area. In the 2010 WBA Statement, we counted LLU-based POs as present in an exchange on the basis of forecast roll-out of LLU only where they had firm plans to deploy in specific exchanges. This approach led us to exclude from our analysis further proposed roll-out plans on the basis that they were not yet firm enough.

4.65 TalkTalk stated in its response to our 2012 WBA Call for Inputs that it is appropriate for market definition purposes to categorise exchanges with planned roll-out in the same way as exchanges with an existing non-BT operator. Specifically, TalkTalk said that its view was that provided an exchange has been identified internally to be rolled-out within the next 12 months, it should be counted and suggested a letter of confirmation signed by a director of the company ought to be sufficient to demonstrate such internal identification.

4.66 We agree that information about future entry into exchanges must be taken into account, since it determines the future competitive conditions in an exchange, and our review is forward looking. However, operators may not enter all the exchanges that they plan to. This is particularly likely where plans are only at very early stages.

4.67 For this review, we have made use of Openreach's provisioning process to define and clarify what constitutes "committed" LLU roll-out in our analysis. To enable an exchange, an operator must follow the six steps prescribed by Openreach in their "Advance Point of Presence Ordering process" ('APO process'). In the first two steps, communications providers ask Openreach about the feasibility and the availability of LLU at an exchange. At the third step, Openreach receives an order from the prospective LLU operator to unbundle the exchange. The remaining three steps then relate to the actual deployment of LLU and the final handover.

**Figure 4.1: APO process**




4.68 We consider the first two stages of the APO process as uncommitted roll-out since there is no commitment to roll-out (or penalty associated with not rolling out). It is less likely that operators that have reached stage 3 (the 'Firm order received' stage) will reverse their decision to roll-out. We therefore propose to use stage 3 of the APO process as the determining factor in deciding whether proposed LLU roll-out is "committed", and therefore whether a PO is treated as being forecast to be present in an exchange, for the purposes of this review. To the extent that the rate of LLU roll-out has slowed down, the impact of the exact definition of forecast roll-out is more limited. In Annex 10, we consider the impact on our geographic market definition of including all LLU roll-out (both "committed" and "uncommitted") as well as the impact of excluding all roll-out that is not yet active.

*Roll-out plans affect our forward looking view on service shares*

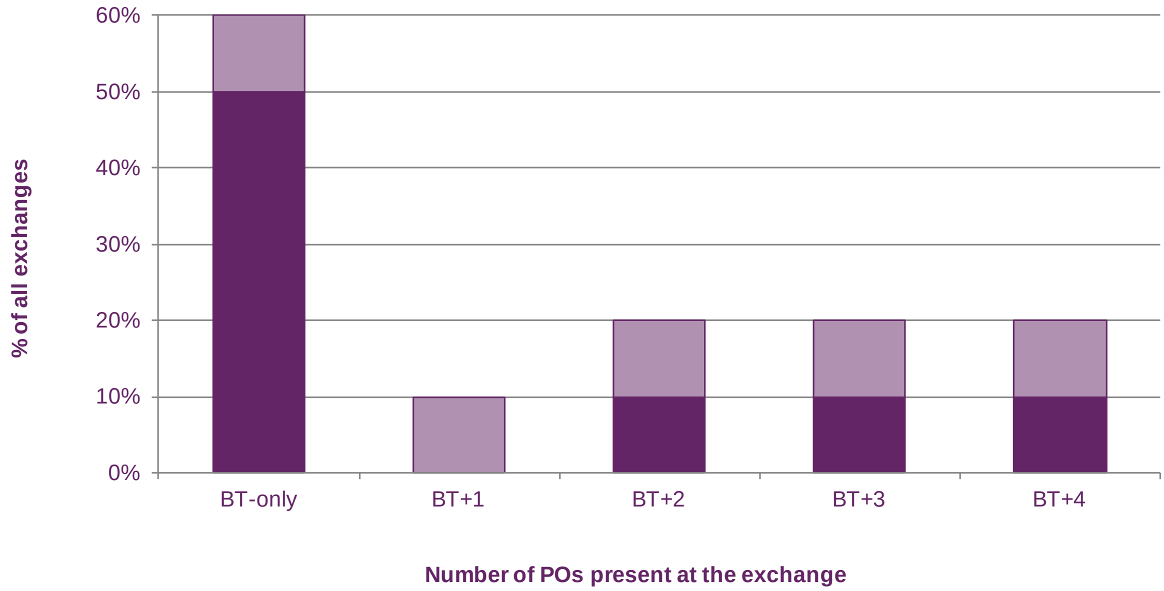
4.69 As well as taking into account future roll-out, we also have taken a forward looking view of service shares. In particular, as was the case in the 2010 WBA Statement, we have assumed that LLU operators that enter an exchange in the review period are able to migrate their existing customers (currently served using WBA services) onto their own network, relatively quickly. For this reason, our analysis of service shares at an exchange include active lines that are based on self-supply of wholesale broadband (using SMPF or MPF for example) and active lines that could be migrated from BT's WBA service. As discussed below, we also conduct further analysis on the effect that LLU roll-out has on forward-looking market share.

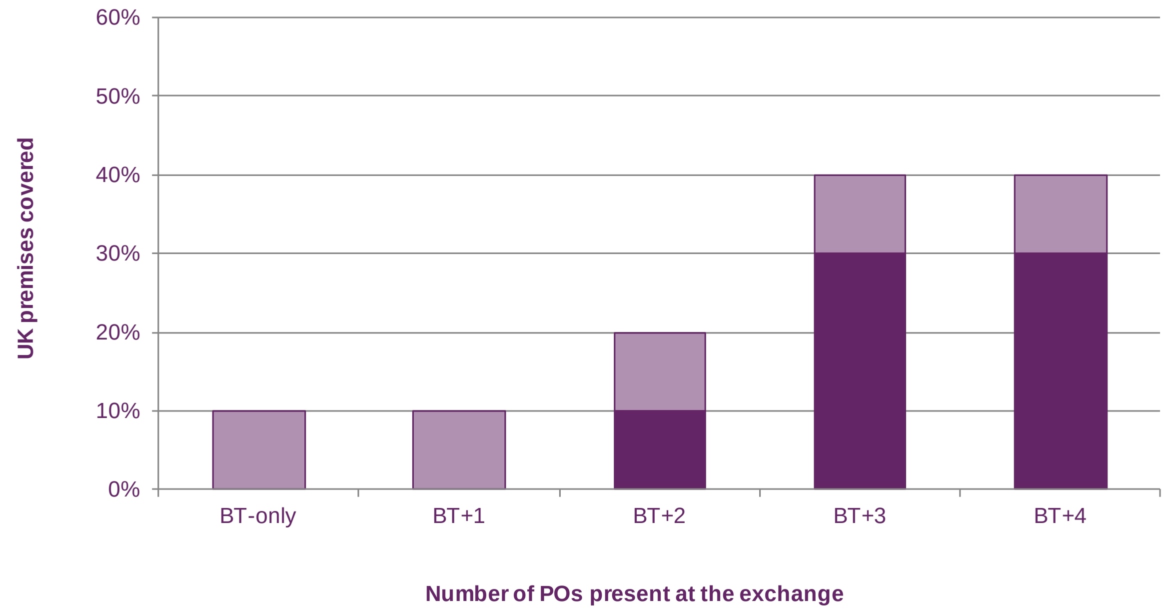
## Grouping of exchanges

4.70 Figure 4.2 shows the proportion of exchanges and premises supplied by different numbers of POs.[169] It shows that in [✂] % [50-60%] of exchanges, BT is the only PO present, but these exchanges are very small and, in total, these BT-only exchanges serve [✂] % [less than 10%] of premises. The majority of premises are served by exchanges containing three or more POs (including BT).[170]

[169] There are 5,560 BT exchanges in our data set. See Annex 10 for explanation of how this varies from the exchanges included in the 2010 WBA Statement.
[170] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

**Figure 4.2: Distribution of exchanges by number of POs present (December 2012)**



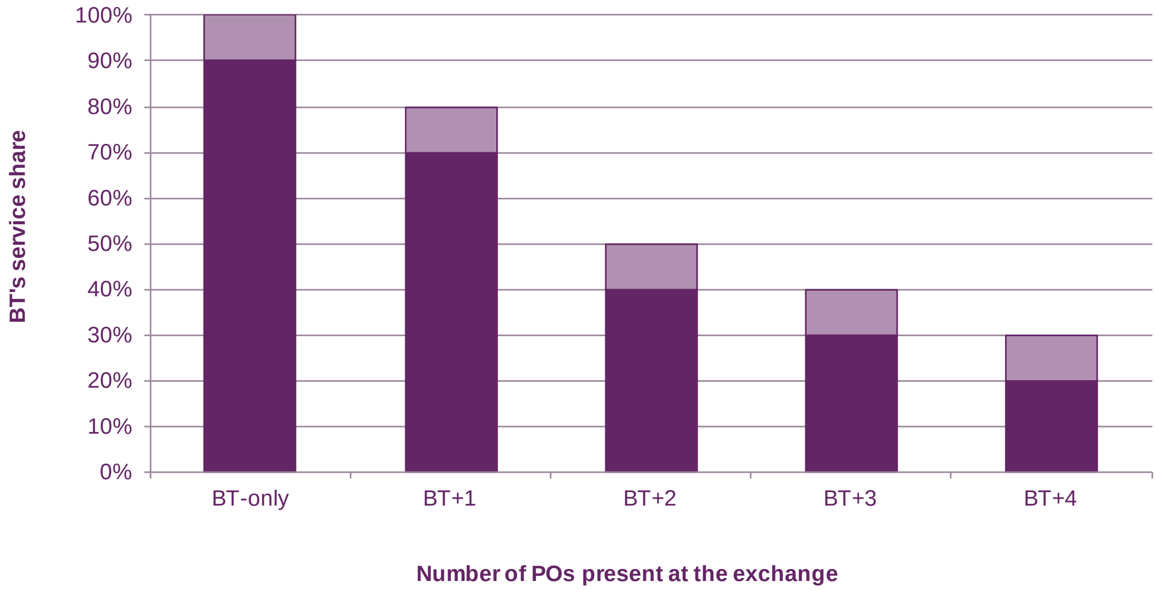




*Source: Ofcom calculation from data provided by Openreach and Virgin Media.*[171]

4.71 As in the 2010 WBA Statement we consider that the number of POs present in an exchange is an important indicator of competitive conditions. BT's service share varies significantly depending on the number of rival POs present, as shown in Figure 4.3.[172]

[171] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[172] Ibid.

**Figure 4.3: BT's service share by number of POs present at the exchange (December 2012)**




*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [173]

4.72 In the remainder of this section we consider whether, based on the homogeneity of competitive conditions, we can group exchanges with different numbers of POs together and whether we need to distinguish between exchanges with the same number of POs, as we did in our 2010 review for BT+2 exchanges.

## Exchanges with four or more POs

4.73 In the 2010 WBA Statement we concluded that competitive conditions in exchanges in which there were four or more POs (including BT) were sufficiently homogenous to be grouped together for the purpose of our SMP assessment. This reflected the view that the incremental impact on competitive conditions of an increase in the number of POs beyond four is likely to be modest.

4.74 We have found no reason to change this view and no respondent to the 2012 WBA Call for Inputs suggested we deviate. As Figure 4.3 shows, where BT faces three or more competitors, its service share is below 40% ([✂] where there are three POs in addition to BT and less than 30% [✂] where there are four POs in addition to BT).[174] As we do not account for fibre circuits in our shares (see paragraph 4.48), these figures may understate BT's actual share of active circuits. According to our estimates, in exchanges with four or more POs, BT's service share would increase by [✂]% if fibre circuits were included, and would therefore still remain below 40%.[175]

[173] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[174] Ofcom calculations based on BT, response to Q.1 of the s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[175] This was calculated by assuming fibre volumes were allocated across exchanges with three, four and five POs in proportion to the number of cabinets that were fibre-enabled in these areas.

## Exchanges with three POs (BT+2)

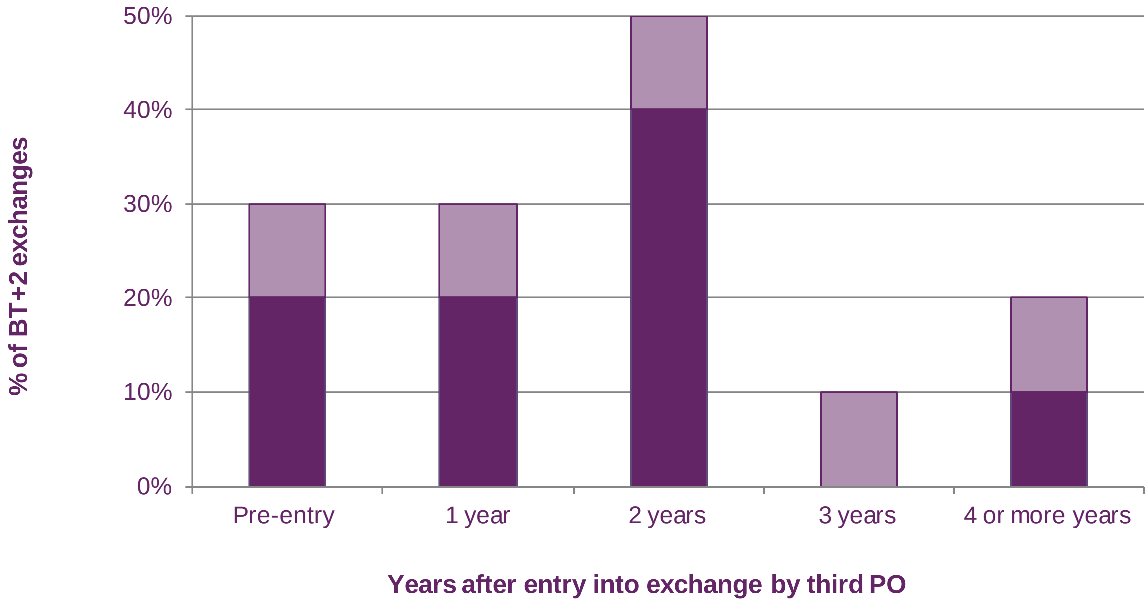
4.75 In 2010 we divided exchanges with three POs into two groups; those where BT's service share was less than 50%, which were included in Market 3 (along with exchanges in which there were four or more POs), and those where BT's service share was 50% or more, which we included in Market 2 (along with exchanges with two POs).

4.76 We have conducted further analysis on exchanges with three POs and believe that the evidence suggests that the conditions of competition in BT+2 exchanges are such that in this market review it would be appropriate to include them in the same geographic market as exchanges where there are four or more POs. We therefore propose to remove the distinction between BT+2 exchanges on the basis of BT's service share that was applied in the 2010 WBA Statement. As explained below, this change reflects our understanding of the dynamics of competition in BT+2 exchanges, based on our analysis of how BT's share evolves over time in these exchanges.

4.77 As shown in Figure 4.3 BT's service share in exchanges with three POs is between 40-50% [✂], a level that may be consistent with SMP. However, our analysis suggests this service share overstates BT's competitive strength in these exchanges because in a large number of BT+2 exchanges, entry has only been very recent and, in the case of future committed entry, has yet to have taken place. This is shown in Figure 4.4, which gives the distribution of BT+2 exchanges according to the length of time that there have been three POs present ("pre-entry" refers to exchanges with currently two POs, but where a third PO has committed to enter, but is not yet active). In 80-90% [✂] of exchanges, the third PO has been present for two years or less, including 20-30% [✂] of exchanges where entry has not yet occurred.[176]

[176] Ibid.

**Figure 4.4: BT+2 exchanges, broken down by number of years after entry of third PO (December 2012)**



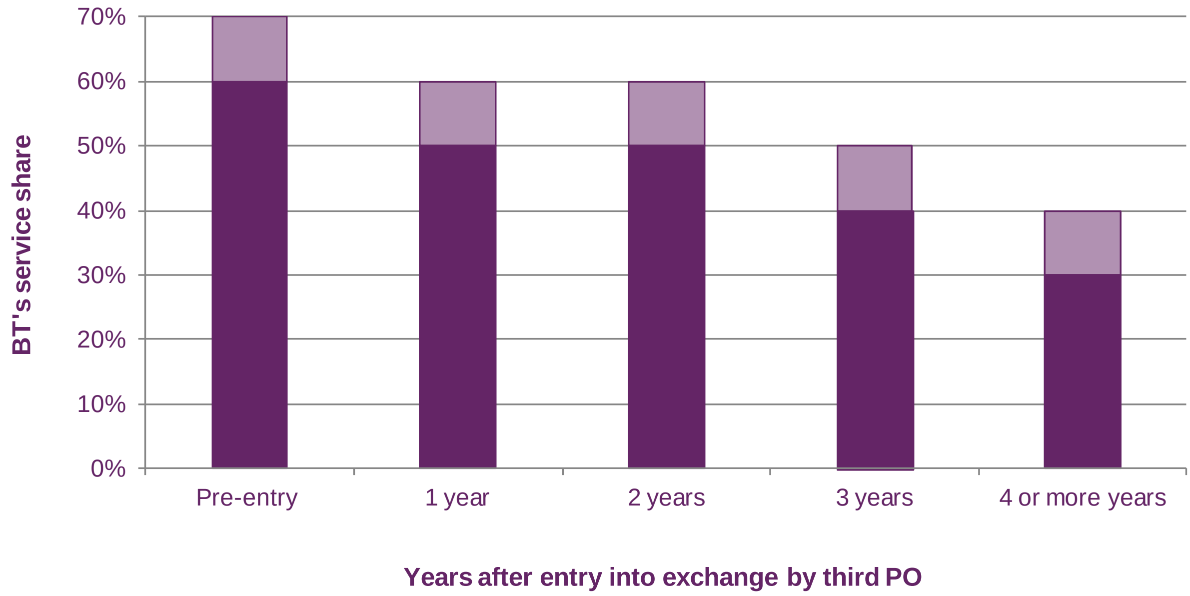

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [177]

4.78 As explained in paragraph 4.69, service shares include the migration of WBA customers onto an entrant's own network. However, this is likely to understate the longer term impact of the entrant on BT's share. This is because "on-net" offers based on a PO's own LLU network are typically more attractive and more heavily marketed than "off-net" offers where they supply customers using WBA. Moreover, the full impact of LLU entry on BT's share may take time to be realised, largely because many BT consumers are locked in to contracts of 12 or 18 months. As a result, we would expect to see a progressive reduction in BT's service share over a period of time following entry, as more BT customers reach the end of their existing contract, and thereby have the option to switch to the entrant's network, as opposed to renewing with BT.

4.79 This is confirmed in Figure 4.5 which shows how service shares in BT+2 exchanges vary according to the length of time that there have been three POs present (including BT). It shows that where the entry of the third PO has yet to occur, BT's service share is [✂] [between 60-70%]. This represents the effect of the share captured by the single established PO entrant competitor, and the potential for migration of WBA customers by the new (third PO) entrant. Once both PO entrants have been active for four or more years, BT's service share falls to [✂] [between 30 and 40%].[178]

[177] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[178] Ibid.

**Figure 4.5: BT's service share in BT+2 exchanges, by number of years three POs have been active, December 2012**



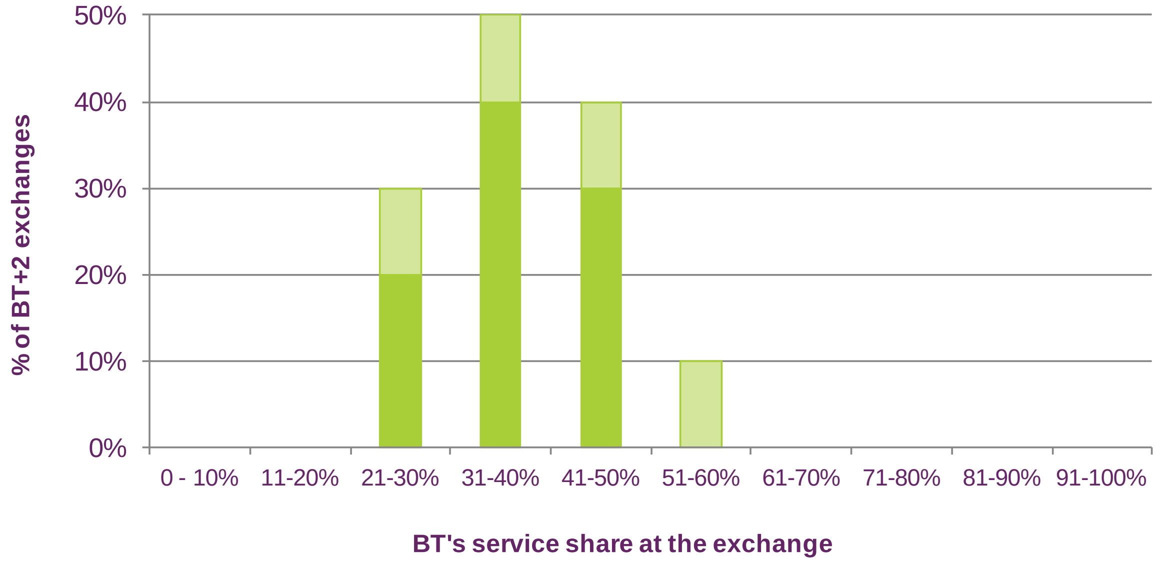

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.*[179]

4.80 We also considered the distribution of service shares in exchanges where competition is mature i.e. where both PO competitors to BT have been present for four or more years. This is shown in Figure 4.6. It shows that in the majority of cases ([✂]), BT's service share is below 50% ([✂]).[180]

[179] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012,and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

[180] We also considered the distribution of shares with shorter durations of 3PO competition (i.e. three, two or one year(s) of 3PO competition). In all cases the distributions of BT's service shares are smooth, and clustered around the average for that set of exchanges, with no significant outliers.

**Figure 4.6: Exchanges with three POs where the third PO has been present for four or more years, broken down by BT's service share, December 2012**




*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [181]

4.81 This evidence suggests that all BT+2 exchanges should be regarded as being sufficiently similar to the exchanges with four or more POs. The POs active in those exchanges are large, vertically integrated companies, with highly developed sales networks, and are likely to represent a significant competitive force. This is evidenced by their success in winning share from BT in the years following their entry. Indeed, BT's shares in these exchanges eventually fall to levels below those usually associated with SMP in exchanges. Even where entry into an exchange is recent and competitors have not yet won share from BT, we believe exchanges should be classified with the more competitive exchanges. The three present POs exert a significant competitive constraint from the time of entry, with competitive offers available from the outset, prompting a steady loss in BT's service share over time.

4.82 BT also agreed (in its response to the 2012 WBA Call for Inputs) with the position that we should no longer distinguish between exchanges where two of TalkTalk, Virgin Media or Sky are present. It pointed to additional evidence that service share falls more rapidly once three POs are present compared to 2PO or BT-only exchanges. It also pointed to LLU expansion patterns, the convergence of concentration measures (HHIs), and the evolution of service shares. BT also made reference to a paper by Orazem and Xiao analyzing competition in the US broadband market, which concludes that "the fourth entrant has little effect on competitive conduct in the local broadband market".[182]

4.83 BT also stated in its response to the 2012 WBA Call for Inputs that the result of bundling was that competitors could use other sources of market power to price the bundle competitively. BT argued that this effect was reinforced by its on-net common pricing constraint, arguing that its market position and its pricing were even more

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[181] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

[182] Xiao,M and Orazem,P (2011) *'Does the fourth entrant make any difference. Entry and competition in the early U.S. broadband market'*, http://www.sciencedirect.com/science/article/pii/S0167718710001384.

strongly constrained than before from the level of activity and competition in the exchanges which were already accepted as being 'fully competitive'.

4.84 EE also believed more emphasis should be put on the common on-net pricing constraint. It noted that [✂]. We have reviewed BT's and EE's response and submissions, but do not consider their evidence and arguments in detail here as it would not further inform our geographic analysis.[183]

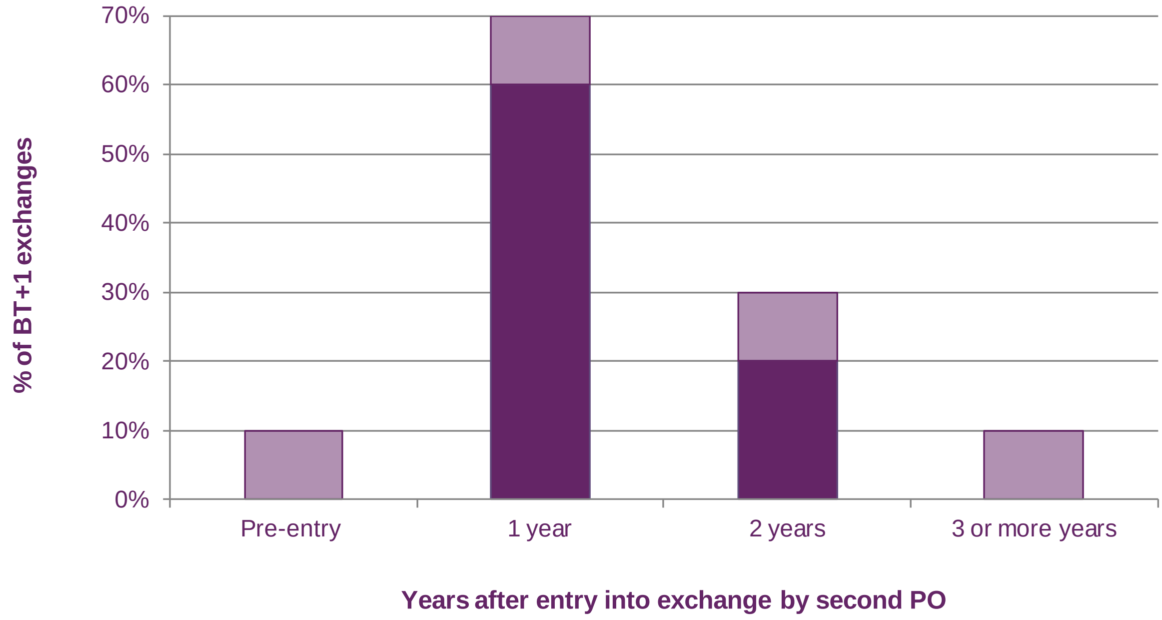
## Exchanges with one or two POs (BT-only, BT+1PO)

4.85 For this Market Review, we propose that it is no longer necessary to distinguish between BT-only and BT+1PO exchanges. This differs from our conclusion in the 2010 WBA Statement, where these two types of exchanges were placed in two separate geographic markets (Market 1 and Market 2). This reflected differences in our assessment of the likely constraint on BT's pricing arising from both current and future investment by other operators.

4.86 Although there is a difference in average service shares between BT-only and BT+1 exchanges (see Figure 4.3), in both cases they are significantly in excess of 50%. In BT-only exchanges, service share is [✂] [between 90-100%] due to the lack of any PO competition (its share is not always 100% since other CPs that have not been defined as a PO may be present). In BT+1 exchanges, BT's average service share is [✂] [between 70-80%]. However, as with BT+2 exchanges, this is likely to fall over time as entry into BT+1 exchanges is relatively recent in many cases. This can be seen in Figure 4.7. which shows that in all but a minority of cases entry has occurred within the last two years, and in [✂] [less than 10%] of exchanges entry is has not yet taken place (i.e. it is forecast, not actual, entry).

[183] [✂]

**Figure 4.7: Exchanges with BT+1 PO, broken down by number of years after entry of the second PO Dec 2012**

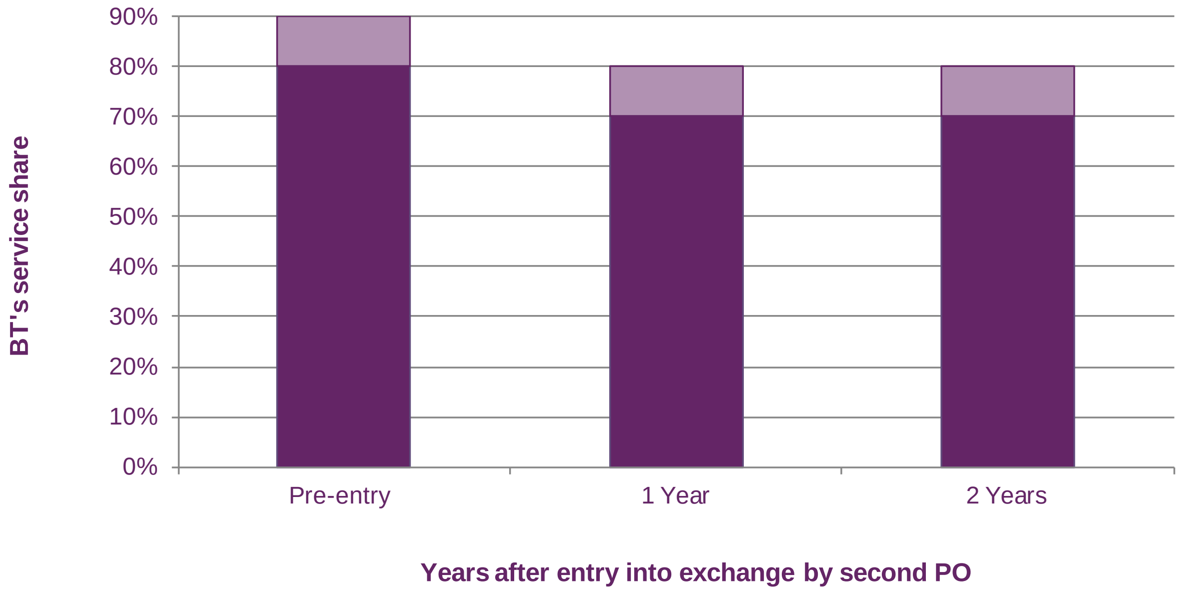



*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [184]

4.87 Figure 4.8 shows how service shares in BT+1 exchanges vary according to the length of time that there have been two POs present (BT+1 exchanges). Where entry is forecast but has not yet occurred, BT's migration-adjusted service share is [✂] [between 80-90%]. BT's service share then falls as the new entrant becomes more established and after two years, it is [✂] [less than 80%] on average. Given the low number of exchanges where 2PO competition has been established for more than two years, it is not possible to draw precise conclusions about the likely eventual reduction in BT's share. However, after two years, BT's service share is still considerably higher than in exchanges with 3POs active for two years where, as shown in Figure 4.5, shares are [✂] [less than 60%] on average. This suggests competitive conditions in 2PO exchanges are appreciably different to 3PO exchanges.

[184] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

**Figure 4.8: BT's service share in BT+1 exchanges broken down by number of years the second POs has been active, December 2012**




*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [185]

4.88 BT's very high service share, which prevails even two years after entry of the second PO, suggests that it is not necessary to distinguish between BT-only and BT+1 exchanges solely on the basis of current levels of competition. Whilst we recognise that there is some competition in BT+1 exchanges and no material competition in BT-only areas, in both cases BT's service shares are consistent with an SMP finding.

4.89 In 2010, we differentiated between BT-only and BT+1 exchanges on the basis of future investment. In particular, we considered that Market 2 areas (which included BT+1 exchanges) not only already had some wholesale competition but also that there was the potential for this to develop further. The potential for the development of competition in BT+1 areas appears much more limited now. Based on uncommitted roll-out data, in 2012, only [✄] of the [✄] BT+1 exchanges [✄] [covering less than 10% of premises in BT+1 exchanges] have any uncommitted roll-out plans. Indeed, to the extent that there is entry into less competitive areas, the roll-out data suggests this is likely to be in BT-only areas, rather than BT+1 areas. [✄] of the [✄] BT-only exchanges could see further roll-out during the market review period. These cover [✄] [20-30%] of premises in BT-only exchange areas. However, only one entrant is forecast to enter, so the entry is unlikely to make these areas competitive.[186]

4.90 Statements from individual operators about their roll-out plans also confirm that entry is likely to be limited in BT+1 areas, and also more widely. TalkTalk is planning some further roll-out over and above what we have accounted for in our analysis which would take its coverage from 93% of all UK premises to 95%. This corresponds to unbundling approximately 200 further exchanges, predominantly in BT-only areas. Sky says it is finalising the last phase of its roll-out plans. This entails further (uncommitted) entry into around 400 exchanges of which less than 20 are in BT-only

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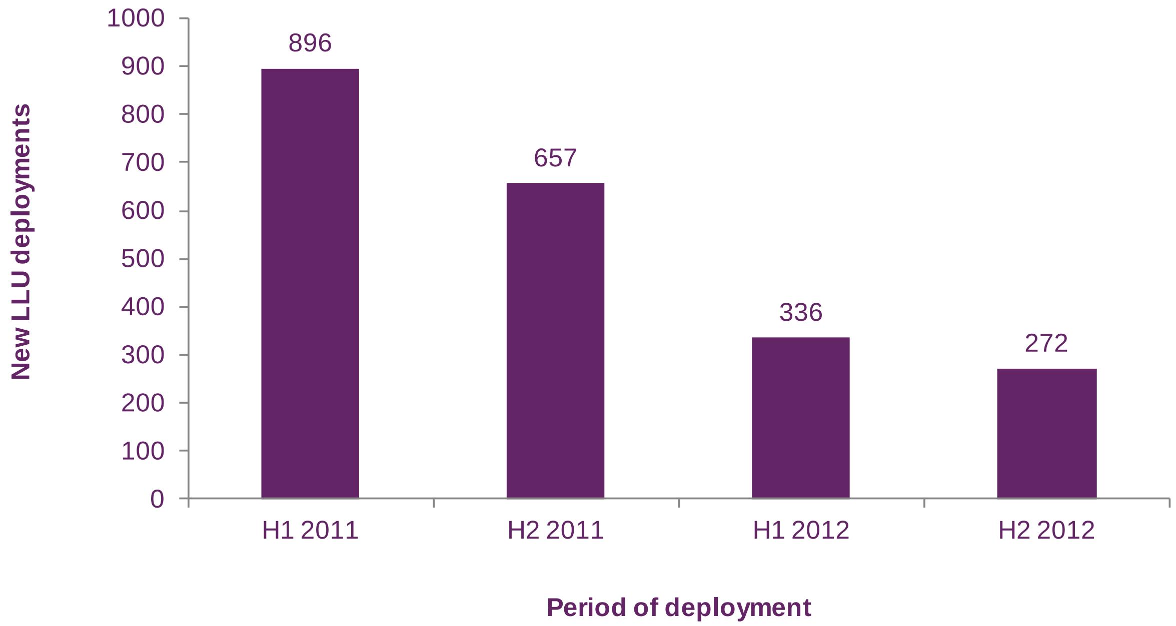
[185] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[186] Ibid.

or BT+1 areas. Virgin Media plans on a yearly basis to connect an additional [✂] [tens of thousands of] additional homes with cable in the next few years, mainly in new developments.[187] However, Virgin Media's plans predominantly affect areas where BT already has more than one competitor. Vodafone does not have any plans for further roll-out at present.[188]

4.91 More generally, since 2010, the rate of LLU roll-out has slowed considerably as remaining exchanges are increasingly smaller, less profitable and therefore less attractive to roll-out into. This trend is shown in Figure 4.9, which shows the number of LLU roll-outs which occurred between December 2010 and December 2012. It shows that during the first half of 2011, 896 exchanges experienced further LLU entry, but this dropped to 272 during the second half of 2012.[189]

**Figure 4.9: Number of new PO LLU deployments, December 2010 to December 2012[190]**




*Source: Ofcom calculation from data provided by Openreach and Virgin Media.*[191]

4.92 We therefore believe it is no longer necessary to distinguish between BT-only and BT+1 exchanges on the basis of further LLU entry. As noted at paragraphs 2.29 to 2.31, it is possible that some fibre-based entry may occur because of investment funded by BDUK. However, the extent, location and timing of this is uncertain, so it is not possible to say whether any such entry would be more or less likely in BT-only or BT+1 exchanges.

4.93 BT argued that on-net pricing means that even where it faces only one other PO competitor, it is more strongly constrained than it was in 2010 because of the level of activity and competition in the exchanges which are already accepted as being 'fully competitive'. However, BT does not suggest that this was sufficient to class the exchanges with the more competitive exchanges. In a later submission, BT suggested that BT+1 exchanges serving more than 3,000 premises should be

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[187] Virgin Media response to s.135 notice, 21 December 2012.
[188] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012.
[189] Ibid.
[190] Ibid.
[191] Ibid.

classed as competitive. Those BT+1 exchanges serving less than 3,000 premises BT stated should be defined as uncompetitive.[192]

4.94 On-net pricing is not enough to make BT+1 exchanges competitive. Retail consumers differentiate between POs, for example on the basis of brand or levels of customer service, so there may be significant numbers of consumers who do not wish to switch to the competing operator, even if that operator's price is competitive. POs other than BT typically have market shares well below 50%, even where they are the only competitor to BT. Conversely, even in BT+1 areas, BT's share remains very high (well above 50% even after three years). This may mean it is profitable for BT to raise retail prices in BT+1 areas. This is true regardless of the size of the market.

4.95 More generally, we do not think it appropriate to define markets solely on the basis of exchange size. This is because a number of other factors, such as geographical location and how well it maps to the operator's backhaul network affect the current and forecast number of operators. We also have detailed information on future roll-outs. BT's suggested refinement by market size would in any case make very little difference to our analysis as there are only a small number of [✂] BT+1PO exchanges which currently serve more than 3,000 premises. These represent UK coverage of only [✂] [less than 1%] of premises [✂] [or less than 5% of Market A premises].[193]

4.96 EE also suggested that we should consider BT+1PO exchanges as competitive. [✂].[194]

4.97 [✂]. Information from other CPs suggests that it is not easy to play wholesalers off against each other [✂].[195] They have stated that they had previously considered switching away from BT but the complexity of systems migration outweighed the benefits achieved through switching given their small number of off-net customers.

4.98 Moreover, in the absence of SMP remedies in the WBA market, the primary constraint on WBA prices in BT+1 areas is likely to be indirect constraints that arise from self supply by LLU operators. While we recognise that there may be some voluntary supply of WBA services in the absence of SMP remedies, even with WBA remedies in place, this accounts only for small volumes in comparison to the number of customers served "on-net" by LLU and cable operators. The biggest such ISPs [✂] represent a small proportion [✂] of their respective suppliers' total number of active connection.[196] As explained in paragraph 4.94, even with on-net pricing constraints, one additional PO competitor is not sufficient to make the wholesale market competitive on the basis on indirect constraints.

### Implications of recent Sky/O2 merger and of exclusion of Vodafone

4.99 We have conducted our geographic market analysis using December 2012 data, at which point in time O2 was an independent operator, classed as a PO. Sky since

[192] BT's (in conjunction with SPC Network) additional s.135 submission, 'The choice of multiple criteria in geographic market definition', of 26 April 2013

[193] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

[194] [✂]

[195] [✂]

[196] Ofcom calculations based on BT, response to Q.1 of s.135 notice of 28 November 2012.

announced its intention to acquire the broadband customers of O2.[197] The proposed acquisition was cleared by the OFT in May 2013.[198]

4.100 The effect of the merger would be to reduce the number of POs in exchanges where both Sky and O2 are present by one. However, O2 and Sky are only present together in [✂].[199] As discussed above, we propose that exchanges with three POs present have sufficiently similar competitive conditions to those with four or more POs that we have grouped them into a single market. The merger of O2's broadband customers with Sky therefore does not affect the allocation of exchanges between our proposed Market A and Market B.

4.101 In addition, we have considered the impact of including Vodafone in our list of POs. Vodafone is predominantly present in exchanges where there are three or more POs already present. It is only present in [✂] exchanges where there are only two (currently defined) POs, and therefore re-classifying Vodafone as a PO would have the effect of moving only [✂] exchanges between markets. This represents only [✂] [less than 1%] of Market A premises under our baseline case.[200]

### Summary of geographic market definition

4.102 We have used local exchange areas for current generation services as the geographic unit of our analysis. We have considered how many POs operate within each geographic area, considering Virgin Media as present if it supplies more than 65% of the premises in that exchange. We have accounted for future entry based on POs' committed plans (defined as reaching the third stage of the Openreach APO process).

4.103 The number of POs is a key determinant of competition. As in 2010, where there are four or more POs present, competitive conditions are unlikely to vary significantly. In 2010, where there were three POs present, we distinguished between exchanges where BT had more than 50% of the wholesale market and those where it had less than 50%. We now have a better understanding of the dynamics of the market, which suggests this is no longer necessary. This is because, over time, shares fall to levels which are broadly consistent across exchanges with three POs and are sufficiently similar to those with four or more POs to group all exchanges with three or more exchanges together.

4.104 Given the slowdown in LLU roll-out, we do not think it necessary to distinguish between BT+1 and BT-only exchanges on the basis of future entry. Whilst we recognise that there is a difference in competitive conditions where one PO has entered compared to BT-only areas, we do not consider that this alone creates sufficiently different competitive conditions to define separate markets for BT-only exchanges compared to BT+1 exchanges. This is because in both areas market shares are consistent with SMP.

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[197] British Sky Broadcasting Group plc, 1st March 2013, *Sky to acquire Telefónica UK's broadband and fixed-line telephony business,* http://corporate.sky.com/media/press_releases/2013/sky_to_acquire_telefonicas_uk_broadband_and_fixed_line_telephony_business
[198] OFT, Decision ME/5913/13, 16 May 2013, http://www.oft.gov.uk/shared_oft/mergers_ea02/2013/BskyB.pdf.
[199] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[200] Ibid.

4.105 Based on our assessment, we therefore propose to group exchanges into three markets:

- The Hull Area;
- Market A: exchange areas where there are no more than two POs present or forecast to be present;[201] and
- Market B: exchange areas where there are three or more POs present or forecast to be present.

4.106 The 5,560 exchanges used for the purposes of our analysis exclude some 29 exchanges due to them not having any active broadband connections at present. We propose to include these 29 exchanges in Market A. This is consistent with our treatment of such exchanges in the 2010 WBA Statement which allocated them to Market 1.

## Updating the geographic market definition

4.107 We propose to update our geographic market definition shortly before we issue the final statement in this review to take into account developments in LLU entry plans. We will re-run our analysis using the most up-to-date data on the number of POs which have entered, or committed to enter, an exchange area, and re-allocate exchanges to Market A and Market B accordingly.

4.108 Some 2012 WBA Call for Inputs respondents [✂] and BT also suggested that exchanges should be reclassified throughout the review period as and when unanticipated entry (not included in original market definition) occurs. TalkTalk stated (in its 2012 WBA Call for Inputs response) that “Ofcom must be able to adapt its market definition quickly”.

4.109 This would be impractical for two reasons.

- First, if market boundaries were revised within the market review period, a CP that has planned on purchasing an SMP product could be required to purchase the service on purely commercial terms. This does not give the certainty that ex ante regulation should normally provide, potentially undermining CPs’ investment decisions.
- Second, if exchanges were moved from one market to another during the course of the market review period, this would in effect amount to a revision of the market definition on which the SMP analysis and remedies were founded. The legal underpinning for those remedies would be affected, and it might be necessary to carry out a new market review to define new markets, re-conduct the SMP analysis and re-impose the SMP conditions (or impose different conditions). The reclassification of exchanges from one market to another could not be an automatic process in between market reviews. Future developments in the market which are foreseeable at the time of market definition are taken into account in the forward-looking analysis, in particular, by factoring in “committed” forecast LLU roll-out (as explained in paragraphs 4.64 to 4.68).

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[201] Based on “committed” roll-out as defined at paragraphs 4.64 to 4.68.

4.110 This approach is consistent with the ERG Geographic Common Position, which notes that:

> "Once the (forward-looking) geographic segmentation has been made, it appears to be in the sense of legal certainty and practicability that it does not change until the next review, even if future developments are somewhat different than expected. If future developments are very different to those expected, there is likely to be a necessity for a new analysis anyway."

4.111 For the reasons mentioned above, the automatic update of Market A and Market B to take into account of further entry that is not reflected in committed entry plans at the time of our assessment is not workable. To the extent that the rate of LLU roll-out has slowed down, the impact of any automatic updates would anyway be more limited.

4.112 TalkTalk also stated that Ofcom's approach to planned roll-out in the 2010 WBA Statement was flawed and that it should have taken into account the proposed new roll-out in its charge control (see paragraphs 3.169 to 3.190 of the 2010 WBA Statement). The question whether there had been a material change in the market and, consequently, whether the market definition should have been revised and the exercise of allocating exchanges to markets re-run between the 2010 WBA Statement in December 2010 and the 2011 WBA Charge Control Statement in July 2011 is the subject of an ongoing appeal by TalkTalk against the 2011 WBA Charge Control Statement in the Court of Appeal.[202]

## Summary of proposed market definition

4.113 In the previous section, we defined the relevant wholesale product market as:

> "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."

4.114 This section has discussed our approach to geographic market definition for that product market. We have based our analysis on BT and KCOM local exchange areas, and grouped these areas according to the similarity of competitive conditions. We propose that the relevant geographic markets are:

- Market A: exchange areas where there are no more than two POs present or forecast to be present (9.6% of UK premises);
- Market B: exchange areas where there are three or more POs present or forecast to be present (89.7% of UK premises); and
- The Hull Area (0.7% of UK premises).

4.115 These figures are based on December 2012 data. We propose to update those figures shortly before we issue the statement.

[202] Appeal No C3/2012/0785 *TalkTalk Telecom Group plc v Office of Communications & ors*, judgment pending.

## Consultation questions

***Question 4.1****: Do you agree with Ofcom's view of the relevant criteria for assessing the geographic market boundaries? If not, please explain why.*

***Question 4.2****: Do you agree with Ofcom's proposed set of Principal Operators (POs)? If not, please explain why.*

***Question 4.3****: Do you agree with Ofcom's geographic market definitions? If not, please explain why.*

***Question 4.4:*** *Do you agree with Ofcom's proposals to update the geographic market boundaries? If not, please explain why.*

## Section 5

# Market power assessment

## Summary

5.1 Market definition is not an end in itself. The purpose of defining the relevant economic markets is in order to allow assessment of whether an operator has, during the review period, significant market power ('SMP') in any of those markets. SMP is the ability to act, to an appreciable extent, independently of competitors, customers and consumers.

5.2 In this section we set out our proposals on SMP in each of the relevant markets as identified in the previous sections and our analysis that leads us to these proposals. We propose that:

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

## Approach to market power assessment

5.3 The purpose of the market analysis conducted under Article 16 of the Framework Directive and section 79 of the 2003 Act is to determine whether a market is effectively competitive. Where a national regulatory authority determines that a market is not effectively competitive, it shall identify any undertakings which individually or jointly have SMP in that market and shall impose or maintain on such undertakings appropriate specific regulatory obligations.

5.4 Sections 45, 46 and 78 et seq. of the 2003 Act grant Ofcom the power under certain circumstances to set conditions binding CPs, namely persons who provide an electronic communications network and/or an electronic communications service. Specifically, Section 46(7) states that SMP services conditions may be imposed on a particular person who is either a CP or a person who makes associated facilities available, and who has been determined to have SMP in a "services market" (i.e. a specific market for electronic communications networks, electronic communications services or associated facilities).

5.5 Accordingly, having identified the relevant product and geographic markets, Ofcom is required to analyse each market in order to assess whether any person or persons have SMP as defined in Section 78 of the 2003 Act (and Article 14 of the Framework Directive).

5.6 Section 78 of the 2003 Act provides that SMP is defined as being equivalent to the competition law concept of dominance in accordance with Article14(2) of the Framework Directive which provides:

> "An undertaking shall be deemed to have significant market power if, either individually or jointly with others, it enjoys a position equivalent to dominance, that is to say a position of economic strength affording

it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers."

5.7 Further, Article 14(3) of the Framework Directive states that:

> "Where an undertaking has significant market power on a specific market, it may also be deemed to have significant market power on a closely related market, where the links between the two markets are such as to allow the market power held in one market to be leveraged into the other market, thereby strengthening the market power of the undertaking".

5.8 Therefore, in the relevant market, one or more undertakings may be designated as having SMP where that undertaking, or undertakings, enjoy a position of dominance. Also, an undertaking may be designated as having SMP where it could leverage its market power from a closely related market into the relevant market, thereby strengthening its market power in the relevant market.

## The criteria for assessing SMP

5.9 In assessing whether an undertaking has SMP, we have taken due account of the SMP Guidelines[203] as required by Section 79 of the 2003 Act. Where relevant, we have also had regard to the application of the equivalent Oftel Guidelines[204] and the ERG's revised working paper on SMP[205] ("ERG Revised SMP Paper").

5.10 The SMP Guidelines require NRAs to assess whether the competition in a market is effective (i.e. no operator is found individually or jointly dominant). This market analysis is undertaken through a forward looking evaluation of the market, determining whether the market is prospectively competitive, taking account of foreseeable developments.

5.11 Market share is an indicator of market power although the SMP Guidelines state that high market share alone is not sufficient to establish the possession of significant market power. The SMP Guidelines further state that:

> "In the Commission's decision-making practice, single dominance concerns normally arise in the case of undertakings with market shares of over 40 %, although the Commission may in some cases have concerns about dominance even with lower market shares[...], as dominance may occur without the existence of a large market share. According to established case-law, very large market shares — in excess of 50 % — are in themselves, save in exceptional circumstances, evidence of the existence of a dominant position[...] An undertaking with a large market share may be presumed to have SMP, that is, to be in a dominant position, if its market share has

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[203] Commission guidelines on market analysis and the assessment of significant market power (2002/C165/03) – 11 July 2002, http://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:C:2002:165:0006:0031:EN:PDF.
[204] Oftel's market review guidelines: criteria for the assessment of significant market power, http://www.ofcom.org.uk/static/archive/oftel/publications/about_oftel/2002/smpg0802.htm.
[205] ERG, *Revised working paper on the SMP concept for the new regulatory framework*, September 2005, http://berec.europa.eu/doc/publications/public_hearing_concept_smp/erg_03_09rev3_smp_common_concept.pdf, September 2005.

remained stable over time[...]. The fact that an undertaking with a significant position on the market is gradually losing market share may well indicate that the market is becoming more competitive, but it does not preclude a finding of significant market power."[206]

5.12 In view of this, market shares must be part of a thorough market analysis in order to assess whether an undertaking has SMP. The SMP Guidelines list a number of non-exhaustive criteria to measure the power of an undertaking to behave to an appreciable extent independently of its competitors, customers and consumers.

5.13 Where a market is found to be effectively competitive then no SMP conditions can be imposed. Furthermore, section 84(4) of the 2003 Act requires that any SMP condition in that market, applying to a person by reference to a market power determination made on the basis of an earlier analysis, must be revoked.

### Assessment of SMP against relevant criteria

5.14 When assessing SMP, it is appropriate to take account of the existing regulation of a service upstream of the market that is being considered. In the context of this review, this includes the regulated supply of local loop unbundling (LLU), sub-loop unbundling (SLU), physical infrastructure access (PIA) and virtual unbundled local access (VULA) in the upstream wholesale local access market, which can be used to assist entry into the relevant WBA markets defined in the previous section. The existence of this upstream regulation needs to be taken into account in order to capture fully the competitive constraints in the WBA markets.

5.15 The assessment of SMP in the WBA markets we have identified is based on the most appropriate available information. We have had regard to evidence that relates to the wholesale markets directly, as well as to evidence that relates to the relevant retail markets as appropriate.

5.16 Following the approach we adopted in the previous 2008 and 2010 WBA Statements, we have identified those criteria for the assessment of SMP contained in the Commission's Guidelines and the ERG Revised SMP Paper that are most relevant for the WBA market, those that are less relevant and those that are not relevant. As in the 2010 WBA Statement, we continue to consider that the following criteria are the most important in this review:

- market growth and market shares;
- future potential market shares;
- barriers to entry and expansion, including the impact on number of operators present;
- economies of scale and scope;
- excessive pricing (and profitability); and
- countervailing buyer power.

[206] SMP Guidelines, paragraph 75 (footnotes omitted).

5.17 We have also taken into account the following criteria in our assessment of SMP in WBA markets:

- overall size of the undertaking;
- technological advantages or superiority;
- vertical integration; and
- price trends and pricing behaviour.

## Responses to the 2012 WBA Call for Inputs

5.18 In the 2012 WBA Call for Inputs we asked stakeholders to provide views on whether there had been any changes since the 2010 WBA Statement that would impact our assessment of SMP in the WBA markets identified in this review.

5.19 BT commented on Ofcom's approach to SMP assessment in the 2010 WBA Statement, stating its belief that taking evidence on each of the relevant criteria and concluding for each one separately led Ofcom to underestimate the extent of effective competition in Market 2. It also stated that this approach meant that more emphasis was placed on current market shares, rather than considering the evolution of market shares over the market review period. BT went on to say that Ofcom should have considered the cumulative impact that all of the relevant factors together played on constraining BT's behaviour, and had Ofcom taken this approach, it could have reasonably concluded that the presence of two operators at the exchange (from Sky, Virgin Media or TalkTalk) in addition to BT would be sufficient for competition to be effective within a three year market review period.

5.20 BT stated that it believed Ofcom was too cautious in its 2010 SMP assessment, placing too much emphasis on prevailing market shares, and not enough on the evolution of market shares over the review period. BT also said it believed that Ofcom's approach to broadband market assessment underestimates the constraining effect the increase in retail bundling has on wholesale markets.

5.21 EE also submitted that it believed BT had SMP in BT-only areas but not in BT+1 areas. It based this on arguments and evidence relating to pricing, countervailing buyer power, barriers to entry and market shares.

5.22 Virgin Media stated that it was not aware of any changes to the markets which related to the market power assessment. Vodafone stated there were no changes. Sky stated that market developments since the last review did not warrant any major changes to the SMP findings (noting that it did not foresee any developments during the next three year period to change this view).

5.23 In its response, The Bit Commons said that it did not believe there had been any changes impacting Ofcom's SMP assessment since the 2010 WBA Statement, it also noted that "[this lack of change is] driving the need to introduce a new dynamic".

5.24 TalkTalk stated it anticipated that (as in the 2010 WBA Review) BT possesses SMP in Markets 1 and 2 but not in Market 3 (referring to the markets as defined in the 2010 WBA Statement). It noted that the magnitude of SMP in Market 1 will be significant and that BT's SMP in Market 2 would be weaker given the competitive constraints offered by other operators.[207]

5.25 KCOM believed that since the 2010 WBA Statement there have been significant developments in the Hull Area which are relevant to Ofcom's SMP assessment for this review. It reported that MS3 Communications is currently deploying a network in Hull with an initial investment of £4.5m, and believed that MS3 has plans to build a 116km network in the Hull Area over the next few months. In KCOM's view, MS3's entry will provide direct infrastructure-based competition and is likely to do so in a relatively short timeframe, given the limited geographic area to be covered.

## Proposal on SMP in Market A

5.26 As explained in the preceding section, Market A comprises those BT local exchanges where there are no more than two POs present or forecast to be present, based on committed roll-out plans, over the period of the market review.[208] Based on the information provided by Openreach and each of the POs in Dec 2012, there are 3,194 exchanges in Market A.[209] These exchanges serve 9.6% of premises in the UK excluding the Hull Area.

5.27 Table 5.1 below provides information on the composition of Market A in terms of the number of exchanges and number of premises from the previous market categorisation.[210] This shows that [✂] [90-100%] of exchanges in Market A were categorised as in Market 1 in the 2010 WBA Statement, while only [✂] [0-10%] of them were in Market 2. In terms of the number of premises, [✂] [90-100%] of premises in Market A were in Market 1 in 2010 and [✂] [0-10%] were in Market 2.

### Table 5.1: Composition of Market A

| | Market 1 | Market 2 | Market 3 |
|---|---|---|---|
| Number of exchanges | 90-100% [✂] | 0-10% [✂] | 0-10% [✂] |
| Number of premises | 90-100% [✂] | 0-10% [✂] | 0-10% [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [211]

5.28 The most significant competitive constraints in this market come from the LLU operators that we classified as POs. There is currently no significant deployment of cable or fibre in these areas. The BDUK scheme could mean that fibre is deployed to a significant proportion of Market A by the end of the review period. However, there is still a lot of uncertainty over the extent, exact location and timing of this deployment.

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[207] TalkTalk also said that BT is dominant in the VULA market. It should be noted that Ofcom is aware of this claim; however this issue is relevant to the WLA review, not the WBA review. We therefore do not address it here.
[208] All subsequent analysis includes "committed" planned roll-outs.
[209] Note, this excludes those 29 exchanges which do not presently have active broadband connections. Those exchanges are included in Market A (see paragraph 4.106), therefore the total number of exchanges included in Market A is 3,223.
[210] There is one new exchange in Market A that is not in the previous market review. However, it is very small and does not affect the proportions calculated in Table 5.1.
[211] Ofcom calculations based on BT, response to Q.1 of s.135 notice of 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

It is also not clear to what extent POs other than BT might use this to provide services in Market A.

## Market shares

### Calculation of market shares

5.29 As explained in paragraph 4.47, our calculation of market shares corresponds to the share of active broadband connections supplied by the relevant PO. Active connections include broadband connections provided via MPF and SMPF on BT's copper network (either by BT or by an LLU operator) or by Virgin Media using its cable network. Market shares do not include wholesale products based on fibre (GEA products), as we did not have a complete set of data from all operators, and the differences in the fibre network topology mean that it would have been difficult to combine that data on fibre with our database relating to the CGA network. However, there is no significant fibre deployment in exchanges in Market A as yet.

5.30 As explained in paragraphs 4.62 to 4.68, market shares take account of current and forecast LLU roll-out. We assume that an LLU operator can migrate off-net customers onto its own network shortly after entering an exchange area. We have therefore attributed any WBA sales by BT to a PO that is either present or forecast to be present.

### Current shares

5.31 Table 5.2 shows shares of Market A based on December 2012 data. BT holds a 91.8% share in Market A whilst TalkTalk (the largest rival to BT in Market A) has a share of [✂]. The combined share of all other operators is Market A is [✂].

**Table 5.2: Market A shares, Dec 2012**

| Operator | Market A Shares |
|---|---|
| BT | 91.8% |
| TalkTalk | [✂] 5-10% |
| Other operators | [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [212]

5.32 Table 5.3 shows Market A coverage of Market A premises for each PO. This table shows that the only PO other than BT to have any significant coverage in Market A is TalkTalk, which covers around 30-40% [✂] of Market A premises. The coverage of all other POs is very limited in this market. This suggests that there remain significant further sunk costs that would need to be incurred by operators other than BT to provide comprehensive coverage throughout the market.

[212] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

**Table 5.3: Market A coverage (of premises) by PO, Dec 2012**

| Operator | Market A Coverage |
|---|---|
| BT | 100% |
| TalkTalk | 30-40% [✂] |
| Virgin Media | 0-10% [✂] |
| Sky (including O2) | 0-10% [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin* Media. [213] [214]

5.33 Under the Modified Greenfield Approach, we need to take into account the fact that current market shares are influenced by SMP regulation at the level of the market being considered and downstream (but not upstream). In the case of the WBA markets, the regulated availability of BT wholesale products will influence the decisions of competing operators on whether to invest in LLU.

5.34 Absent the regulated availability of wholesale products such as IPstream, LLU roll-out may become more attractive, and any further LLU roll-out would result in BT's market share falling below that shown in the table above. However, we do not believe this would have an appreciable influence on our conclusions with respect to Market A. This is because the economies of scale and density associated with LLU roll-out make it unviable for several LLU operators to serve the small exchange areas found in Market A. Therefore further entry is unlikely to impose a competitive constraint. This is reflected in the low LLU take-up in these exchange areas.

## Future shares

5.35 As required by the SMP Guidelines, our competitive assessment of the markets we have identified should be based on a prospective, forward-looking approach.[215]

5.36 Our methodology for calculating shares takes account of operators already present and operators forecast to be present (based on committed entry).[216] Market shares for operators forecast to be present are based on their existing WBA customers, which can be migrated onto their own network. Although we have not included any other factors into our calculations for shares, we have considered qualitatively how alternative factors might influence shares in Market A across the market review period (April 2014 to March 2017).

5.37 We identified two additional factors which could impact shares during the review period. First, further market share increase (beyond WBA migration) by operators that are either already present or forecast to be present (based on committed entry). This was discussed in our analysis of the geographic market [see paragraphs 4.75-

[213] O2 was also a PO in December 2012, but has since been purchased by Sky. Since this analysis of BT's SMP is forward looking, we have combined data from O2 and Sky.

[214] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

[215] SMP Guidelines, paragraphs 20, 27, 35 and 80.

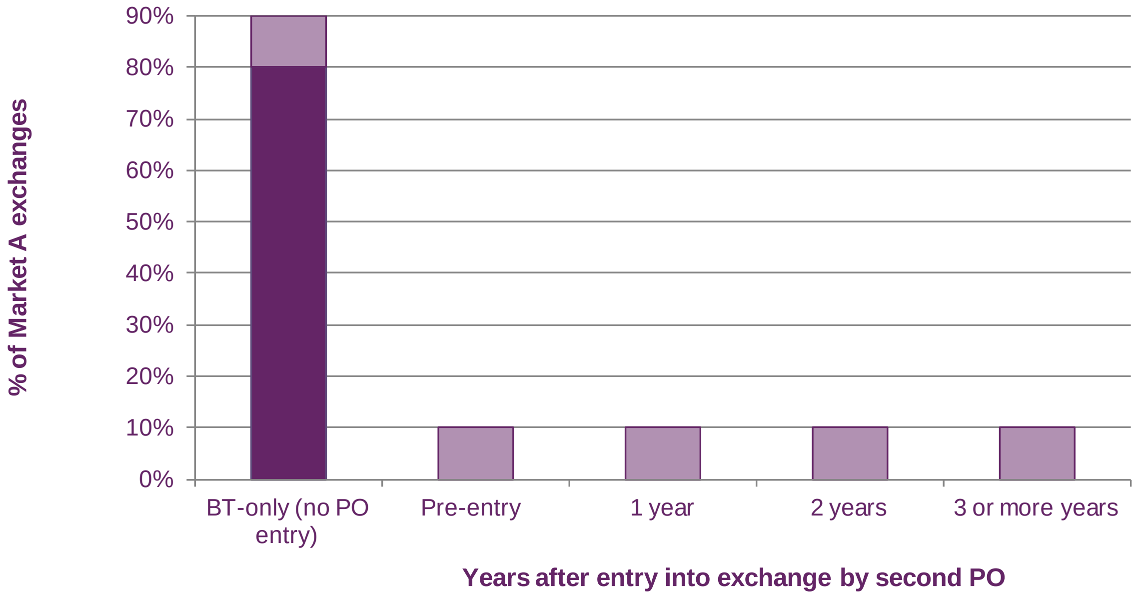
[216] See paragraphs 4.64-4.68 for the definition of "committed" entry.

4.88]. Second, further market share increase by operator entry over and above that included in our analysis (i.e. potential entry we would categorise as 'uncommitted'). These are both discussed below in turn.

5.38 Figure 5.1 categorises Market A exchanges according to the duration for which PO competition to BT has existed. The figure shows that the vast majority [✂] [80-90%] of Market A exchanges have seen no entry and no entry is forecast. Unsurprisingly in these exchanges where BT is the only PO present, BT has a very significant share of all active circuits [✂] [90-100%].[217]

5.39 In the [✂] [10-20%] Market A exchanges that have seen entry from a PO in addition to BT, most have only witnessed entry in the last one or two years (with some POs having committed to enter an exchange but not yet entered). In exchanges where entry is only recent it is likely that the process of customer churn onto the entrant PO's network is ongoing, and therefore BT's share in Market A exchanges can be expected to fall to some extent during the market review period. However, we anticipate BT's share in these exchanges to remain appreciably above 50% (see paragraphs 4.85-4.88 for full analysis). Moreover, these exchanges form only a small proportion of Market A. Therefore, we anticipate BT's Market A share will remain high throughout the review period.

**Figure 5.1: Composition of Market A, December 2012**




*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [218]

5.40 In addition to BT's share erosion in Market A as a result of existing or forecast entry, BT's Market A share would be eroded further if there were to be future entry into Market A exchanges in the period of the review over and above that included in our forecasts of committed entry. Entry is discussed in the next sub-section.

[217] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[218] Ibid

## Barriers to entry

Sunk costs

5.41 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 significant costs by entering a market, later entrants may be deterred from following suit, in which case the incumbent may be able to exploit market power. In particular, the incumbent may set high prices without fear of encouraging entry. This is because, whatever the pre-entry price set by the incumbent, what matters for the profitability of a new entrant is the price that would arise from competition 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.

5.42 There are two broad options available to a company wishing to compete in the WBA market. The first is to build a comprehensive local access network, which could address end-users directly. This would incur both the costs of providing individual access and the costs of the support infrastructure. We are not aware of any firm that is considering such investment in Market A.

5.43 The second option for those wishing to compete in the provision of WBA products is to take advantage of the upstream access remedies. For CGA, this would be LLU (MPF and SMPF) and for NGA it would be VULA, SLU and/or PIA. These remedies, imposed in the WLA market, mean that operators seeking to serve the WBA market do not have to incur the costs of building a local access network since these operators are able to purchase regulated access to BT's network on a wholesale basis and use this to provide wholesale broadband services for their own use, or for supply to third parties. However, this can still require significant sunk costs, including co-location at BT's exchanges and securing access to backhaul services.

5.44 In the section below we first consider the impact these sunk costs have on LLU economies of scale, scope and density, and then consider VULA economies of scale, scope and density.

LLU entry

5.45 The significant sunk costs incurred through unbundling of exchanges means that LLU entry is unlikely to be profitable in exchanges where the number of customers served by the exchange is small.

5.46 Exchanges in Market A serve an average of 865 premises, and the majority (80%) have fewer than 1000 active exchange lines.[219] The costs associated with unbundling such as equipment costs (i.e. MSANs) have been falling, lowering the sunk costs required for LLU and therefore the barriers to LLU entry. Nevertheless, we believe there is likely to be only limited further LLU roll-out into Market A exchanges, due to the small size of exchanges in this market.

5.47 BT provided an econometric submission by Professor Gordon Hughes which analysed broadband penetration in the UK. In this report, Professor Hughes concludes that "there is little prospect of significant competition in the very small

[219] Ofcom calculations based on BT, response to Q.1 of s.135 notice of 28 November 2012.

exchanges that serve less than 1,000 premises".[220] We agree that there is little prospect of significant competition in these exchanges. However, we do not believe that market size on its own is a sufficient criteria for predicting the extent of entry. A number of other factors are relevant to an operator's decision to unbundle an exchange including geographical location and how well it maps to the operator's backhaul network.

5.48 We base our analysis of LLU entry on the roll-out plan information we received from operators (see paragraphs 4.61 to 4.68). As explained above, the allocation of exchanges to Market A already takes account of POs' committed roll-out plans and hence the relevant issue here is whether any further entry into Market A is likely. We recognise that it is possible that some POs may decide to go beyond their currently committed roll-out plans during the review period, depending on market conditions.

5.49 In order to assess the likely extent of further roll-outs we have considered operators' uncommitted roll-out plans as a guide to the extent of potential further roll-outs in Market A. Uncommitted roll-out plans suggest that whilst there may be some further roll-out into Market A exchanges, they are largely confined to (current) BT-only areas. Of the [✂] BT-only exchanges currently defined using committed roll-out data, [✂] could see further roll-out during the market review period, above and beyond that which we have accounted for. These exchanges cover [✂] [less than 30%] of premises in BT-only exchange areas. Only [✂] of the [✂] BT+1 exchanges ([✂], covering [✂] [less than 10%] of premises in BT+1 exchange areas) have uncommitted roll-out plans.[221] As a result, we do not expect to see any significant number of Market A exchanges to have three or more POs present by the end of this review period. This is supported by information CPs provided to us in information requests about their general roll-out strategy.

5.50 We have also considered the general trend in the number of exchanges unbundled over time. In our geographic market analysis (paragraphs 4.91 to 4.92), we showed that there has been a progressive decline in the amount of LLU roll-out. This trend is suggestive of operators reaching their final stages of roll-out, and indicative of there being limited further LLU roll-out.

5.51 EE considered that the unbundling of an exchange by the first PO after BT is the most reliable evidentiary indicator available to Ofcom that barriers to entry are likely to be sufficiently low to allow for subsequent entry by other POs over the course of the market review period (therefore removing the likelihood of any enduring SMP). It based this analysis on the evidence on the barriers in Market 2 exchanges, which it claimed are likely to be far more homogeneous with Market 3. The vast majority of these exchanges have indeed now been allocated to Market B, on the basis of either actual or forecast entry. EE also stated that in Market 1, which forms the vast majority of Market A, barriers to entry are clearly likely to be significantly higher. This is in line with our assessment.

[220] Hughes, Prof Gordon. (2013) 'Econometric modelling of broadband penetration in the UK. An updated analysis for 2008-2012'. A report prepared for BT plc.
[221] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

## Fibre entry

5.52 BT has been progressing its deployment of NGA and expects to complete its commercial deployment to around two-thirds of UK premises by April 2014.[222] In the 2012 FAMR Consultation we propose to continue to require BT to provide VULA on this deployment. However, we expect the majority of this deployment to be confined to Market B areas.

5.53 In addition to BT's commercial deployment, state aid funding via BDUK is seeking to extend NGA coverage to around 90% of UK premises. We estimate that, over the course of this review, BDUK funding could impact 65-75% of premises served by exchanges that were assigned to Market 1 in the 2010 WBA Statement.[223] Since a large number of 'old' Market 1 exchanges fall into Market A, this suggests a significant proportion of Market A exchanges could be impacted by BDUK. The state aid conditions mean that third party operators will be granted access to this network, probably using a similar service to VULA.

5.54 As explained in Section 4, the topology for the fibre network is different from the CGA network. BT intends to use fewer local exchanges to provide access to the upstream fibre-based product than it uses to provide access to the copper product (LLU), but the fibre product will cover a wider geographic area than the copper product. It is therefore possible that a premise is connected by fibre to an exchange which is different from, and further away than, the exchange it is connected to via copper. Indeed, we expect that most of the premises in Market A served by fibre will be connected to a Market B exchange. Where a PO has deployed in a Market B exchange to access NGA services, it will be able to access all customers connected via VULA to that Market B exchange, even if they are located in Market A. This means that barriers to entry for fibre are likely to be lower than when using copper.

5.55 At present, however, there are a number of uncertainties surrounding the use of fibre to enter Market A. These include the timing of any roll-out and the specific location of roll-out. Because of these uncertainties, it is too early to rely on the deployment of NGA in considering SMP in Market A.

### Pricing and profitability

5.56 Given that Market A is comprised predominantly of exchanges previously in Market 1, we propose to use the data for Market 1 to approximate pricing and profitability in Market A. But as a result of the presence of the remedies we have imposed, including a charge control, we can only infer a limited amount about what pricing and profitability would be in the absence of regulation.

5.57 BT's pricing of products in Market 1 in 2011/12 was in line with the price control imposed by Ofcom. The fact that BT has priced [✂] suggests that, in the absence of a charge control, BT could have achieved higher revenue.[224] This supports the finding in the 2010 WBA Statement that BT had market power in Market 1 over that review period.[225]

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[222] BT press release, http://www.btplc.com/News/Articles/Showarticle.cfm?ArticleID=B95CCF6C-F125-4ABF-A78D-82476B31A07C and also further clarification (April 2014) provided by BT in its response to confidentiality checks.
[223] See paragraph A12.34.
[224] [✂]
[225] Compliance data provided by BT.

5.58 BT's return on mean capital employed (MCE) in Market 1 was reported as 18.3% in its regulated financial statements (RFS) for 2011/12. This is above the weighted average cost of capital (WACC) we allow BT in this regulated market. However, as discussed in Annex 11 there are adjustments that BT have suggested we need to make to the 2011/12 RFS returns. We accept that some adjustments to the 2011/12 RFS are necessary. These adjustments reduce the return on MCE, and bring them closer to the WACC.

5.59 EE also stated that there had been key changes in BT's pricing and profitability, and supplied some additional data in that respect. In particular, it stated that [✂].[226] This is consistent with BT possessing market power in Market A although [✂], at least in part, also be a reflection of higher costs in this market.

5.60 BT argued that the increase in retail bundling constrains the wholesale market, in particular by allowing competitors to use other sources of market power to price the bundle competitively. We do not believe this to be a significant constraint in Market A. We presume this argument relates mainly to Sky which only has a very limited presence in Market A.

5.61 Taken together, this evidence is consistent with the proposed finding that BT has SMP in Market A but we do not think that we can draw any reliable inferences from BT's profitability in Market A.

### Countervailing buyer power

5.62 As in the previous review we have had regard in particular to the OFT guidance on the assessment of market power ('OFT Guidance'), 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.[227] 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'.

5.63 BT's market power is unlikely to be constrained by countervailing buyer power in Market A. Other than BT, TalkTalk is the only provider with any significant presence in Market A. TalkTalk could provide an alternative source of supply to purchasers of WBA. However, for around [✂] of Market A premises, BT is the only PO provider. As a result a CP wishing to serve Market A via WBA would still have no choice but to purchase from BT in the majority of Market A exchanges.

5.64 One purchaser of WBA [✂] and information from other CPs suggests that it is not easy to play wholesalers off against each other. We also explained (in the same paragraph) that we believe the primary constraint on WBA prices is likely to be indirect constraints that arise from self supply by LLU operators, rather than the direct constraints in the merchant market. Countervailing buyer power is not relevant to indirect constraints as end consumers have very little buyer power.

[226] EE confidential note following meeting with Ofcom, received 5 March 2013.
[227] OFT, Assessment of market power, p.24
http://www.oft.gov.uk/shared_oft/business_leaflets/ca98_guidelines/oft415.pdf.

### Joint dominance

5.65 Joint dominance is not relevant for the analysis of SMP in Market A, primarily due to the fact no operator other than BT has significant coverage or market share in Market A.

### Proposed conclusion on SMP in Market A

5.66 Given BT's substantial market share, the high barriers to entry via LLU and the uncertainty surrounding entry via fibre, and the lack of countervailing buyer power, we consider that BT has (and will continue to have for the duration of the market review period) a position of economic strength in Market A affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers. We therefore propose to find that BT has SMP in the market for the provision of WBA services in Market A.

## Proposal on SMP in Market B

5.67 Market B comprises those BT exchange areas where there are more than two POs present.[228] As we did for Market A, we have taken into account "committed" PO roll-outs. Taking these into account, 2,366 exchanges fall into Market B. These exchanges serve 90.0% of UK premises (excluding the Hull Area).

5.68 Table 5.4 shows that between [✂] [60-70%] of Market B exchanges were included in Market 3 in the 2010 WBA Statement, while between [✂] [20-30%] and [✂] [0-10%] of exchanges were in Markets 2 and 1 respectively. The overlap between our proposed Market B and Market 3 as defined in the 2010 WBA Statement is even more evident in terms of the number of premises covered by exchanges with [✂] [80-90%] of premises in Market B having been included in Market 3 in 2010, as Market 3 exchanges tend to be larger exchanges covering more premises.

**Table 5.4: Composition of Market B in December 2012**

| | Market 1 | Market 2 | Market 3 |
|---|---|---|---|
| Number of exchanges | 0-10% [✂] | 20-30% [✂] | 60-70% [✂] |
| Number of premises | 0-10% [✂] | 0-10% [✂] | 80-90% [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [229]

5.69 The majority of the competitive constraints in Market B come from the LLU and cable operators we classified as POs. BT has deployed fibre in a significant number of Market B exchange areas, and other operators have access to this via VULA.

[228] See paragraphs 4.112 and 4.113 above for the precise market definition employed for the purposes of this review.
[229] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

## Market shares

Current shares

5.70 Table 5.5 (below) shows shares in Market B based on December 2012 volume data.[230] In Market B, BT's market share is between [✂] [30-40%]. This is below the level at which single firm dominance concerns would normally arise.[231] Moreover, there are three other competitors with significant share in Market B. These are large, vertically integrated operators, with access to the same technology standards and suppliers as BT.

**Table 5.5: Market B shares by PO, December 2012**

| Operator | Market B Shares |
|---|---|
| BT | 30-40% [✂] |
| Sky (including O2) | 15-25% [✂] |
| Virgin Media | 15-25% [✂] |
| TalkTalk | 15-25% [✂] |
| Other operators | 0-10% [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [232] [233]

5.71 As explained in paragraph 4.48, these share figures do not account for volumes of fibre-based active circuits. We believe, however, that even if volumes of fibre-based circuits were included in our calculations of shares, they would have an immaterial impact on our SMP assessment. We estimate that including fibre volumes would result in BT's Market B share being around [✂][234] This is still appreciably below 40%, and would not change our conclusion regarding SMP in this market.

5.72 Although no PO other than BT has 100% coverage of Market B premises, two other POs have over 99% [✂] coverage.

[230] As in the Market A section, this section takes a forward-looking view, by taking into account "committed" planned LLU roll-outs, as well as our assumption regarding migration.
[231] See paragraph 75 of the SMP Guidelines.
[232] O2 was also a PO in December 2012, but has since been purchased by Sky. Since this analysis of BT's SMP is forward looking, we have combined data from O2 and Sky.
[233] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[234] The calculation is based on BT's announcement in its 2013 annual report of having around 1.5 million fibre customers as of Q1 2013, and the fact that [✂] of fibre enabled cabinets are in Market B. Since this figure does not include fibre lines of other operators, it is likely to overstate BT's share.

**Table 5.6: Market B coverage (of premises) by PO, December 2012**

| Operator | Market B Coverage |
|---|---|
| BT | 100% |
| TalkTalk | 99.9% |
| Sky (including O2) | 99.7% |
| Virgin Media | 45-50% [✂] |

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.* [235]

5.73 We anticipate that, over the review period, several large operators will continue to be present, each with a significant market share and coverage. BT's share may fall further in exchanges where entry has been recent, as a result of ongoing consumer churn (see paragraphs 4.75 to 4.84 for analysis of BT's share erosion).

5.74 As with Market A, it is possible that BT's share would be higher absent the availability of currently regulated WBA. However, this effect is unlikely to be material since in Market B WBA is only available on regulated terms in [✂] [% of exchanges, covering less than 15% of premises].[236]

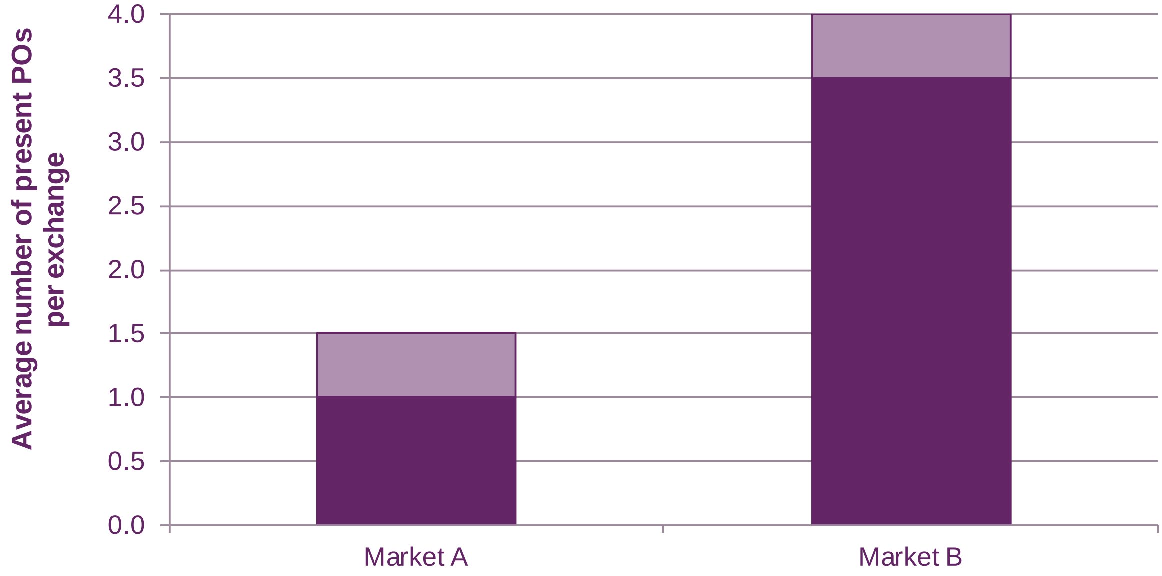
## Barriers to entry

5.75 Barriers to entry in Market B are much lower compared to Market A. As discussed above in relation to Market A, the sunk costs associated with unbundling an exchange create significant economies of scale where exchanges are small. This is however less of a barrier to entry in Market B because of the much larger size of exchanges.

5.76 The number of entrants in Market B exchanges suggests that sunk costs and economies of scale are not a barrier to entry in this market. As shown in Figure 5.7, there are on average [✂] [3.5-4] POs per exchange in Market B compared to [✂] [1-1.5] in Market A. These figures include O2 as a separate PO. If O2 is excluded the figure falls to [✂] [3-3.5]. We anticipate (based on operators' planned roll-outs) that there may be a small amount of additional roll-out in Market B exchanges during the review period.

[235] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.
[236] Ibid

**Figure 5.7: Average number of POs per exchange, December 2012**



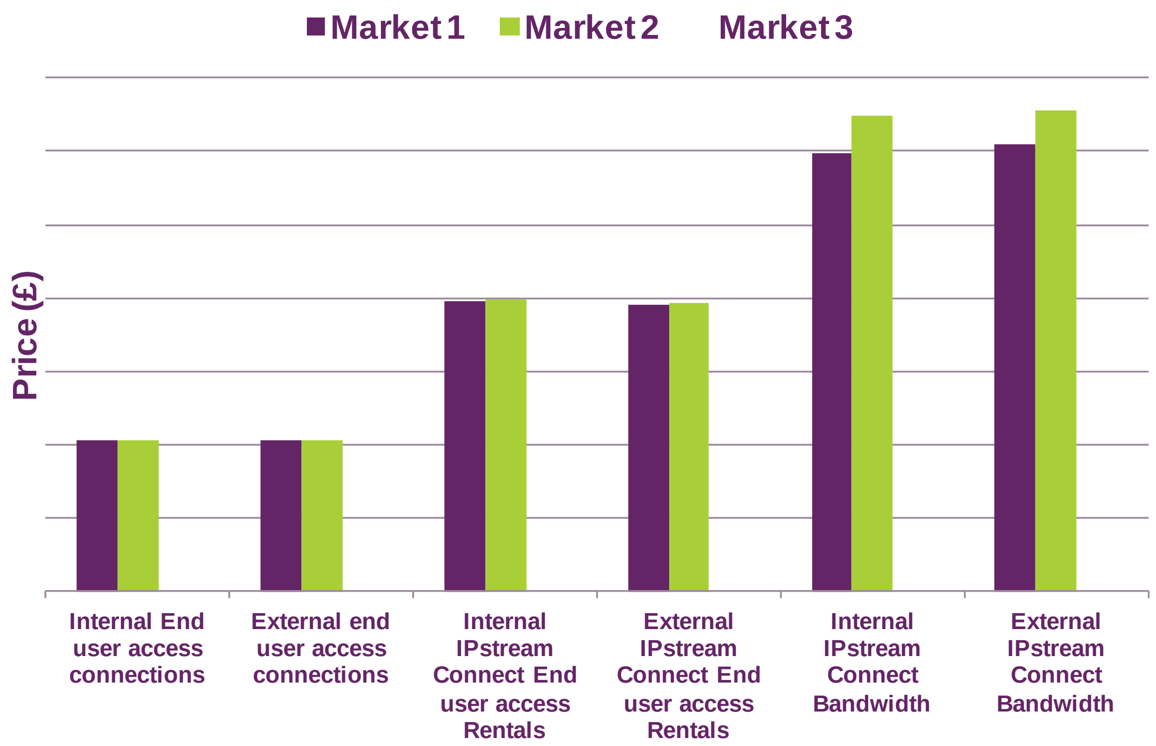

*Source: Ofcom calculation from data provided by Openreach and Virgin Media.*[237]

## Pricing and profitability

5.77 Figure 5.8 below provides price comparison across Market 1, 2 and 3 covering a range of charges on IPstream products offered by BT, broken down by internal and external clients.

[237] Ofcom calculations based on BT, response to Q.1 of s.135 notice, 28 November 2012 and Virgin Media response to Q.1 of s.135 notice, 28 November 2012.

**Figure 5.8: Price comparison across Market 1, 2 and 3 [Market 3 figures redacted]**




*Source: BT*[238]

5.78 The figure shows that prices in Market 3, which accounts for the majority of Market B, are lower than Market 1. This could to some extent reflect lower costs, however, BT's Return on MCE in Market 3 was [✂] for financial year 2011/12, showing that BT is making losses. This suggests that BT is unlikely to have SMP in Market 3 areas.

5.79 In Market 2, where cost orientation was applied, prices of IPstream products are very similar to the charge controlled prices in Market 1, with the exception of IPstream Connect bandwidth charges which are slightly higher. The bandwidth charges may be higher in order to incentivise customers to migrate to WBC, which has yet to be rolled out in Market 1. All these prices are well below current DSAC levels.

5.80 BT's Return on MCE for financial year 2011/12 in Market 2 is [✂]% and only falls to [✂]% after adjustments similar to the adjustments described in the Market A section. This is still greater than its WACC. This high profitability may reflect the higher bandwidth charges on IPstream. These are likely to be eroded as BT's customers migrate to its WBC product. In addition, BT will lose further volumes in some Market 2 exchanges, as POs which have recently entered with their own LLU network migrate their WBA customers and gain further share from BT, this follows our analysis on the evolution of BT's share in BT+1 and BT+2 exchanges (paragraphs 4.75-4.88).

5.81 EE also supplied some additional data on pricing. In particular, [✂][239] As the majority of Market 2 and Market 3 exchanges, and only a minority of Market 1 exchanges, are in Market B, this is consistent with our view that BT does not possess market power in Market B.

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[238] BT data provided in response to Q.3.3 in s.135 notice, 28 November 2012.
[239] [✂]

### Countervailing buyer power

5.82 The pattern of market shares indicates that the market can be regarded as competitive. It is therefore not necessary to analyse countervailing buyer power for our SMP assessment.

### Joint dominance

5.83 There is no significant risk of joint dominance in the market given the number of competitors present.

### Provisional conclusion on SMP in Market B

5.84 Given the significant amount of entry that has occurred across Market B exchanges and the success of these LLU POs and Virgin Media in securing market share, Ofcom considers that no operator has (and will have during the market review period) a position of economic strength in Market B affording it the power to behave to an appreciable extent independently of competitors, customers and ultimately consumers.

5.85 We therefore propose that no operator has SMP in the market for the provision of WBA services in Market B.

## Proposals on SMP in the Hull Area

5.86 Our SMP analysis for the Hull Area remains unchanged from the 2010 review. Despite the entry of MS3 (an operator offering fibre-based wholesale broadband products) since the 2010 Review, KCOM's position of economic strength in the Hull Area affords it the ability and incentive to behave to an appreciable extent independent of competitors. We therefore propose that KCOM has SMP in the provision of WBA in the Hull Area for the reasons set out below.

### Market share

Current shares

5.87 KCOM is a vertically integrated supplier of fixed broadband access in the Hull Area and has historically been the sole supplier of fixed line broadband in the Hull Area. Since the last review, there has been entry into the Hull Area by MS3, a fibre-only broadband provider, who is investing £4.5 million in building its own fibre network in the Hull Area. Although MS3 will provide direct infrastructure competition with KCOM, its plans indicate that is will only achieve a very limited market coverage during the review period.

5.88 We understand that Phase 1 of MS3's network build has already been completed which gives them a network coverage of 550 properties. Phase 2 is yet to be completed, and when done it will extend the coverage to a further 2,164 properties in Hull's town centre.[240, 241] Even after Phase 2 is complete, MS3 will have the ability to serve less than 2% of Hull Area premises.[242] This very low coverage will limit MS3's ability to exert a significant competitive constraint on KCOM in the Hull market. As

[240] MS3 information provided (informally) to BCMR team.
[241] According to MS3, it will complete its network roll-out [✂].
[242] The Hull area accounts for around 200,000 premises.

KCOM has 100% coverage of premises in the Hull Area, KCOM will remain the only the option for the vast majority of Hull Area premises.

Future shares

5.89 Although KCOM's market share in the Hull Area may be eroded slightly as a result of MS3's entry, the extent of this is likely to be very small, given MS3 will have less than [✂] coverage of the Hull Area.

### Barriers to entry

5.90 The Hull Area is characterised by significant barriers to expansion and entry for competitors to KCOM in the market for WBA, primarily in the form of sunk costs and economies of scale.

5.91 One of the notable barriers to entry is the small market size. There are only a limited number of exchanges in the Hull Area, a number of which only serve a small number of premises. In addition, the costs of LLU deployment would be much higher than in the rest of BT, in particular because of backhaul costs, since a PO would need to have an access point in (or around) the Hull Area. There are also fixed costs associated with purchasing LLU from KCOM, including the costs of developing systems that interface with KCOM's systems, which are required to order, maintain and manage LLU products. We understand that although a number of operators such as [✂],[243] and MS3 have considered taking LLU from KCOM, none have yet established plans to do so, a number citing that it did not make commercial sense due to the high integration costs.

5.92 MS3 has entered since the last review by building its own network. However, as described above, the extent of its coverage and its expansion plans are both very limited.

### Countervailing buyer power

5.93 Countervailing buyer power is not relevant for the analysis of SMP in the Hull Area.

5.94 In the vast majority of the Hull Area there are no current alternative options available other than KCOM for buyers of the WBA product. With the rolling out of its fibre network, MS3 will provide coverage in certain parts of the Hull Area, however this will not reach comparable levels of coverage to KCOM. Additionally currently MS3 is only offering its service to business customers.

5.95 It therefore does not appear that any buyer, regardless of size, would be in a position to bargain aggressively in the purchase of WBA services in the Hull Area.

### Joint dominance

5.96 Joint dominance is not relevant in this market, in particular because there is a single firm with such a significant market share.

[243] From confidential 2012 WBA Call for Inputs responses.

### Proposal on SMP in Hull Area

5.97 Despite the entry of MS3, KCOM's market position, barriers to entry and the other factors in this market mean that KCOM currently enjoys (and will continue to do so for the duration of this review) a position of economic strength affording it the power to behave to an appreciable extent independent of competitors, customers and ultimately consumers.

5.98 We therefore propose that KCOM has SMP in the market for the provision of WBA services in the Hull Area.

## Provisional conclusions on SMP

5.99 As set out above, we propose that:

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

## Consultation questions

***Question 5.1:*** *Do you agree with Ofcom's proposal that BT holds SMP in Market A? If not, please explain why.*

***Question 5.2:*** *Do you agree with Ofcom's proposal that no operator has SMP in Market B? If not, please explain why.*

***Question 5.3:*** *Do you agree with Ofcom's proposal that KCOM holds SMP in the Hull Area? If not, please explain why.*

## Section 6

# Remedies

## Summary

6.1 The remedies we propose to impose are summarised in Table 6.1 below.

**Table 6.1: Summary of the proposed remedies**

| Market | Operator | Remedy |
|---|---|---|
| **Market A and The Hull Area** | BT (in Market A) and<br><br>KCOM (in The Hull Area) | Requirement to provide network access on reasonable request<br>Requirement not to unduly discriminate<br>Requirement to publish a reference offer<br>Requirement to notify charges, terms and conditions<br>Transparency as to quality of service<br>Requirement to notify technical information<br>Requirement to account separately |
| **Market A only** | BT | Charge control<br>Cost accounting |

## Introduction

6.2 In this Section, we set out our proposals for remedies to address the competition problems we have identified arising from BT's SMP in Market A and KCOM's SMP in the Hull Area.

6.3 We consider that each proposed remedy fulfils our statutory duties and would satisfy the relevant legal tests for imposing such remedies. In reaching these proposals we have also taken account of our regulatory experience from our previous market reviews, recent developments in this market, views expressed by stakeholders in response to the 2012 WBA Call for Inputs and expected developments over the review period.

### The regulatory remedies that apply presently

6.4 In the 2010 WBA Statement we found that there was limited prospect of any substantial competition in Market 1 (as defined therein) over the period covered by the 2010 market review. We therefore imposed general access and non-discrimination obligations on BT. We also imposed obligations requiring BT to publish information that would secure transparency for the services provided in Market 1. In relation to transparency of financial information we 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.

6.5 In addition we decided that BT's services in this market should be based on the costs of provision (i.e. cost orientated), and should be subject to a charge control in order to restrict BT's ability to charge excessive prices to CPs which would ultimately be passed on to consumers. The details of the charge control were considered in a further consultation published in January 2011 and finalised in the 2011 WBA CC Statement published in July 2011.[244] This was the first time that we had imposed cost orientation and a charge control in the WBA market.

6.6 In Market 2 (as defined in the 2010 WBA Statement) we also imposed general access, non-discrimination and transparency obligations, for the same reasons as in Market 1. However, we decided not to impose a charge control. Although we found there was potential for BT to raise its prices to an excessive level, given its market position, we found that there was some wholesale competition and the potential for this to develop further. We therefore decided to impose a cost orientation obligation on BT but did not impose a charge control. As in Market 1, we also decided that BT's services should be subject to accounting separation and cost accounting obligations to provide transparency of financial information.

6.7 In the Hull Area we decided to impose general access, non-discrimination and transparency obligations (including an accounting separation obligation) on KCOM. We considered that a lack of retail competition in the Hull Area was demonstrated by the lack of entry into the market by providers other than KCOM. Our view was that imposing additional wholesale regulation (such as charge controls) would not encourage investment by other providers. We did not impose a cost orientation obligation, a charge control, or a cost accounting obligation.

## The legal background to SMP remedies

6.8 We set out in Annex 7 the factors relevant when assessing the need for *ex ante* regulation and whether competition law might be appropriate to address the competition concerns identified.

6.9 Section 87(1) of the 2003 Act provides that, where Ofcom has made a determination that a person has SMP in a particular market, it must set such SMP services conditions as it considers appropriate and as are authorised under the 2003 Act. Section 87(1) implements Article 8 of the Access Directive.

6.10 Paragraphs 21 and 114 of the SMP Guidelines state that NRAs must impose one or more SMP services conditions on an undertaking having SMP, 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.

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[244] In the 2011 WBA CC Statement, we imposed a charge control condition on BT in respect of Market 1 as defined in the 2010 WBA Statement. In so doing, we concluded that there had been no material change in Market 1 in the period between the SMP finding in respect of Market 1 in the 2010 WBA Statement and the setting of the charge control condition in the 2011 WBA CC Statement. TalkTalk appealed that decision to the Competition Appeal Tribunal ('CAT'). The CAT dismissed TalkTalk's appeal: see the judgment of the CAT of 10 January 2011 in case 1186/3/3/11 *TalkTalk Telecom Group plc v Ofcom (Wholesale Broadband Access Charge Control)* [2011] CAT 1 at http://www.catribunal.org.uk/files/1.1186_TalkTalk_Judgment_CAT_1_100112.pdf. TalkTalk appealed the CAT's decision to the Court of Appeal. That appeal was heard on 11 and 12 February 2013 and judgment is pending.

6.11 The 2003 Act (sections 45-49 and 87-91) sets out the obligations that Ofcom can impose if it finds that any undertaking has SMP. Sections 87 to 91 implement Articles 9 to 13b of the Access Directive and Article 17 of the Universal Service Directive.

6.12 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.

6.13 Section 3 of the 2003 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. Ofcom must also have regard, in performing its duties, to the desirability of encouraging investment and innovation in relevant markets (section 3(4)(d)) and encouraging the availability and use of high speed data transfer services throughout the UK (section 3(4)(e)). Ofcom must also have regard to the different interests of persons in different parts of the United Kingdom and of persons living in rural and urban areas (section 3(4)(l)). Also, in furthering the interests of consumers, Ofcom must have regard to choice, price, quality of service and value for money (section 3(5)).

6.14 Additionally, section 4 of the 2003 Act sets out the Community duties on Ofcom which flow from Article 8 of the Framework Directive. Where it appears to Ofcom that any of their general duties conflict with one or more of their duties under section 4, priority must be given to those latter duties (section 3(6)). In carrying out its functions under this review, Ofcom must take due account of all applicable recommendations issued by the European Commission under Article 19 of the Framework Directive. Pursuant to Article 3(3) of Regulation (EC) No 1211/2009,[245] Ofcom must take utmost account of any relevant opinion, recommendation, guidelines, advice or regulatory practice adopted by BEREC.

6.15 In considering whether to impose any SMP services conditions, we have considered these duties. In particular, we have considered the requirement to promote competition in relation to the provision of electronic communications networks and electronic communications services.

6.16 Also, SMP services conditions must be appropriate (section 87(1) of the 2003 Act) and satisfy the tests set out in section 47(2) of the 2003 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;

[245] 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 http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2009:337:0001:0010:EN:PDF.

- proportionate to what the condition is intended to achieve; and
- in relation to what it is intended to achieve, transparent.

## Aims of regulating WBA

6.17 In Section 6, we have explained why we consider that BT has SMP in the provision of WBA services in Market A and that KCOM has SMP in the provision of WBA services in the Hull Area. Article 16 of the Framework Directive provides that:

> "Where a national regulatory authority determines that a relevant market is not effectively competitive, it shall identify undertakings which individually or jointly have significant market power on that market…and… shall on such undertakings impose appropriate specific regulatory obligations...".[246]

6.18 The Commission considers that in most cases it is preferable to apply regulation at the wholesale level.[247] 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.

6.19 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 KCOM and BT in downstream markets.

6.20 Regulation at the wholesale level would also help to ensure that the objectives of sections 4(7) and 4(8) of the 2003 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 efficient investment and innovation, and for the purpose of securing the maximum benefit for the persons who are customers of CPs and of persons who make associated facilities available. Regulation at the wholesale level would be likely, as noted above, to 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.

6.21 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.

6.22 We have also taken full account of Oftel's guidelines, which were published on 13 September 2002 ("the Access Guidelines"), on the imposition of access obligations under the new Directives.[248] These describe the circumstances in which we would consider the imposition of wholesale access obligations to be appropriate,

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[246] Article 16(4) of the Framework Directive.
[247] See, for example, section 2.5 of the Explanatory Memorandum to the Commission Recommendation of 17 December 2007 on relevant Product and Service Markets: http://ec.europa.eu/information_society/policy/ecomm/doc/library/proposals/sec2007_1483_final.pdf.
[248] These guidelines can be found at http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.htm.

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.

6.23 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 framework[249] ("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 if a position of SMP is found."[250]

6.24 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.

6.25 The ERG Remedies Position also sets out that, in the case of a single firm having SMP in a wholesale market such as that for WBA, the following remedies are available to address the concerns set out above:

- transparency obligations;
- non-discrimination obligations;
- accounting separation obligations;
- obligations to meet reasonable requests for access to, and use of, specific network elements and associated facilities;
- price control and cost accounting obligations.[251]

6.26 We have also taken utmost account of the BEREC common position on best practice in remedies on the market for WBA (including bitstream access) imposed as a consequence of a position of significant market power in the relevant market ("the BEREC Common Position on WBA").[252]

6.27 In addition, we have taken due account of the Commission Recommendation of 20 September 2010 on regulated access to Next Generation Access Networks ("the

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[249] See http://www.irg.eu/streaming/erg_06_33_remedies_common_position_june_06.pdf?contentId=542920&field=ATTACHED_FILE.

[250] See page 9 of the ERG Remedies Position. Note: the number of markets identified by the Commission as susceptible to *ex ante* regulation was subsequently reduced from 18 to 7 in the 2007 Recommendation.

[251] See section 3 of the ERG Remedies Position.

[252] See http://www.berec.europa.eu/files/document_register_store/2012/12/BoR_(12)_128_CP_WBA.pdf.

NGA recommendation")[253], which includes a range of remedy considerations that NRAs need to take into account in the light of the deployment of NGA networks. Finally, whilst noting that it is still in draft form, we have had regard to the Commission's draft Recommendation on non-discrimination obligations and costing methodologies to promote competition and enhance the broadband investment environment which seeks to provide further guidance on the regulatory principles established by the NGA recommendation ("the draft Recommendation on non-discrimination").[254]

### Responses to the 2012 WBA Call for Inputs

6.28 In the 2012 WBA Call for Inputs, we asked stakeholders to provide their views on the following:

- how well the current remedies have worked in promoting downstream competition;
- how effective the current remedies have been in addressing the market failures identified in the 2010 WBA Statement and in supporting competition and market entry;
- the remedies that should apply during the next market review period; and
- whether they have experienced any particular problems or issues in the WBA markets that the current review should address.[255]

6.29 In general, most respondents that addressed the issue agreed that the general access, non-discrimination and transparency obligations imposed on BT and KCOM in the last review were appropriate and, overall, worked well in promoting competition both at the retail and wholesale level and in supporting market entry. Some suggested that in the absence of those remedies, consumers would have no retail alternative to BT, especially in Market 1. They were in favour of imposing broadly the same set of remedies for the next market review period.

6.30 Most stakeholders (Vodafone, EE, FCS, TalkTalk, Sky and Virgin Media) were in favour of price regulation, stressing its necessity for the maintenance of retail competition in SMP areas. However, TalkTalk told us that a charge control should not be imposed on BT in respect of any exchanges where two or more POs are present, since to do so would deter efficient entry and expansion, and BT questioned whether we should impose a charge control at all. It said that a lighter-touch approach would be sufficient and a safeguard cap could be set that recognised the need for further investment by BT or others.

6.31 Vodafone and FCS suggested that, as the adoption of fibre-based products at the retail level grows, it will be necessary to introduce regulation of Openreach's NGA products. Vodafone added that we should take into account the subject of migration, in particular where migration processes and charges for the migration to NGA may be discriminatory. It mentioned in particular that it had experienced tremendous

[253] See http://eur-lex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2010:251:0035:0048:EN:PDF.
[254] See http://ec.europa.eu/digital-agenda/en/news/draft-commission-recommendation-consistent-non-discrimination-obligations-and-costing.
[255] http://stakeholders.ofcom.org.uk/consultations/review-wholesale-broadband/.

difficulty in migrating CGA services in a case where the managed supply of IPstream was transferred to it from another CP.

6.32 EE told us that it does not consider BT should be found to have SMP in Market 2, but that if we disagree we should consider very carefully what remedies are necessary, proportionate and objectively justified in this market.

### Structure of the rest of this Section

6.33 We have structured the rest of this Section as follows:

- A high level discussion of the competition problems identified in Market A and in the Hull Area as a result of our SMP assessment.
- Our assessment of appropriate remedies for Market A and for the Hull Area, including comments made by stakeholders in the 2012 WBA Call for Inputs responses.
- A proposal for the appropriate set of remedies based on the above assessment. For each proposed remedy we clarify the aim and the legal basis for that remedy.

## Assessment of the competition problems in Market A

### Competition problems identified in Market A

6.34 In light of our SMP analysis, in the absence of ex-ante regulation, BT would have the incentive, and its market power would afford it the ability, to:

- refuse to provide network access to other providers which could restrict competition in the provision of retail offers;
- discriminate in favour of its own retail divisions, e.g. by setting different terms and conditions (including prices), which would limit the ability of CPs to compete with BT in the retail market;
- charge excessively high prices; and
- engage in a margin squeeze.

6.35 We consider these competition problems further as we address each proposed remedy for Market A below.

### Insufficiency of national and EU competition law remedies

6.36 We consider national and EU competition law remedies alone would be insufficient to address the competition problems we have identified.

6.37 First, we do not consider appropriate remedies could necessarily be imposed under competition law. In this respect, we refer to the detailed nature and scope of the remedies we propose imposing to address the competition problems – e.g. a requirement to supply WBA services, cost accounting obligations, and a charge control. In addition, the SMP conditions we propose imposing have been designed specifically to be able to effectively address the competition problems we have identified over the three year review period.

6.38 Second, we consider the requirements of intervening are extensive – e.g. the time and resources required not only to investigate whether national or EU competition law has indeed been breached, but also to determine an appropriate remedy and then the need to monitor any imposed terms and conditions as part of the appropriate remedy.

6.39 Third, we consider providing certainty in the wholesale market is of paramount importance, both to BT and to its competitors, as this underpins competition in the retail market, which delivers benefits for consumers. We consider this is best achieved through *ex ante* regulation which, in comparison to reliance on *ex post* competition law remedies alone, would:

- provide greater clarity on the types of behaviour that is/is not allowed; and
- be easier to enforce in that it would allow for timely intervention through a process with which the market, in general, is familiar and which is set out in the 2003 Act.

### Result of our assessment of competition problems

6.40 In light of our market analysis, in particular our SMP assessment, and our assessment of the insufficiency of national and EU competition law remedies to address the competition problems we have identified, we consider that, over the course of the review period, competition would be ineffective in Market A. In order to address the competition problems identified we now turn to our assessment of the appropriate remedies.

6.41 With regard to the point made by EE regarding the appropriateness of remedies, we have taken account of all of our duties under the Framework Directive and the 2003 Act, as summarised above. This has included a consideration of whether our proposed remedies are necessary, proportionate and objectively justified.

## Assessment of appropriate remedies for Market A

### General access, non-discrimination and transparency obligations

Existing remedies

6.42 As a result of the market review which culminated in the 2010 WBA Statement, the following general access, non-discrimination and transparency obligations currently apply to BT in Market 1 and Market 2:

- 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; and

- Requirement to account separately.

## Responses to the 2012 WBA Call for Inputs

6.43 In the 2012 WBA Call for Inputs, we asked for views on the effectiveness of the current remedies in the WBA markets. Stakeholders broadly agreed that for markets where SMP is determined it is appropriate for general access, non-discrimination and transparency remedies to be imposed.

## General access obligations

6.44 As explained above, in the absence of regulatory remedies in Market A, BT would not have the incentive to provide network access to other providers, and this could restrict competition in the provision of retail offers.

6.45 We consider that in order to promote competition in the provision of downstream broadband services, an obligation requiring BT to provide network access is necessary. This condition would help to enable other providers to compete in the downstream markets by allowing them access to the products they need, but which they cannot replicate themselves due to the very high costs of deploying the network needed to provide these products.

6.46 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 any type of 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).[256]

## Non-discrimination obligations

6.47 If BT is only required to provide network access it may discriminate in favour of its own retail divisions. As competitors have no other source of supply in the large majority of exchanges (and premises) in Market A, and only one other PO is an alternative supplier in the other Market A exchanges (and premises), this would limit their ability to compete with BT in the downstream market. This discrimination may take the form of setting excessive prices for wholesale products or in providing products of inferior quality or functionality.

6.48 Therefore, the obligation to provide network access is more likely to be effective if it is supported by an obligation not unduly to discriminate. Such an obligation is intended as a complementary remedy to the network access obligation, principally to prevent the dominant provider from discriminating in favour of its own downstream divisions and to ensure that competing providers are placed in an equivalent position.

6.49 Non discrimination can, however, take different forms of implementation. A strict form of non discrimination – i.e. a complete prohibition of discrimination – would require

[256] By way of example, a request for network access from BT in an exchange that it has not enabled for broadband would not be a reasonable request.

BT to provide exactly the same products and services to all CPs (including its own downstream divisions) on the same timescales, terms and conditions (including price and service levels), by means of the same systems and processes and by providing the same information. Essentially, the inputs available to all CPs (including the SMP operator's own downstream divisions) would be provided on a truly equivalent basis, an arrangement which has become known as 'equivalence of inputs' (EoI). The concept of EoI was first identified in the Strategic Review of Telecoms in 2004/5 as one of our key policy principles to ensure that regulation of the telecommunication markets is effective. Following on from that review, a specific form of EoI was implemented in 2005 through the BT Undertakings.[257]

6.50 EoI as a non-discrimination remedy is in principle the surest way to achieve effective protection from discrimination, although we recognise that requiring EoI in all cases could in certain circumstances lead to inefficiencies, and therefore might in some cases be considered disproportionate. For example, in order to comply, the dominant provider may need to re-engineer existing products and processes, which could be both costly and disruptive.

6.51 In order to meet our objective to promote efficient and sustainable competition at the wholesale level, it is appropriate to impose a requirement on BT to provide network access on an EoI basis, given that BT, as a result of the BT Undertakings, already supplies network access on an EoI basis. Imposing an EoI requirement as an SMP condition in Market A would not be unduly onerous as it would not require BT to re-engineer existing systems and processes in order to comply with the proposed condition.

## Transparency obligations

6.52 In order to ensure BT is complying with the obligations to provide network access on an EoI basis, additional obligations related to ensuring transparency are also required. Such obligations would also provide third parties with access to the information they need in order to make informed decisions about purchasing BT's wholesale products. Without these obligations, not only would it be difficult for third parties to assess whether BT was meeting its obligations to provide network access and to not discriminate unduly, but third parties might not have sufficient information in order to decide whether, or how, to enter the downstream market by purchasing BT's wholesale products. This could ultimately undermine the effectiveness of our access remedies.

6.53 Transparency obligations would require BT 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, 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.

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[257] See http://stakeholders.ofcom.org.uk/binaries/telecoms/policy/bt/consolidated.pdf. Definition of EoI in the BT Undertakings: 'Equivalence of Inputs' or 'EOI' means that BT provides, in respect of a particular product or service, the same product or service to all CPs (including BT) on the same timescales, terms and conditions (including price and service levels) by means of the same systems and processes, and includes the provision to all CPs (including BT) of the same Commercial Information about such products, services, systems and processes. In particular, it includes the use by BT of such systems and processes in the same way as other CPs and with the same degree of reliability and performance as experienced by other CPs.

6.54 A further transparency obligation is related to providing information as to quality of service. BT could seek to favour its own retail divisions by, for example, providing a service more quickly to its retail division than to third parties. Alternatively it may offer preferential repair for its retail divisions or prioritise the broadband traffic of its retail customers over third party traffic. An obligation to provide transparency as to quality of service would ensure BT complies with its obligation not to unduly discriminate by reporting the quality of service provided internally and externally.

6.55 It is essential, if the obligation to not unduly discriminate is to be meaningful, that BT is required to make transparent its wholesale prices and internal transfer prices, i.e. to demonstrate that it is not unduly discriminating against CPs. We therefore consider it necessary to retain an accounting separation requirement on BT in order to allow Ofcom, and third parties, to monitor its activities to ensure that it does not discriminate in favour of its own downstream business.

### Conclusion

6.56 Given that BT holds a position of SMP in Market A and faces limited competition from other providers, in the absence of regulation it has an incentive not to provide products on equitable terms to potential competitors of its own downstream divisions. Therefore, we propose that general access, non-discrimination and transparency obligations are required in Market A.

## Price controls

### Existing remedies

6.57 Following the 2010 WBA Statement and 2011 WBA Charge Control Statement, a charge control on IPstream Connect 8Mbit/s (Max and Max Premium) applied to BT in Market 1. This was implemented by a single control basket with a safeguard cap on certain services within the basket.

6.58 Also as a result of the 2010 WBA Statement, the following price control obligations currently apply to BT in Market 1 and Market 2:

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

### Responses to the 2012 WBA Call for Inputs

6.59 Vodafone, EE, FCS, TalkTalk and Virgin Media suggested that a charge control remedy would be necessary in the future, where SMP is found.

6.60 BT told us, however, that a finding of SMP alone is insufficient to justify the imposition of specific pricing constraints whether via charge controls, safeguard caps or cost orientation requirements. It said that the imposition of a charge control would be disproportionate, as the explicit modelling of services in such a small area could be subject to large fluctuations in the unit costs due to the small level of volumes when compared against the costs that need to be recovered. It said a lighter-touch approach would be sufficient and a safeguard cap could be set instead of a charge control.

6.61 TalkTalk said that where only BT is present in an exchange, a strict set of remedies is appropriate including a strict charge control, but where BT and one or more operators are present/planned, the remedy should exclude any charge control since to do so would deter efficient entry and expansion.

6.62 Sky did not explicitly comment on the need for a charge control, but did raise a number of points on the approach to modelling, which we address in Section 7.

6.63 Vodafone told us that while customers have better protection around the price of their services, the controls do not appear to incentivise BT to upgrade non 21CN exchanges beyond the plans that existed prior to the charge control being in place.

6.64 On the issue of cost orientation, BT said that we should refrain from combining a safeguard cap (or other form of charge control) with a cost orientation obligation as this could end up creating overlapping and overly complex and intrusive regulation. Virgin Media and FCS said we should continue to impose this remedy in markets where SMP is identified.

6.65 A number of additional points were raised by stakeholders on price controls. We summarise and address these points in Section 7.

## Price control options

6.66 In a competitive market, the pricing of services on the basis of the commercial judgements of individual companies could be expected to deliver cost reflective pricing. However, where competition cannot be expected to provide effective constraints, *ex ante* regulation may be desirable to prevent excessive pricing and margin squeezing. Such intervention could also have as its objectives the aim of promoting efficiency, allowing the development of effective competition in downstream markets and conferring the greatest possible benefits on end users.

6.67 In light of our concern that BT will have the incentive and ability to increase wholesale prices in Market A in the absence of regulation, we have considered the following options for how we might approach price regulation in that market:

- No specific price controls;
- Link prices in uncompetitive areas to competitive areas;
- Cost orientation;
- Charge control.

## (a) No specific price controls

6.68 A combination of the general access remedies and non-discrimination remedies that we propose to impose on BT in Market A has the potential to constrain BT’s wholesale prices in Market A. The proposed general access remedies would act in addition to the ex post competition law requirement for a dominant operator not to engage in abusive conduct (e.g. excessive pricing or margin squeeze) towards downstream rivals.

6.69 It is possible that these obligations could be effective in constraining BT’s wholesale prices if BT set a uniform national retail price, and the retail price in Market B were constrained by competition. This might mean that its retail prices were also constrained at the competitive level in Market A. Furthermore, non-discrimination obligations and the threat of margin squeeze investigations could mean that BT is unable to raise wholesale prices to competitors in Market A above the competitive level.

6.70 Historically, BT has priced its main products uniformly at the retail level. However, there is no assurance that it will continue this practice. It already prices some of its business products differentially according to geographic areas. Moreover, the BT subsidiary Plus.net prices differently in Market 2 and Market 3 (compared with Market 1). Finally BT Retail, whilst maintaining a national price, offers discounts to its customers, which could be used to price discriminate according to geography [✂].[258]

6.71 Some form of price control is likely to be appropriate in Market A, particularly given the lack of assurance that BT will continue its practice of national retail pricing.

(b) Link prices in uncompetitive areas to competitive areas

6.72 Under this option, we would impose a pricing mechanism by which Market A pricing could be linked to the pricing in the more competitive Market B.

6.73 BT has proposed a similar such mechanism to us, whereby Market 1 pricing could be linked to the pricing in the more competitive Market 3.[259] BT told us that, in response to competitive pressures, its Market 3 pricing would continue to offer greater levels of bandwidth to end users without average prices increasing to the same extent, and that a pricing mechanism could be introduced to allow BT to mirror this dynamic in Market 1.

6.74 BT told us that this would provide:

- greater certainty and consistency of pricing across broadband markets for wholesale customers over the next five years;
- pricing that supports further broadband bandwidth growth and a high level of end user experience in Market 1, without the need for Ofcom to impose direct market remedies; and
- the necessary market conditions to complete the WBC roll-out to the remainder of the UK over the same period.

6.75 There are numerous difficulties associated with this approach, including the following:

- BT might offer discounts on the published prices in Market B or enter into bespoke commercial arrangements, defeating the purpose of the remedy by breaking the link between Market A and Market B prices;
- if we linked prices in Market A with an average of non-published prices in Market B, it is not clear how we would calculate the average price (and it is not clear how often that average price would need to be recalculated);
- if BT made frequent adjustments to actual or headline prices in Market B, thereby affecting the prices in Market A, this could make monitoring of the remedy difficult; and

[258] BT response to s.135 notice2003 Act, 28 November 2012.
[259] Submission from BT, "*Broadband Market 1 Discussion Paper*", 7 March 2013.

- there would also be a lack of transparency for BT's wholesale customers in that it would be difficult for them to see what price(s) the prices in Market A should be linked with.

6.76 As a result, there would be a high risk of regulatory failure by imposing such a remedy. This would not be an appropriate or practicable remedy to address the competition concerns regarding potential excessive pricing in Market A.

## (c) Cost orientation only

6.77 In the 2010 WBA Statement we imposed a cost orientation obligation on BT in both Market 1 (alongside a charge control) and in Market 2 (where there was no charge control).

6.78 We have considered whether it is appropriate to impose only a cost orientation obligation on BT in Market A (i.e. in the absence of any charge control[260]). Such an obligation would require BT to set prices based on its costs incurred in Market A, to provide a safeguard against excessive pricing.

6.79 As we explain below, our view is that this remedy would not be appropriate for reasons of efficiency incentives, cost uncertainties, and the difficulty in selecting the appropriate basis for any cost orientation obligation.

*Efficiency incentives*

6.80 Cost orientation alone would be unlikely to encourage BT to reduce its costs over time by becoming more efficient in the provision of WBA services. Under an Inflation-X charge control, incentives are created on the incumbent 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. A cost orientation obligation, which only requires the firm to comply with prescribed cost floors and ceilings that move annually in line with costs, would not have the same effect.

*Cost uncertainties*

6.81 Up to now, BT has allocated the cost of IPstream on a national basis. However, BT is in the process of replacing IPstream with WBC and during the next market review period, IPstream will be available only in certain Market A exchanges. It is unclear what impact this might have on BT's approach to cost allocation and, consequently, on its wholesale prices during the next market review period. Given this uncertainty, it is difficult to know how effective any cost orientation obligation would be in constraining BT's ability to increase its wholesale prices.

*Basis for cost orientation obligation*

6.82 Even if we did not have concerns regarding efficiency incentives or cost uncertainties, it is not obvious what the appropriate method for this type of regulation would be.

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[260] We consider in Section 7 whether it would be appropriate to impose a cost orientation obligation alongside a charge control.

6.83 A cost orientation obligation based on DSAC and DLRIC is likely to allow BT too much pricing flexibility, given the specific circumstances of this market. As set out in previous sections, this is a mature market, where BT faces little or no competition, so a tighter control is likely to be warranted in order to protect consumers.

6.84 We could use an alternative form of cost orientation obligation. One option would be to use an approach based on fully allocated costs ('FAC').[261] However, setting a condition limiting all prices to FAC would be too rigid to allow the bounded flexibility we consider desirable. As the provision of WBA services is characterised by high fixed common costs which have to be recovered through charges, efficient recovery of total costs will require prices to be set taking account of the responsiveness of demand to changes in price. Simply setting all prices equal to a measure of accounting cost such as FAC therefore has the potential to be very inefficient given the significant common costs. It would be possible to require average prices to be set at FAC; but that would then open the question of how to constrain individual prices. This could perhaps be done by allowing a particular range relative to FAC on smaller groups of services. However this starts to come close to the approach of a charge control, without the desirable efficiency benefits, as set out in the next paragraph.

6.85 A variant of this approach would be to allow prices to be set within a range, e.g. FAC plus Y%, potentially with a different value for Y across different groups of services. However, if we compare this approach to an Inflation-X charge control, it looks less desirable, as an Inflation-X charge control also seeks to bring prices in line with FAC, but does so in a way that also offers efficiency benefits, as well as greater certainty both for the regulated firm and for other stakeholders.

6.86 This point is likely to apply particularly strongly where the SMP firm is considering upgrading to newer technology which may offer lower costs. If a lower-cost technology existed, a cost orientation obligation which required BT to maintain prices in line with annual costs would pull prices down immediately to the new lower level once the new technology was rolled out. This would risk allowing less incentive to invest when compared to an Inflation-X charge control, which would allow BT to reap the benefits from rolling out more efficient, lower-cost services, at least for the life of the charge control, in keeping with the 'fair bet' principle.

### (d) Charge control

6.87 Having identified a risk of excessive pricing in Market A in our market analysis, we consider that some form of price control is necessary.

6.88 However, none of the approaches discussed above (relying on general access and non-discrimination obligations, linking prices in uncompetitive areas to competitive areas, or cost orientation only) would be likely to address our concerns. These concerns should be addressed through an appropriate charge control condition.

6.89 We recognise that a charge control potentially carries scope for forecasting error, which is not a concern in respect of cost orientation obligations. This is because charge controls are based on a regulatory forecast of costs at the time of the market

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[261] FAC is an accounting concept designed to ensure that all of a firm's relevant costs (both incremental and common) are attributed to its activities. If a firm set all its charges equal to FAC for each unit, all things being equal, it would be expected to recover (but not over-recover) all its costs, including all of its common costs. These costs typically also include an allowance for a return on capital which is measured at the firm's cost of capital (i.e. its WACC).

review, while cost orientation obligations are based on an annual assessment of current costs. However, as we explain in Section 7, we do not consider that costs are so uncertain as to prevent us from designing an effective charge control remedy. Furthermore, we propose that the duration of the charge control will be limited to three years, which would mitigate the potential impact of any forecast error.

*Cost accounting*

6.90 In addition to a charge control, we consider that a transparency obligation requiring BT to provide cost accounting data is appropriate in order to provide transparency of BT's costs in Market A, as this will allow us and other stakeholders to ensure BT is complying with the charge control obligations.

6.91 In Section 7, we consider the specifics of the charge control and cost accounting obligations, including comments raised by stakeholders in their responses to the 2012 WBA Call for Inputs.

## (e) Obligations to address margin squeeze concerns

6.92 We propose imposing obligations on BT which require it to provide WBA and any ancillary services on fair and reasonable terms, conditions and charges. These obligations would require BT to maintain a suitable margin between its WBA charges and its charges for retail products which are based on WBA.

6.93 Having come to the view above that some form of charge control is necessary, we would expect that to be the primary remedy to establish a price ceiling. We would not intend the requirement for fair and reasonable charges to establish any additional constraint on the maximum prices that the SMP operator could charge, except in as far as lower prices might be necessary to satisfy the requirement not to impose a margin squeeze.

6.94 The requirement for fair and reasonable charges could also be used to address any concerns about low prices. However, we do not consider that predatory pricing is likely to be a concern in Market A.

6.95 In addition, and separately, the margin between BT's WBA charges and its charges for retail products which are based on WBA could be subject to assessment under EU and/or UK competition law.

6.96 As discussed in the 2013 FAMR Consultation, in relation to Virtual Unbundled Local Access (VULA) there is a distinction between SMP (ex-ante) and competition law (ex-post) regulation. However, whether this distinction manifests itself as a different approach when assessing a potential margin squeeze will depend on the potential concern being addressed by the SMP regulation.

6.97 Our concerns in respect of WBA products in Market A are different to those in relation to VULA across the whole of the UK. Consumers in Market A areas already face some of the highest prices for broadband services in the UK. Therefore, we would not want to pursue a regulatory approach that resulted in these prices increasing in the short to medium term further unless there were clear long term benefits that outweighed these price increases.

6.98 The requirement for charges to be fair and reasonable in addition to competition law is sufficient to address any potential concerns regarding alleged margin squeeze.

## Proposed conditions in Market A

6.99 Based on the above, we propose the following remedies:

- Requirement to provide network access on reasonable request (including an obligation to provide access on fair and reasonable terms, conditions and charges);
- Requirement not to unduly discriminate;
- Transparency obligations;
    - o Requirement to publish a reference offer;
    - o Requirement to notify charges, terms and conditions;
    - o Requirement to publish technical information;
    - o Transparency as to quality of service; and
    - o Requirement to account separately.
- Charge control; and
- Cost accounting.

6.100 With the exception of the proposed charge control and cost accounting conditions, which we discuss in Section 7, we discuss each of these conditions below, specifically in relation to how they address our competition concerns in Market A.

### Requirement to provide network access on reasonable request, including an obligation to provide access on fair and reasonable terms, conditions and charges

6.101 Section 87(3) of the 2003 Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as it 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 new forms of network access are made and responded to, and for securing that conditions are complied with within the periods and at the times required by or under the conditions.

6.102 When considering the imposition of such conditions, Ofcom must have regard to the six factors set out in section 87(4) of the 2003 Act, including, inter alia, the technical and economic viability of installing other competing facilities, the feasibility of the proposed form of network access, the investment made by the person initially providing the network (taking account of any public investment made) and the need to secure effective competition (including, where it appears to Ofcom to be appropriate, economically efficient infrastructure based competition).

Aim of regulation

6.103 We consider that it is appropriate to impose a requirement on BT as a result of its SMP to meet reasonable requests for network access. We consider that, in the absence of such a requirement, BT would have the ability and the incentive not to provide such access. Therefore we consider it necessary to impose an obligation on

BT to provide network access on reasonable request. The condition will also require BT to provide network access in response to such a reasonable request and that access should be provided on fair and reasonable terms, conditions and charges.

6.104 Our market analysis has shown that there are considerable sunk costs associated with building networks to provide broadband services in Market A, at least for current generation services. We consider that it is unlikely to be economically viable for other CPs to build direct access networks in Market A on a sufficient scale to provide a viable alternative to BT. Therefore, we are currently of the view that a requirement on BT to provide access to its network in Market A 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.

6.105 As noted in paragraph 6.46, it would only be appropriate to require BT to meet those requests for network access that are reasonable and technically feasible (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).

## Legal tests

6.106 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable as it will secure effective competition by ensuring third parties are able to require WBA where they are unable to replicate BT's network;
- not unduly discriminatory as it is imposed on BT and BT is the only operator which we are proposing to find holds SMP in Market A;
- proportionate as it is directly targeted at addressing the market power which Ofcom consider BT holds in this market and it does not require BT to provide access where it is not technically feasible or reasonable; and
- transparent in relation to what it is intended to achieve as it is clear that the intention of the proposed condition is to ensure that BT provides access to its networks in order to facilitate competition.

6.107 We have also taken into account the factors set out in section 87(4) of the 2003 Act. In particular, the proposed obligation would require BT to meet requests that are reasonable only, by which it is meant, inter alia, that the terms of access are technically and economically viable, and feasible. The requirement on BT only to meet reasonable network access requests also ensures that due account is taken of the investment made by BT initially in providing the network whilst ensuring that effective competition is secured in the long term.

6.108 We are also required to ensure that the proposed condition satisfies the tests set out in section 88 of the 2003 Act as the requirement places controls on network access pricing, insofar as charges are required to be fair and reasonable.

6.109 Section 88(1)(a) of the 2003 Act requires that Ofcom must not impose price control conditions unless it appears to them 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. We have discussed above that we consider that, in the absence of price regulation requiring prices to be 'fair and reasonable', BT may price excessively or engage in a margin squeeze, and therefore propose that there is such a risk.

6.110 Section 88(1)(b) of the 2003 Act provides that Ofcom must not set a price control condition unless it appears to them that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end users of public electronic communications services.

6.111 Fair and reasonable charges will prevent BT from passing on any inefficiently incurred costs to other wholesale providers through excessively high prices. In this way, this condition supports the aim of improved efficiency.

6.112 We also consider that the provision of network access on fair and reasonable terms will promote sustainable competition by ensuring that other CPs can effectively compete at the retail level. We consider this to be the appropriate approach for the purposes of conferring the greatest benefits on end users of the services.

6.113 We are also required, under Section 88(2) of the 2003 Act, to consider BT's investment. We believe that fair and reasonable charges will allow BT's costs to be taken into account and will also provide for common cost recovery. This condition is therefore an appropriate basis upon which to control BT's prices.

6.114 We have considered our duties under section 3 of the 2003 Act and consider that the proposed condition will further the interests of citizens and consumers in relevant markets by the promotion of competition.

6.115 We have considered the Community requirements as set out in section 4 of the 2003 Act. We consider that the proposed obligation will promote competition in relation to the provision of electronic communications networks and encourage the provision of network access for the purpose of securing efficient and sustainable competition in markets for electronic communications networks and services resulting in the maximum benefit for retail consumers of broadband internet access services.

6.116 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objectives "Assurance of access" (BP1 to BP9), "Assurance of co-location at delivery points" (BP10), and "Fair and coherent access pricing" (BP42).

6.117 We do not propose any remedies to reflect BP28, which states that "NRAs should impose obligations on SMP operators in order to ensure wholesale switching processes are speedy and efficient". This is because switching between wholesale suppliers has so far not been significant in the UK. To the extent that it does occur it relies on migration processes in the upstream LLU market. Furthermore, since Market A and the Hull Area together represent only a small proportion of premises, migration processes in the competitive Market B, which we do not intend to regulate, will be the more important factor in switching.

6.118 In using a fair and reasonable charges obligation to protect against a margin squeeze, the proposed condition is also consistent with the 2002 Access Guidelines, which state that:[262]

> "Oftel takes 'fair and reasonable' to mean, amongst other things, that terms and conditions under which products are offered are consistent with those which would be offered in a competitive market, sensible, practical, and do not impose a margin squeeze on competitors".

6.119 For the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement not to unduly discriminate

6.120 Section 87(6)(a) of the 2003 Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

Aim of regulation

6.121 We consider that, in order to meet our objective to promote efficient and sustainable competition at the wholesale level it is appropriate to impose a requirement on BT not to discriminate unduly in the provision of network access. In the absence of such a requirement, BT could favour its own downstream businesses which would adversely affect competition.

6.122 In particular, we consider that an EoI obligation for the provision of WBA services in Market A is the necessary form of non-discrimination obligation required to effectively address the relevant competition problems we have identified, in particular BT's ability and incentive to engage in discriminatory pricing and non-pricing practices in favour of its downstream divisions.

6.123 Competition in the provision of retail broadband services and consumer access to those services is paramount, and if we do not impose EoI, this may act as an impediment to improved products being made available equally promptly to BT's retail division and to its competitors.

6.124 A less strict interpretation of no undue discrimination would, by its very nature (taking into account our Discrimination guidelines on undue discrimination by SMP providers[263]) allow for certain discriminatory conduct – compliance with that obligation needs to establish in particular whether the discrimination in question is undue. However, whether the conduct in question is such as to amount to a breach of the undue discrimination obligation can only be determined on a case-by-case basis.

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[262] "*Imposing access obligations under the EU Directives*", Oftel, 13 September 2002, paragraph 3.39. http://www.ofcom.org.uk/static/archive/oftel/publications/ind_guidelines/acce0902.pdf.

[263] Ofcom, *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/binaries/consultations/undsmp/statement/contraventions4.pdf.

6.125 An EoI obligation removes any degree of discretion accorded to the nature of the conduct. The distinction between these two forms of non-discrimination is that, in the case of the former, both the ability and the incentive on the part of the SMP operator may still exist to engage in the relevant conduct – however, in the case of the latter, the ability is removed ex ante altogether.

6.126 We recognise that an EoI obligation should be imposed only where it is proportionate. Due to the current requirements in the BT Undertakings, it is BT's current practice to supply WBA in Market A on an EoI basis. Imposing a very similar requirement as an SMP condition would therefore not be unduly onerous as it would not require BT to re-engineer existing systems and processes in order to comply with the proposed condition.

Legal tests

6.127 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable as it provides a safeguard to prevent BT from favouring its own retail business, to the disadvantage of its competitors, and to prevent BT from favouring particular CPs over others who lack any available substitutes;

- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;

- proportionate in that it would enable CPs to compete effectively with BT at the retail level for the benefit of consumers, and BT would not incur any further costs in complying with the condition, given that it already supplies network access on an EoI basis; and

- transparent in relation to what it is intended to achieve as it is clear that the intention of the proposed condition is to prevent undue discrimination.

6.128 We have considered our duties under section 3, and all the Community requirements set out in section 4, of the 2003 Act.

6.129 As we consider that BT has SMP in the provision of WBA in Market A, it controls a key input into a range of downstream services, principally asymmetric broadband internet access. Together with an obligation to provide network access, the proposed obligation would in particular encourage the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in downstream markets by ensuring that BT does not unduly discriminate. This will ensure a level competitive playing field, leading to the promotion of competition and the interests of consumers through the maximisation of choice in downstream markets.

6.130 Therefore, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition in accordance with section 3 of the 2003 Act.

6.131 Further, we consider that, under section 4 of the 2003 Act, the proposed 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 internet access services.

6.132 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective “Level playing field” (BP11 to BP14).

6.133 In making our proposals, we have also taken into consideration the draft Recommendation on non-discrimination, which supports the provision of network access on the basis of EoI. We will take due account of the final EC Recommendation in reaching our decision.

6.134 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Transparency obligations

6.135 We propose that BT should be subject to a set of obligations aimed at promoting transparency and ensuring non-discrimination. The obligations, which we discuss in more detail below, are:

- an obligation to publish a reference offer setting out prices, terms and conditions;
- an obligation to give 28 days notice of changes to prices, terms and conditions for network access;
- an obligation to notify technical information within 90 days of network access;
- an obligation to publish quality of service information, as directed by Ofcom; and
- an obligation to account separately.

6.136 These requirements are designed to support the network access and non-discrimination obligations. As noted above, they are designed to ensure that a vertically integrated incumbent such as BT does not use non-price discrimination to restrict competition in downstream markets.

6.137 In our view, since their imposition as a result of the 2010 WBA Statement, these SMP obligations have been on the whole effective in supporting the non-discrimination obligation to address BT’s ability and incentive to engage in anti-competitive discriminatory practices.

6.138 We therefore consider it appropriate to re-apply these obligations to BT. We discuss each of the transparency obligations in more detail in the sub sections below.

### Requirement to publish a reference offer (setting out prices, terms and conditions)

6.139 Section 87(6)(b) of the 2003 Act authorises the setting of SMP services conditions which require a dominant provider to publish information for the purpose of securing transparency in such manner as Ofcom may direct. Section 87(6)(c) of the 2003 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) permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the reference offer. 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 by Ofcom from time to time.

6.140 We consider that, where we require a reference offer 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 reference offer 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 reference offer, 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, conditions and charges that are fair and reasonable. This will ensure that products are offered on terms and conditions as they would in a competitive market.

### Aim of regulation

6.141 We consider that it is appropriate to impose a requirement on BT to publish a reference offer. The main reasons for the publication of a reference offer 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.

6.142 The requirement to publish a reference offer would complement the network access conditions to secure freedom of choice for wholesale customers of BT and allow CPs to make informed decisions about future entry into the relevant market. Further, the proposed obligation would promote the interests of purchasers of WBA by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. Finally, the proposed obligation would make it easier for Ofcom and other CPs in the relevant market to monitor any instances of discrimination.

6.143 Overall, the publication of a reference offer would help to ensure stability in markets and ensure that incentives to invest would not be undermined.

### Proposed changes to existing condition

6.144 In the 2010 WBA Statement, we required BT to include information relating to network components and usage factors in the reference offer. In this review we propose to remove this specific obligation, on the basis that we no longer consider that this information is required in order to assist CPs in monitoring for potential anti-competitive behaviour by BT, or to provide transparency that would allow CPs to make better informed decisions regarding purchasing interconnect circuits.

## Legal tests

6.145 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it requires that terms and conditions are published allowing competing providers the ability to ensure they are receiving offers that do not unduly discriminate in favour of BT's own retail operations therefore ensuring that competition develops to the benefit of consumers. In particular, the reference offer will enable operators to make full and effective use of network access;
- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;
- proportionate in that only information that is necessary to ensure that there is no material adverse effect on competition is required to be provided; and
- transparent as it is clear the obligation is designed to ensure that potential competitors have sufficient information to make investment decisions about entry into this market.

6.146 We have considered our duties under section 3, and all the Community requirements set out in section 4, of the 2003 Act.

6.147 The publication of a reference offer would secure freedom of choice for wholesale customers of BT and would mean that other CPs would have the necessary information readily available to allow them to make informed decisions about future entry into the market. It would also, in combination with a requirement not to discriminate unduly, facilitate service interoperability and secure freedom of choice for the customers of CPs. Further, the proposed obligation would promote the interests of purchasers of WBA by enabling them to adjust their downstream offerings in competition with BT, in response to changes in BT's terms and conditions. Finally, the proposed obligation would make it easier for Ofcom and BT's competitors to monitor any instances of discrimination.

6.148 Therefore, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition in accordance with section 3 of the 2003 Act.

6.149 Further, we consider that the proposed condition meets the Community requirements set out in section 4 of the 2003 Act. In particular it 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 internet access services.

6.150 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objectives “Transparency” (BP21 and BP22); “Reasonable quality of access product – technical issues” (BP23 and BP24); “Reasonable quality of access product – operational quality” (BP25 and BP26).

6.151 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement to notify charges, terms and conditions

6.152 Section 87(6)(b) of the 2003 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 for the purpose of securing transparency. Section 87 (6)(c) of the 2003 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).

#### Aim of regulation

6.153 The notification of charges, terms and conditions at the wholesale level has two main purposes:

- first, it allows CPs to consider whether these changes require amendments to their own retail offerings; and
- second, it assists transparency for the monitoring of potential anti-competitive behaviour and to give advanced warning of changes to competing providers purchasing wholesale access services, facilitating service interoperability and securing freedom of choice for the customers of CPs.

6.154 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 less likely.

6.155 We consider that it is appropriate to impose a requirement on BT as a result of its SMP 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. This would then create a ‘ripple effect’ that passes any wholesale changes down to end-users.

#### Legal tests

6.156 The proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that general and reliable visibility of a dominant operator’s charges, terms and conditions is needed to enable competitors to set charges, terms and conditions for their services that are based on purchasing the regulated inputs and it also allows Ofcom and competitors to monitor BT’s charges, terms and conditions for possible anti-competitive behaviour;
- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;

- proportionate in that a 28 day notification period achieves the purpose of allowing other CPs a sufficiently long period to plan for changes to charges, terms and conditions and to adjust their own offerings, whilst not being unduly burdensome for BT;

- transparent as it is clear the intention is to ensure that BT notifies those who purchase its services of changes to charges, terms and conditions.

6.157 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the 2003 Act.

6.158 The proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition, in accordance with section 3 of the 2003 Act.

6.159 The proposed condition meets the Community requirements set out in section 4 of the 2003 Act. In particular the proposed condition 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.

6.160 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective “Transparency” (BP21 and BP22).

6.161 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement to publish technical information

6.162 Section 87(6)(c) of the 2003 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 2003 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 for the purpose of securing transparency.

#### Aim of regulation

6.163 We consider that in Market A, BT should be required to publish any new or modified technical characteristics, points of network access and technical standards at least 90 days in advance of BT either entering into a contract to provide new network access or making technical changes to existing network access unless Ofcom consents otherwise.

6.164 The main benefit of this in wholesale markets is that other CPs could ensure that their systems are interoperable with any changes to technical specifications that would be likely to affect their business.

Legal tests

6.165 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it enables competing operators to make full and effective use of network access; the period allows CPs time to react to proposed changes without imposing an unnecessarily long notification period on BT that may restrict their ability to develop and deploy new features or products;

- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;

- proportionate in that in most circumstances 90 days is the minimum period necessary to allow competing providers to modify their networks and any extension would be required only where it was reasonable to do so;

- transparent in that it is clear in its intention that BT notifies technical information.

6.166 We have considered our duties under section 3 of the 2003 Act. We consider that, by ensuring that CPs' are given sufficient time to make any changes to technical specifications likely to affect their businesses, the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition.

6.167 We have also considered the Community requirements as set out in section 4 of the 2003 Act. We consider the proposed 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 internet access services.

6.168 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective "Transparency" (BP21 and BP22).

6.169 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

## Transparency as to quality of service

6.170 Section 87(6)(b) of the 2003 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.

Aim of regulation

6.171 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.

6.172 In light of this, Ofcom considers that it is appropriate to impose a requirement on BT, as a result of its SMP, to publish information related to transparency as to quality of service. The main benefit of this in wholesale markets is that other CPs could ensure that the service they receive from BT is equitable to that provided by BT to its own retail divisions.

6.173 The obligation will require BT to publish information as directed by Ofcom, rather than requiring BT to publish specific information from the date of the imposition of the obligation. This is the same as the condition imposed in previous reviews.

## Legal tests

6.174 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition 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 unduly discriminated against and where concerns arise about quality of service provided by BT, it allows Ofcom to react quickly to impose additional transparency requirements;

- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;

- proportionate as it only requires BT to publish information as directed by Ofcom in line with the aim of this obligation; and

- transparent in that it is clear that the intention of the condition is to require BT to publish quality of service information, as directed from time to time.

6.175 We consider that, in ensuring the network access that third party CPs receive from BT is equal to that provided by BT to its own retail divisions, the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition in accordance with section 3 of the 2003 Act.

6.176 Further, we consider that the proposed condition meets the Community requirements in section 4 of the 2003 Act and 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.

6.177 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective “Transparency” (BP21 and BP22).

6.178 We have considered whether we should impose a requirement on BT to provide Key Performance Indicators (KPIs). In reaching our view, we have taken utmost account of BP27 of the BEREC Common Position on WBA, as well as due account of the draft Recommendation on non-discrimination (see, for example, paragraphs 19 to 26). These provide that NRAs should impose a generic requirement on SMP operators to provide KPIs as a means to monitor compliance with a non discrimination obligation.

6.179 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.

6.180 The transparency as to quality of service obligation we are imposing allows for the imposition of such reporting requirements on BT, where they are warranted. We do not consider they are warranted at present, as BT currently provides its WBA services 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.[264] As such, we would 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.

6.181 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement to account separately

6.182 Sections 87(7) and 87(8) of the 2003 Act authorise 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.

#### Aim of regulation

6.183 We consider that it is appropriate to impose a requirement on BT to account separately for internal and external 'sales' of WBA services which allows Ofcom and third party CPs to monitor BT's activities to ensure that it does not discriminate in favour of its own downstream business and to monitor profitability.

#### Legal tests

6.184 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it ensures the obligation to not unduly discriminate is met which provides a safeguard to prevent BT from favouring its own retail business to the disadvantage of its competitors;

- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;

- proportionate as it is necessary as a mechanism to allow Ofcom and third parties to monitor potentially discriminatory behaviour by BT in Market A;

[264] 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.

- transparent as it is clear the intention is to monitor compliance with specific remedies and the particular accounting separation requirements of BT are clearly documented.

6.185 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the 2003 Act. In particular, the imposition of an accounting separation 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 an accounting separation obligation will ensure that obligations designed to curb potentially damaging leverage of market power can be effectively monitored and enforced. In addition the imposition of an accounting separation obligation would allow Ofcom to monitor the profitability of BT in Market A.

6.186 For these reasons, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition in accordance with section 3 of the 2003 Act.

6.187 Further, we consider that, under section 4 of the 2003 Act, the proposed 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.

6.188 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Charge control and cost accounting

6.189 We set out in Section 7 the aim of regulation and legal tests in respect of the charge control and cost accounting obligations we are proposing to impose on BT in Market A.

## Market B

6.190 As set out in Section 5, we are proposing to find that no operator holds a position of SMP in Market B. Where a market has been found to be competitive, the framework requires that no remedies be imposed or maintained and any existing SMP remedies imposed in previous reviews be withdrawn, subject to an appropriate notice period.

6.191 In the 2010 WBA Statement, we identified 349 exchanges that moved from Market 1 or Market 2 to Market 3. In these exchanges, we removed regulation as per the framework but imposed a period of notice of 12 months during which BT would continue to be required to provide network access on reasonable request to its existing customers in these exchanges.

6.192 The objective of this period of notice was to provide existing WBA customers of BT with sufficient time to make alternative arrangements for their customers so as to avoid consumer detriment.

6.193 In the period since the last review was concluded, LLU roll-out has progressed. As such, 827 exchanges that were in Market 1 or Market 2 at the time of the 2010 WBA Statement would fall within the definition of Market B as proposed in this consultation. We will further update the allocation of exchanges to Markets A and B based on updated information prior to our final statement in this market review.

6.194 In relation to these exchanges, we have considered whether a period of notice should be imposed, similar to that in the last review. We do not consider that this is necessary. The reason for this is that POs seeking network access are already likely to have commercial arrangements with BT for the supply of WBA products in exchanges in de-regulated areas and so it is unlikely that any CPs will need a significant period to renegotiate contracts for supply in these specific exchanges.

## Remedies considered – the Hull Area

### Assessment of competition problems in the Hull Area

6.195 As set out in Section 5, we propose to find that KCOM has SMP in the Hull Area throughout the next market review period. We consider that the competition problems in the Hull Area are broadly the same as those in Market A and that national and EU competition law remedies would be insufficient to address those competition problems. Our reasoning is the same as that discussed above with regard to BT in Market A. As such we do not repeat it here.

6.196 Given our view, an absence of regulation would be unlikely to result in the development of effective competition in downstream services (in terms of price, roll-out, service quality and product differentiation). Other providers would be unlikely to enter to provide downstream services as they would require access to be provided by KCOM and, in the absence of regulation, KCOM would have little incentive to provide services to them. The consequence of this would be a restriction of competition in the Hull Area and in the provision of downstream broadband services.

6.197 In light of our market analysis, in particular our SMP assessment and our assessment of the insufficiency of national and EU competition law remedies to address the competition problems we have identified, we consider that, over the course of the review period, competition would be ineffective in the Hull Area. In order to address the competition problems we now turn to our assessment of the appropriate remedies.

### General access, non-discrimination and transparency obligations

KCOM response to the 2012 WBA Call for Inputs

6.198 KCOM said that, despite the current remedies, it has experienced limited uptake of WBA products by competing providers in the Hull Area. It argued that this is mainly linked to the small size of the market in question and the ability of alternative providers to quickly and efficiently deploy alternative means of connecting customers, e.g. fixed wireless access. It said it would not be an efficient solution in the Hull market to impose specific access remedies, but did not object to the imposition of general access remedies.

Our proposals

6.199 Whilst we have not seen any significant entry into the Hull Area based on provision of services based on KCOM's regulated wholesale offers, we consider it is important that these offers are available on non-discriminatory terms so that, should another provider wish to enter the market, they are able to compete with KCOM in the downstream retail market.

6.200 Because of this, for the same reasons discussed in relation to Market A, we propose to impose the following general access and non-discrimination obligations on KCOM:

- 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.

### Price controls

KCOM response to the 2012 WBA Call for Inputs

6.201 KCOM said it is unlikely that a charge control and/or cost orientation obligation would encourage other operators to enter the market and that it would impose additional regulatory obligations and costs in respect of services for which there is currently no proven demand.

6.202 KCOM told us that it had announced plans for a fibre access network deployment in the Hull Area, and that it would be concerned if we proposed any pricing obligations in this market, as this would undermine investment incentives as well as having an adverse impact on competition.

Our proposals

6.203 In addition to the general remedies set out above, we have considered the appropriateness of imposing price controls on KCOM. In Hull, there is unlikely to be LLU roll-out due to the very small size of the market and the cost to each LLU operator of establishing processes and systems that interface with KCOM. It does not appear to us that the lack of a charge control is a key consideration in CPs' investment decisions in relation to the Hull Area. We do not consider cost orientation/charge control remedies would be effective in promoting entry by other CPs at the retail level. There does not appear to be demand from CPs to enter the Hull market based on a wholesale broadband product from KCOM.

6.204 We are of the view 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 impose 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.

6.205 We have considered the Community requirements set out in section 4 of the 2003 Act. We consider that a condition 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 2003 Act. Section 88 allows Ofcom to impose cost orientation and charge control obligations 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 the dominant provider.

6.206 We are of the view that it is unlikely that either a cost orientation or charge control obligation will promote sustainable competition, given that third parties have not indicated to us that, in the three year forward look period of this review, they are likely to enter the market in the Hull Area.

6.207 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the 2003 Act and consider that our proposal not to impose a price control on KCOM in the Hull Area is consistent with these. In particular, we do not consider that a price control imposed in this market would act to further the interests of citizens and consumers in the relevant markets by the promotion of competition nor would it be likely to encourage the provision of network access for the purpose of securing efficiency and sustainable competition in downstream markets for electronic communications networks and services.

## Proposed conditions in the Hull Area

6.208 Based on the above, we propose the following conditions are required to address our competition concerns:

- Requirement to provide network access on reasonable request (including an obligation to provide access on fair and reasonable terms, conditions and charges);
- 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.

6.209 We discuss each of these specific conditions below.

### Requirement to provide network access on reasonable request, including an obligation to provide access on fair and reasonable terms, conditions and charges

6.210 Section 87(3) of the 2003 Act authorises Ofcom to set SMP services conditions requiring the dominant provider to provide such network access as it 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 new forms of network access are made and responded to, and for securing that conditions are complied with within the periods and at the times required by or under the conditions.

6.211 When considering the imposition of such conditions, Ofcom must have regard to the six factors set out in section 87(4) of the 2003 Act, including, inter alia, the technical and economic viability of installing other competing facilities, the feasibility of the proposed form of network access, the investment made by the person initially providing the network (taking account of any public investment made) and the need to secure effective competition (including, where it appears to Ofcom to be appropriate, economically efficient infrastructure based competition).

#### Aim of regulation

6.212 The proposed condition would require KCOM as a result of its SMP to meet reasonable requests for network access. The condition would also require KCOM to provide network access in response to such a reasonable request on fair and reasonable terms and conditions, including charges. KCOM would also be obliged to provide network access on such terms and conditions, including charges, as Ofcom may from time to time direct.

6.213 The aims and effects of a condition to provide network access in the Hull Area would be the same as those discussed above in Market A, as would the proposed condition. As such we do not repeat those discussions here.

#### Legal tests

6.214 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable as it will secure effective competition by ensuring third parties are able to require WBA where they are unable to replicate KCOM's network;
- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which we are proposing to find holds SMP in the Hull Area;
- proportionate as it is directly targeted at addressing the market power which Ofcom considers KCOM holds in this market and it does not require KCOM to provide access where it is not technically feasible or reasonable; and
- transparent in relation to what it is intended to achieve as it is clear that the intention of the proposed condition is to ensure that KCOM provides access to its networks in order to facilitate competition.

6.215 We have also taken into account the factors set out in Section 87(4) of the 2003 Act. In particular, the proposed obligation would require KCOM to meet requests that are reasonable only, by which it is meant, *inter alia*, that the terms of access are technically and economically viable, and feasible. The requirement on KCOM only to meet reasonable network access requests also ensures that due account is taken of the investment made by KCOM initially in providing the network whilst ensuring that effective competition is secured in the long term.

6.216 We are also required to ensure that the proposed condition satisfies the tests set out in section 88 of the 2003 Act as the requirement places controls on network access pricing, insofar as charges are required to be fair and reasonable.

6.217 Section 88(1)(a) of the 2003 Act requires that Ofcom must not impose price control conditions unless it appears to them 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. We have discussed above that we consider that, in the absence of price regulation requiring prices to be 'fair and reasonable', KCOM may price excessively or engage in a margin squeeze, and therefore propose that there is such a risk.

6.218 Section 88(1)(b) of the 2003 Act provides that Ofcom must not set a price control condition unless it appears to them that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end users of public electronic communications services.

6.219 We consider that fair and reasonable charges will prevent KCOM from passing on any inefficiently incurred costs to other wholesale providers through excessively high prices. In this way, this condition supports the aim of improved efficiency.

6.220 We also consider that the provision of network access on fair and reasonable terms will promote sustainable competition by ensuring that other CPs can effectively compete at the retail level. We consider this to be the appropriate approach for the purposes of conferring the greatest benefits on end users of the services.

6.221 We are also required, under Section 88(2) of the 2003 Act, to consider KCOM's investment. We believe that fair and reasonable charges will allow KCOM's costs to be taken into account and will also provide for common cost recovery. This condition is therefore an appropriate basis upon which to control KCOM's prices.

6.222 We have considered our duties under section 3 of the 2003 Act and consider that the proposed condition will further the interests of citizens and consumers in relevant markets by the promotion of competition.

6.223 We have also considered the Community requirements as set out in section 4 of the 2003 Act. We consider the proposed 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 markets for electronic communications networks and services, resulting in the maximum benefit for retail consumers of broadband internet access services.

6.224 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objectives “Assurance of access” (BP1 to BP9) and “Assurance of co-location at delivery points” (BP10).

6.225 We do not propose any remedies to reflect BP28, which states that “NRAs should impose obligations on SMP operators in order to ensure wholesale switching processes are speedy and efficient”. This is because switching between wholesale suppliers has so far not been significant in the UK. To the extent that it does occur it relies on migration processes in the upstream LLU market. Furthermore, since Market A and the Hull Area together represent only a small proportion of premises, migration processes in the competitive Market B, which we do not intend to regulate, will be the more important factor in switching.

6.226 For the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement not to unduly discriminate

6.227 Section 87(6)(a) of the 2003 Act authorises the setting of an SMP services condition requiring the dominant provider not to unduly discriminate against particular persons, or against a particular description of persons, in relation to matters connected with the provision of network access.

<u>Aim of regulation</u>

6.228 We consider that, in order to meet our objective to promote efficient and sustainable competition at the wholesale level, it is appropriate to impose a requirement on KCOM not to discriminate unduly in the provision of network access. In the absence of such a requirement, KCOM could favour its own downstream businesses which would adversely affect competition.

6.229 Based on the particular characteristics of the Hull market, we do not consider that it would be appropriate to impose a requirement on KCOM to provide network access on an EoI basis, given there is limited uptake of WBA products by competing providers in the Hull Area and given the absence of an existing EoI obligation similar to that to which BT is subject pursuant to the BT Undertakings. We therefore consider that imposing an EoI requirement as an SMP condition in the Hull Area would be unduly onerous as it would require KCOM to re-engineer existing systems and processes in order to comply with the proposed condition.

6.230 In circumstances where we rely on the proposed no undue-discrimination requirement (rather than an EoI obligation) to remedy the incentive and ability for an operator with SMP to engage in discriminatory pricing and/or non-pricing practices, we refer in particular to Chapter 3 of our Access Guidelines. In this chapter, we explain that the aim of a no undue-discrimination condition is to ensure that a vertically integrated SMP operator does not treat itself in a way that benefits itself, its subsidiaries or its partners in such a way as to have a material adverse effect on competition. Furthermore, we explain in the Access Guidelines that:

> “In order to ensure compliance with its obligations as regards non-discrimination under the AID [Access and Interconnection Directive], in general, an SMP operator should ensure that:

a) it applies equivalent conditions in equivalent circumstances to other undertakings providing equivalent services and provides services and information to others under the same conditions and of the same quality as it provides for its own services, or those of its subsidiaries or partners; and

b) it can objectively justify any differentiation."

6.231 In proposing to impose a no-undue discrimination condition on KCOM which would apply, in particular, where we consider imposing EoI to be disproportionate, we have considered the draft Recommendation on non-discrimination' which provides that:

- NRAs should ensure that the SMP operator provides wholesale inputs on at least an EOO[265] basis; and
- as a minimum, technical replicability of the SMP operator's new retail offers should be ensured.

6.232 We consider that our proposed no-undue discrimination obligation, as described above and with reference to the Access Guidelines, is consistent with the draft Recommendation on non-discrimination.

6.233 EOO requires the provision of all wholesale inputs to access seekers in a manner which is comparable, in terms of functionality and price, to those the SMP operator provides to its own downstream businesses, albeit using potentially different systems and processes. It is our view that our proposed no undue discrimination obligation is consistent with EOO in that it requires the SMP operator to provide wholesale inputs to third parties in a manner which is comparable in terms of functionality and price to those the SMP operator provides to itself. Whilst a no undue discrimination obligation does allow for the possibility of objectively justifiable differences, this is more consistent with allowing different systems and processes to be used whereas the circumstances in which an objective justification could be raised to justify the SMP operator providing wholesale inputs in a manner which is not comparable in terms of functionality and price to those the SMP operator provides to itself would be very limited. This is reinforced by the fact that the Access Guidelines make clear that there is a rebuttable presumption that a vertically integrated SMP operator discriminating in favour of its own downstream business would have a material adverse effect on competition.

6.234 We note that the draft Recommendation on non-discrimination envisages the application of a technical replicability test, whether undertaken by the SMP operator and passed to the NRA or undertaken by the NRA itself, in order that the ability of access seekers to technically replicate new retail offers of the downstream business of the SMP operator can be ensured.

6.235 With regard to KCOM, we observe that currently there is little interest amongst providers in seeking network access in the Hull Area notwithstanding that KCOM has been and (as we propose here) continues to be subject to general network access obligations. We therefore consider that it is premature to consider imposing detailed

[265] Equivalence Of Outputs (EOO) meaning the provision of wholesale inputs to access seekers in a manner, which is comparable, in terms of functionality and price, to those the SMP operator provides internally to its own downstream business e.g. it's retail arm, albeit using potentially different systems and processes.

technical replicability requirements on KCOM and, to do so, would increase the regulatory burden without any significant prospect that it would result in benefits to competition.

## Legal tests

6.236 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable as it provides a safeguard to prevent KCOM from favouring its own retail business, to the disadvantage of its competitors, and to prevent KCOM from favouring particular CPs over others who lack any available substitutes;

- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which has been provisionally found to hold SMP in the Hull Area;

- proportionate in that it would enable CPs to compete effectively with KCOM at the retail level for the benefit of consumers whilst being no more intrusive than necessary since it only prevents behaviour which is unduly discriminatory; and

- transparent in relation to what it is intended to achieve as it is clear that the intention of the proposed condition is to prevent undue discrimination.

6.237 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the 2003 Act.

6.238 In particular, as Ofcom considers that KCOM should be required to provide network access, the proposed no undue discrimination obligation would encourage the provision of network access and service interoperability for the purpose of efficiency and sustainable competition in downstream markets by ensuring that KCOM does not unduly discriminate. This is necessary to ensure that there is a competitive level playing field. As Ofcom considers that KCOM has SMP in the provision of WBA in the Hull Area, it controls a key input into a range of downstream services, principally asymmetric broadband internet access. Ofcom considers that an obligation designed to prevent undue discrimination would promote competition and the interests of consumers and maximise choice in downstream markets.

6.239 For the above reasons, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition, in accordance with section 3 of the 2003 Act.

6.240 Further, we consider that, under section 4 of the 2003 Act, the proposed 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 internet access services.

6.241 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective “Level playing field” (BP11 to BP14).

6.242 In making our proposals, we have also taken into consideration the draft EC Recommendation on non-discrimination in which the EC recommends, amongst other matters, that effective non-discrimination is best achieved by the application of EoI, where proportionate, and that where EoI is disproportionate NRAs should ensure that SMP operators provide access at least on an EOO basis. We will take due account of the final EC Recommendation in reaching our decision.

6.243 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement to publish a reference offer

6.244 Section 87(6)(b) of the 2003 Act authorises the setting of SMP services conditions which require a dominant provider to publish information for the purpose of securing transparency in such manner as Ofcom may direct. Section 87(6)(c) of the 2003 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) permits the setting of SMP services conditions requiring the dominant provider to include specified terms and conditions in the reference offer. 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 by Ofcom from time to time.

#### Aim of regulation

6.245 Ofcom considers that it is appropriate to impose a requirement on KCOM as a result of its SMP to publish a reference offer. The main terms of the reference offer are summarised above in relation to Market A. The main reasons for the publication of a reference offer 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.

6.246 The aims and effects of a condition to publish a reference offer in the Hull Area would be the same as those discussed above in Market A, as would the proposed condition. As such we do not repeat those discussions here.

#### Legal tests

6.247 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it requires that terms and conditions are published allowing competing providers the ability to ensure they are receiving offers that do not unduly discriminate in favour of KCOM's own retail operations therefore ensuring that competition develops to the benefit of consumers. In particular, the reference offer will enable operators to make full and effective use of network access;

- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which has been provisionally found to hold SMP in the Hull Area;

- proportionate in that only information that is necessary to ensure that there is no material adverse effect on competition is required to be provided; and

- transparent as it is clear the obligation is designed to ensure that potential competitors have sufficient information to make investment decisions about entry into the Hull Area.

6.248 We have considered our statutory obligations and the Community requirements set out in Sections 3 and 4 of the 2003 Act.

6.249 In particular, the proposed obligation would encourage the provision of network access and service interoperability for the purpose of securing efficiency and sustainable competition and the maximum benefit for customers of CPs. The requirement to publish a RO would, in combination with a requirement not to discriminate unduly, facilitate service interoperability and secure freedom of choice for potential wholesale customers of KCOM. Other CPs would have the necessary information readily available to allow them to make informed decisions about entry into the market. Finally, the proposed obligation would make it easier for Ofcom and KCOM's potential competitors to monitor any instances of discrimination.

6.250 For the above reasons, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition, in accordance with section 3 of the 2003 Act.

6.251 We consider the proposed condition, in accordance with section 4 of the 2003 Act, 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 internet access services.

6.252 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objectives "Transparency" (BP21 and BP22); "Reasonable quality of access product – technical issues" (BP23 and BP24); "Reasonable quality of access product – operational quality" (BP25 and BP26).

6.253 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement to notify charges, terms and conditions

6.254 Section 87(6)(b) of the 2003 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 for the purpose of securing transparency. Section 87 (6)(c) of the 2003 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).

Aim of regulation

6.255 We consider that it is appropriate to impose a requirement on KCOM as a result of its SMP 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 sufficient notice to consider whether these changes necessitate a change in their retail offerings.

6.256 The aims and effects of a condition to publish charges, terms and conditions in the Hull Area would be the same as those discussed above in Market A, as would the proposed condition. As such we do not repeat those discussions here.

Legal tests

6.257 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that general and reliable visibility of a dominant operator's prices is needed to enable competitors to set prices for their services that are based on purchasing the regulated inputs and it also allows Ofcom and competitors to monitor KCOM's prices for possible anti-competitive behaviour;

- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which has been provisionally found to hold SMP in the Hull Area;

- proportionate in that a 28 day notification period achieves the purpose of allowing other CPs a sufficiently long period to plan for changes to terms, conditions and charges and adjust their own offerings, whilst not being unduly burdensome for KCOM; and

- transparent as it is clear the intention is to ensure that KCOM notifies those who purchase its services of changes to charges, terms and conditions.

6.258 We have considered our statutory obligations and the Community requirements set out in Sections 3 and 4 of the 2003 Act.

6.259 For the above reasons, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition, in accordance with section 3 of the 2003 Act.

6.260 We consider that the proposed condition meets the Community requirements set out in section 4 of the 2003 Act. In particular the proposed condition 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 internet access services.

6.261 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective "Transparency" (BP21 and BP22).

6.262 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, under section 87(1) of the 2003 Act.

### Requirement to publish technical information

6.263 Section 87(6)(c) of the 2003 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 2003 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 for the purpose of securing transparency.

## Aim of regulation

6.264 As a result of our proposal that KCOM has SMP in the Hull Area we consider it is appropriate to require KCOM to publish any changes to technical information 90 days in advance of making such changes to existing network access unless Ofcom consents otherwise.

6.265 The aims and effects of a condition to publish technical information in the Hull Area would be the same as those discussed above in Market A, as would the proposed condition. As such we do not repeat those discussions here.

## Legal tests

6.266 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it enables competing operators to make full and effective use of network access; the period allows CPs time to react to proposed changes without imposing an unnecessarily long notification period on KCOM that may restrict their ability to develop and deploy new features or products;

- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which has been provisionally found to hold SMP in the Hull Area;

- proportionate in that in most circumstances 90 days is the minimum period necessary to allow competing providers to modify their networks and any extension would be required only where it was reasonable to do so;

- transparent in that it is clear in its intention that KCOM notifies technical information.

6.267 We have considered our duties under section 3 of the 2003 Act. We consider that, by ensuring that CPs' systems are given sufficient time to make any changes to technical specifications that would likely affect their businesses, the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition.

6.268 Ofcom has also considered the Community requirements as set out in section 4 of the 2003 Act. We consider the proposed 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 internet access services.

6.269 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective "Transparency" (BP21 and BP22).

6.270 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

## Transparency as to quality of service

6.271 Section 87(6)(b) of the 2003 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.

### Aim of regulation

6.272 We consider that it is appropriate to impose a requirement on KCOM, as a result of its SMP, to publish information related to transparency as to quality of service. The main benefit of this in wholesale markets is that other CPs could ensure that the service they receive from KCOM is equitable to that provided by KCOM to its own retail divisions. The obligation will require KCOM to publish information as directed by Ofcom, rather than requiring KCOM 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 KCOM may be discriminating in the quality of service it provides, we are of the view that it is appropriate to continue this approach.

6.273 The aims and effects of a condition to provide transparency as to quality of service in the Hull Area would be the same as those discussed above in Market A, as would the proposed condition. As such we do not repeat those discussions here.

### Legal tests

6.274 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition 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 unduly discriminated against and where concerns arise about quality of service provide by KCOM, it allows Ofcom to react quickly to impose additional transparency requirements;

- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which has been provisionally found to hold SMP in the Hull Area;

- proportionate as it only requires KCOM to publish information as directed by Ofcom in line with the aim of this obligation; and

- transparent in that it is clear that the intention of the condition is to require BT to publish quality of service information, as directed from time to time.

6.275 Ofcom has considered its duties under section 3 of the 2003 Act. We consider that, in ensuring the network access CPs receive from KCOM is equal to that provided by KCOM to its own retail divisions, the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition.

6.276 Further, we consider that the proposed condition meets the Community requirements in section 4 of the 2003 Act and 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.

6.277 In addition, we consider that the proposed condition is consistent with the BEREC Common Position on WBA, including the best practice remedies falling under the objective "Transparency" (BP21 and BP22).

6.278 We do not consider that it would be appropriate to impose a requirement on KCOM to provide KPIs, as recommended in BP27 of the BEREC Common Position on WBA and in the draft Recommendation on non-discrimination (see, for example paragraphs 19 to 26). This is because there is currently no proven demand for network access by other CPs in the Hull Area.

6.279 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Requirement to account separately

6.280 Sections 87(7) and 87(8) of the 2003 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.

#### Aim of regulation

6.281 We consider that, because of its SMP, KCOM should be required to account separately for internal and external sales to provide monitoring of its other SMP services conditions in this market, notably those requiring KCOM to not unduly discriminate.

#### Legal tests

6.282 We consider that the proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it ensures the obligation to not unduly discriminate is met, which provides a safeguard to prevent KCOM from favouring its own retail business to the disadvantage of its competitors;
- not unduly discriminatory as it is imposed on KCOM and KCOM is the only operator which has been provisionally found to hold SMP in the Hull Area;
- proportionate as it is necessary as a mechanism to allow Ofcom and third parties to monitor potentially discriminatory behaviour by KCOM in the Hull Area; and
- transparent as it is clear the intention is to monitor compliance with specific remedies and the particular accounting separation requirements of KCOM are clearly documented.[266]

6.283 We have considered our statutory obligations and the Community requirements set out in Sections 3 and 4 of the 2003 Act. In particular, the imposition of an accounting separation obligation would specifically be justifiable and proportionate to promote competition in relation to the provision of electronic communications networks and

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[266] *'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/.

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 any future customers of KCOM. This is because the imposition of an accounting separation obligation will ensure that obligations designed to prevent potentially damaging leverage of market power can be effectively monitored and enforced. In addition the imposition of an accounting separation obligation would allow Ofcom to monitor the profitability of KCOM in the Hull Area.

6.284 For the above reasons, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition, under section 3 of the 2003 Act.

6.285 We consider that, under section 4 of the 2003 Act, the proposed 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 internet access services.

6.286 For all the reasons set out above, we consider that the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

### Conclusion on proposed remedies in the Hull Area

6.287 We consider that in the absence of regulatory obligations to supply WBA, meet reasonable requests for WBA, and do so on terms that were not unduly discriminatory competition in the provision of broadband services in the Hull Area might not develop.

6.288 The proposed regulatory remedies will not, however, secure competition in the provision of downstream broadband services in the Hull Area in the event that other CPs do not consider it to be economically viable to supply customers in the Hull Area. Nonetheless, the regulatory remedies proposed would enable other CPs to enter the Hull Area and compete with KCOM, should they choose to do so.

6.289 Ofcom considers, however, that the potential for entry might be enhanced should KCOM be required to show that it does not discriminate in the level of service offered to its downstream business and other CPs in the Hull Area.

6.290 Ofcom recognises that at the present time there is no demand for a wholesale product from KCOM and as such monitoring the relative level of service offered to its downstream business and other CPs would have no meaning. Ofcom therefore considers that a proportionate remedy would only require KCOM to publish quality of service information in the event that demand was to materialise.

## Conclusion on remedies

6.291 We have set out above the general access, non-discrimination and transparency remedies we propose to impose on BT in Market A and on KCOM in the Hull Area. We set out in Section 7 the price control and cost accounting remedies we propose to impose on BT in Market A. We consider that this package of remedies is the most appropriate to address the SMP which we have identified in these markets.

## Consultation questions

***Question 6.1**: Do you agree with the general access, non-discrimination and transparency obligations we propose to impose on BT in relation to the market for WBA in Market A? If not, please explain why.*

***Question 6.2**: Do you agree with our proposal not to require a period of notice for the withdrawal of existing regulatory obligations in respect of the exchanges that move from Market 1 or Market 2 (which are currently subject to regulation) to Market B (which we are proposing not to be subject to regulation)? If not, please explain why.*

***Question 6.3**: Do you agree with the general access and non-discrimination remedies Ofcom proposes to impose on KCOM in relation to the market for WBA in the Hull Area? If not, please explain why.*

***Question 6.4**: Do you agree with Ofcom's approach to price remedies in the Hull Area? If not, please explain why.*

***Question 6.5**: Are there other remedies that, if imposed by Ofcom, would promote entry into the market in the Hull Area by other providers*

## Section 7

# Charge control framework for WBA Market A services

## Summary

7.1 In Section 6 we explain why we consider it appropriate to set a charge control for WBA services in Market A. In this Section we set out our proposals on the framework for the charge control.

7.2 We propose to impose a CPI-X charge control on the up to 8Mbit/s services (i.e. IPstream Connect Max and IPstream Connect Max Premium) within Market A. Charge controlling these products directly provides the most appropriate protection to consumers in Market A.

7.3 We propose a single basket control with sub-caps on certain services within the basket to address our specific competition concerns.

7.4 Compared to previous reviews, we have adopted a simpler approach to our charge control model, based on an anchor pricing approach and modelling end user rental and contracted bandwidth volumes. We have taken this approach given the particular uncertainties in this market and the relatively small size of the regulated market.

7.5 Our charge control model has produced a plausible range of X values of -10% to +0%. We propose a base case range of -7% to -1%. This range reflects the uncertainties surrounding the assumptions we have made.

7.6 Details of the charge control basket and sub-caps are set out in Table 7.1.

**Table 7.1: Summary of the charge control proposals[267]**

| Basket | Services within scope | Main control | Sub-caps |
|---|---|---|---|
| IPstream Connect | IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access – Connection | CPI + X, where X is between -7% and -1% | |
| | IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access – Rental | | CPI +(X + 6) |
| | IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access - IPstream Connect EU bandwidth charge per month | | |

[267] This table refers to the services as currently being named in Section 44: Wholesale Broadband Services, Part 8: BT IPstream Connect of BT Wholesale's website (https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm). The description of services included in the charge control is in Annex 6.

| Basket | Services within scope | Main control | Sub-caps |
|---|---|---|---|
| | IPstream Connect Contracted Bandwidth per Mbit/s per node rental | | CPI +(X + 3) |
| | IPstream Connect End User Re-grade | | CPI +(X + 6) |
| | IPstream Connect End User Migration[268] | | CPI +(X + 6) |
| | IPstream Connect ADSL Cancellation | | CPI +(X + 6) |
| | IPstream Connect Communication Provider (CP) Handover | | |
| | IPstream Connect 20C Interconnect Links 1Gbit/s and 10Gbit/s | | |
| **Cease** | IPstream Connect Max and Max Premium (up to 8Mbit/s) End User Access - Cease | Cease charge set to £0 | |

## Introduction

7.7 Having identified a risk of excessive pricing in Market A in our market analysis, we consider that a charge control condition should be imposed for the next market review period.

7.8 The main objective of the charge control will be to prevent BT from setting excessive charges for WBA services in Market A. In addition, given our statutory duties and our market analysis findings, the charge control will also seek to provide incentives for BT to increase its efficiency, promote efficient and sustainable competition, allow for investment and innovation, allow for appropriate cost recovery and provide regulatory certainty for BT and its customers, avoiding undue disruption.

7.9 In this chapter we set out our proposals for:

- The proposed form of the charge control;
- The proposed duration of the charge control;
- The approach to designing the charge control;
- The products we propose to charge control;
- The appropriate basket structure;
- The approach to determining base year costs;
- The approach to forecasting costs for the duration of the charge control; and
- The approach to calculating the level of the charge control and sub-caps.

[268] IPstream Connect End User Migration is also known as IPstream Connect End User Transfer.

# Responses to the 2012 WBA Call for Inputs

## Charge control

7.10 In the 2010 WBA Statement we decided that BT's services in Market 1 (as defined therein) should be subject to a charge control in order to restrict BT's ability to charge excessive prices to CPs which would ultimately be passed on to consumers. The details of the charge control were considered in a further consultation published in January 2011 and finalised in the 2011 WBA Charge Control Statement. This was the first time that we had imposed a cost orientation obligation and a charge control in the WBA market. We imposed these obligations in order to ensure that other CPs would have the opportunity to use wholesale products supplied by BT to compete effectively at the retail level.

7.11 In the 2012 WBA Call for Inputs, we asked stakeholders to provide us with their views on the effectiveness of the current charge control remedy and on the need to impose a charge control in this review in the event that we find that one or more CPs have SMP in the WBA market.

7.12 A number of CPs (Vodafone, EE, FCS, TalkTalk and Virgin Media) supported the effectiveness of the current charge control in Market 1, and suggested that a charge control remedy should be imposed in the future in the event that SMP is found.

7.13 Contrary to that view, BT questioned the proportionality of a charge control remedy, arguing that the explicit modelling of services in such a small area could be subject to large fluctuations in the unit costs due to the small level of volumes when compared against the costs that need to be recovered.

7.14 Sky did not explicitly comment on the need for a charge control, but mentioned that, in the event that we proceed with setting a charge control, a fibre-based MEA approach is unlikely to be justified. It considered that a more appropriate approach would be one based on the costs of the technology that entrants actually deploy. It also said that our anchor pricing approach to the currently applicable charge control remedy is also unsuitable as it adopts a hypothetical ongoing model of BT's legacy network, even though, in reality, it is largely depreciated.

7.15 EE told us that the charge control remedy should not continue to be limited to regulation of IPstream only, but must be technology-neutral and be interpreted broadly enough to capture all wholesale broadband products which currently exist, including WBC, or which could be developed at some point during the next charge control period. This argument was supported by FCS, which also argued that as the adoption of fibre based products at the retail level grows, it will be necessary for Ofcom to consider a charge control for Openreach's NGA products.

7.16 EE also supported the view that BT must be obliged to pass through to its WBA customers any changes in the prices charged to it by Openreach for BT's regulated upstream input services, with regard to all WBA products and all geographic sub-markets.

## Cost orientation

7.17 BT said that we should refrain from combining a safeguard cap (or other form of charge control) with a cost orientation obligation as this could end up creating overlapping and overly complex and intrusive regulation.

7.18 Sky told us that where there is a likelihood that a charge control remedy will expire before the next one starts or where the relevant clauses are insufficient to prevent excessive pricing, it would be proportionate to maintain a cost orientation remedy.

7.19 Virgin Media, along with FCS, was of the opinion that we should continue to impose a cost orientation remedy in markets where SMP is identified.

## Form of the charge control

7.20 We have considered the relative merits of the available options for a charge control in Market A: an Inflation-X cap, cost-plus (or rate of return) regulation or a retail-minus rule.

### Inflation minus X cap

7.21 Under an Inflation-X price cap, the price a dominant provider can charge for a regulated product/service is subject to a price cap, whereby the annual allowed increase in price is capped to the value of inflation plus or minus X%. The X is intended to reflect expected gains in efficiency in excess of the average gains across the rest of the economy.[269] So, if the dominant firm faces a control of Inflation minus a positive value of X, this means that in real terms the price of the regulated service will fall over the period of the charge control.

7.22 Inflation-X regulation has historically been used by Ofcom (and before that Oftel) to set both retail and wholesale charge controls. It has been used across other regulated sectors in the UK. Its familiarity to stakeholders means that its use enhances the transparency of the charge control. Also, once the value of X is determined, Inflation-X provides an "arms-length" method of regulating price increases, as regulatory approval for price changes within the cap is not required.

7.23 This flexibility can be enhanced by the use of baskets, under which the required price change is weighted across the price changes of the services in the basket. This means that within a basket, prices can go up and down, as long as the net price change of the overall basket meets the required cap. This flexibility is desirable because the ability to change relative prices so that they are more reflective of costs is consistent with promoting efficiency.

7.24 However, given the incentive structure of Inflation-X regulation, it can also result in a significant divergence of prices from actual costs and the possibility of a period of high profits or losses for the dominant firm. This is allocatively inefficient and creates potential distributional concerns. The risk of this will increase the longer the charge control, and/or if a value of X is incorrectly set (i.e. is set too low in the case of high ex post profits or set too high in the case of losses). Correspondingly, a short charge control reduces the dominant firm's investment incentives because its costs will be re-assessed, say, on an annual basis with the possibility that efficiency savings result immediately in lower prices. This may induce the dominant firm to maintain profitability by lowering costs through a reduction in service quality, which is an undesirable outcome for end users.

[269] This is because if we expected the dominant firm's possible efficiency gains to be the same as in the rest of the economy then there would be no justification for a decrease in relative price.

## Cost-plus regulation

7.25 Under cost-plus regulation the rate of return that the dominant firm can earn from selling the regulated product is capped. Charges are set equal to actual costs plus a reasonable mark-up (on a forecast basis). Typically under cost-plus regulation the charges are set for each year of the control.

7.26 Cost-plus regulation acts to stabilise the rate of return of the dominant firm. Any upside or downside impact on demand or costs are borne by customers, and the firm receives a return regardless of its operating conditions. This stability can encourage investment. The yearly rebasing of the rates also provides flexibility and should ensure that over the period of the charge control there is no wide divergence between costs and revenues.

7.27 There are a number of drawbacks to this approach. A key concern is that it has poor incentive properties. The setting of a guaranteed return means that the dominant firm will obtain the same level of profitability regardless of level of costs incurred, limiting the incentives for innovation and cost reduction. Since any changes in underlying costs are immediately passed on to customers, this could also result in large fluctuations in prices faced by consumers. In effect, this form of regulation places relatively less weight on consumer protection and more on ensuring service availability and delivery.

7.28 Cost-plus regulation can also distort the incentives and behaviour of the dominant firm in other ways. For example, if the rate of return is set higher than the firm's cost of capital, then this will encourage over-capitalisation beyond the cost-minimising level; since these investments will provide relatively high returns. A further drawback is that cost-plus regulation needs to be supported by a highly intrusive and costly regulatory structure, as a continuous scrutiny of costs is required.

7.29 In practice, most charge controls can be seen as a hybrid of Inflation-X and cost-plus regulation. We take into account the justifiable level of costs and assess what is a reasonable rate of return to be recovered through the charge control, but incorporate the incentive properties as set out under the Inflation-X approach, by setting a price cap for a period of several years. Both approaches can also encourage inefficient cost allocation, though less so under Inflation-X than cost-plus regulation. The firm has the incentive to allocate more costs to be recovered through the charge control, particularly if the firm provides both regulated and non-regulated services. As such, it is important to define the service(s) to be charge controlled and ensure that only the costs associated with charge controlled service(s) are included.

## Retail-minus rule

7.30 An alternative to the use of Inflation-X or cost-plus regulation is the retail-minus approach. This method does not set the absolute level of charges, but instead regulates the margin between the regulated charge and the relevant downstream retail price. To arrive at a wholesale charge, we would take the dominant provider's retail price (or revenue) and deduct from this a measure of retail costs including an estimate of a reasonable return. The wholesale price will be at a level which will enable other providers who are as, or more efficient than the dominant firm to compete effectively in the provision of the downstream retail product. To ensure this takes place the provision of the regulated service would be required on a non-discriminatory basis.

7.31 The use of retail-minus should provide pricing flexibility for the dominant firm while at the same time ensuring that no price discrimination/margin squeeze takes place between the downstream arm of the firm and competing providers. This should promote efficient entry at the retail level, as in order to compete with the dominant provider and cover its costs, a competing provider would have to have lower costs for the parts of the service it provides itself. In addition, because the wholesale charge does not automatically reflect changes in cost, the regulated firm will have some incentive to minimise costs at the upstream level, as they would be able to keep any realised savings.

7.32 Retail-minus can be appropriate when regulating a new and innovative market. This is because in emerging markets it is difficult to correctly assess the reasonable return on capital that should be included in any cost-based charges. In such circumstances if the rate of return is set too low then this may adversely affect the incentives to invest and innovate, thereby slowing the development of competition.

7.33 However, because retail-minus does not control the absolute level of the charges in the market, charges will not necessarily be cost-orientated. Therefore, although a set of charges based on retail-minus may ensure that only providers that are as, or more efficient than the dominant firm can provide a downstream product, it could also serve to protect the dominant provider's upstream profits. Moreover, end consumers will not necessarily face cost-reflective retail charges, and this is potentially allocatively inefficient.

7.34 Retail-minus may also not be appropriate in circumstances where market power is entrenched and effective competition is unlikely to develop, as in the absence of competitive pressure there is no external restraint on the pricing and revenues of the dominant firm. In contrast, in a market where competition is likely to develop, any excess profits earned in the short term would act as an entry signal.

### We propose an Inflation minus X type of charge control

7.35 On balance, we propose an Inflation-X charge control to set charges in Market A. This is an established and transparent mechanism which will provide sustained incentives for efficiency and innovation. Also, it provides an "arms-length" regulatory mechanism, as regulatory approval for price changes within the cap is not required. It was also the approach adopted for the 2011 WBA Charge Control.

### We propose to use CPI as the relevant inflation index

7.36 In defining an Inflation-X control it is necessary to define what measure of inflation is most appropriate.

7.37 The reason for using an inflation index in the charge control formula is to protect the regulated firm and customers from forecast error. If inflation rises by more than forecast, the Inflation-X formula protects the firm from the cap becoming tighter than intended. Similarly, if inflation rises by less than forecast, then customers do not pay more than necessary to compensate the firm for general inflationary pressures.

7.38 In the 2011 WBA Charge Control Statement we decided that RPI was the appropriate index to use. However in January 2013 the Office for National Statistics (ONS) announced the outcome of its October 2012 consultation on RPI, in which it concluded that the RPI "does not meet international standards and recommended that a new index be published".[270]

7.39 Given the long-standing use of RPI in this and other areas of telecommunications charge controls, the recent findings and announcements by the ONS have prompted us to consider afresh the use of RPI in these charge controls.

7.40 We present our analysis of the issues in Annex 12 by considering certain factors: official status of the index; cost causality; exogeneity; availability of independent forecasts; and regulatory predictability.

7.41 We propose to use CPI as the inflation index for this charge control.

### We propose an upstream input CPI-X approach

7.42 As discussed in Section 2, a WBA service is made up of three elements: the end user access, backhaul and handover. BT is structured in such a way that its upstream division (Openreach) provides various inputs when delivering its WBA services. Some of these Openreach inputs are services that are themselves subject to a charge control.

7.43 For example, BT's WBA products are based on SMPF and BT is required to self-supply SMPF on the same terms as those available to other CPs. These rental and connection charges are therefore input costs that BT's WBA products need to recover. However, the SMPF charges are themselves subject to separate charge control conditions. These charge controlled input costs from Openreach are called "EOI charges" within BT's RFS.[271]

7.44 BT's 2012 RFS shows the percentage EOI charges make up of the total costs in WBA Markets 1 and 2 increased in 2011/12. The 2011/12 results report EOI charges in bandwidth services, whereas there were none in 2010/11. EOI charges now account for around 30%[272] of WBA end-user rentals unit costs and 10-15%[273] of WBA bandwidth costs.

7.45 In the 2011 WBA Charge Control Consultation[274] we proposed two options for modelling costs for the charge control and how we take into account upstream regulation:

- Option 1 – End to end approach: Model the end to end costs for the WBA cost components in the SMP area. This would result in costs that were specific to the SMP area.

- Option 2 – Upstream input approach: Use the charges from the upstream charge control (i.e. Openreach input charges) as inputs to modelling the WBA costs. This would reflect the regulated charges that BT Wholesale is charged for the upstream inputs from Openreach.

[270] http://www.ons.gov.uk/ons/rel/mro/news-release/rpirecommendations/rpinewsrelease.html
[271] For example page 75 of BT's 2011/12 RFS shows the EOI input unit costs for various services in WBA Market 1 in 2010/11.
[272] See page 75 of BT's 2011/12 RFS.
[273] See page 75 of BT's 2011/12 RFS.
[274] Proposals for WBA charge control, Consultation document and draft notification of decision on charge control in WBA Market 1, 20 January 2011.

7.46 In the 2011 WBA Charge Control Statement we concluded that we should use the upstream input approach. Those stakeholders that responded on this point agreed with our proposal. BT agreed that the upstream input approach was the most practical way to implement a charge control in Market 1.

7.47 As in the 2011 WBA Charge Control Statement, it would not be practical to use WBA market-specific Openreach costs with the upstream input approach. We regulate Openreach's charges on a national average basis and therefore it would be inconsistent to use Market A specific costs in the case of WBA.

7.48 Given stakeholder responses to the 2011 WBA Charge Control Consultation, and that the scope of EOI charges has increased, we propose to continue with the upstream input approach. This will ensure consistency between the upstream charges and the charge control.

7.49 As noted above, BT's reporting of EOI charges is evolving. In particular we will need to consider how EOI charges should be reflected in the compliance formulae that are included in the charge control condition in the relevant legal instrument and we would welcome stakeholders' views on this point in their responses to this consultation.

## Duration of charge control

7.50 We propose a three-year duration for the WBA charge control. This is because, first, it allows us to synchronise the charge control remedy with the next market review period, which starts on 1 April 2014 and ends on 31 March 2017. The European Framework prescribes that market reviews should normally be undertaken by national regulators every three years.[275] As SMP remedies can only be set in relation to a market review, the amendment to the Framework Directive also implies that charge controls should normally be set for a period of no more than three years.

7.51 Second, a three-year period provides appropriate efficiency incentives. Efficiency is partly about producing things as cheaply as possible, which is termed 'productive efficiency'. It is also about ensuring that the right combinations of goods and services are produced given the tastes and preferences of consumers and citizens. This type of efficiency is termed 'allocative efficiency'. The third type of efficiency is 'dynamic efficiency' – this essentially means that companies are encouraged to engage in investment and innovation. In assessing options for durations for this charge control, we have considered the balance between incentives for dynamic efficiency for the regulated firm, and the benefits of allocative efficiency.

7.52 Dynamic efficiency concerns the ability of firms to innovate and make efficient investments, including activities designed to reduce costs over time. Price caps generally provide strong incentives for dynamic efficiency because they allow regulated firms to earn profits in excess of the cost of capital if they are able to manage costs below the level assumed in setting the formula which regulates prices. These incentives can drive innovation and investment. Other things being equal, incentives for dynamic efficiency will be stronger when the charge control duration is longer, as a longer period gives the firm a greater incentive to enhance its profitability through innovation and cost reduction.

7.53 In designing a charge control, incentives for dynamic efficiency must be considered alongside the benefits of allocative efficiency. Allocative efficiency is achieved when

[275] Article 19(6) of the Framework Directive, as amended.

prices are aligned with underlying resource costs. As explained above, prices can diverge from costs over the life of a price cap if the costs of price-capped services deviate from the projections used to set the CPI-X control. However, in establishing price caps, regulators are able to ensure that allocative efficiency objectives are also met through the review mechanism and periodic setting of new controls. Hence price caps, if set correctly, have built-in safeguards for both dynamic and allocative efficiency.

7.54 We do not believe that a duration of three years will unduly disrupt the balance between dynamic and allocative efficiency effects.

## Approach to charge control design

7.55 We have followed six steps in designing the charge control:

- Step 1: Identify the appropriate charge control scope and structure;
- Step 2: Determine our overall modelling approach;
- Step 3: Determine base year costs for the services for the duration of the charge control;
- Step 4: Forecast the costs of the services for the duration of the charge control;
- Step 5: Consider the need for one-off adjustments to starting charges; and
- Step 6: Calculate the value of X for the proposed basket(s) of services.

7.56 In the sections below we discuss the charge control design principles which support each of the five steps listed above. We have included detailed description of these steps in Annexes 11 and 12.

## Step 1: Identify the appropriate charge control scope and structure

### We propose to control an up to 8Mbit/s service(s)

7.57 Currently, BT offers the following WBA products:

i) DataStream: a legacy service based on asynchronous transfer mode (ATM). From 30 June 2012, no new end user connections have been supported and BT has announced this product will be retired in due course.[276]

ii) IPstream Connect Max and IPstream Connect Max Premium services: IP-based services with a theoretical maximum downstream speed of 8Mbit/s.

iii) WBC: an IP based service using ADSL2+ technology with a theoretical maximum downstream speed of 24Mbit/s.

iv) WBC FTTx service: WBC also provides access to BT's NGA deployments, providing services over Fibre to Cabinet (FTTC) with a headline speed of up to 80Mbit/s and Fibre to Premise (FTTP) with a headline speed of up to 330Mbit/s download.

[276] https://www.btwholesale.com/pages/static/Products/Broadband/BT_Datastream/index.htm

7.58 WBC FTTx was offered in Market 1 (as defined in the 2010 WBA Statement) in 2011/12, but the volumes were very small. Table 7.2 below sets out the current volumes and shares for the remaining services in Market 1 as reported in BT's 2012 RFS.

**Table 7.2: WBA product volumes and shares in WBA Market 1 for year ending 31 March 2012**

| Product | Volumes | Share |
|---|---|---|
| DataStream | 3,578 | 0% |
| IPstream Connect | 2,205,140 | 100% |
| Wholesale Broadband Connect ADSL | [✂] | 0% |

Source: BT[277]

7.59 We need to set the control so that it will protect all consumers in Market A, where SMP has been found. EE told us that the charge control remedy should not continue to be limited to regulation of IPstream only, but should be technology-neutral and be interpreted broadly enough to capture all wholesale broadband products which currently exist, including WBC, or which could be developed at some point during the next charge control period.

7.60 However, protecting all consumers within the market does not necessarily mean that all service variants need to be directly controlled. We can achieve our objective by controlling the service that is most widely used within Market A – other services will be constrained through a chain of substitution. As shown in Table 7.2, IPstream Connect is currently used the most in Market 1, and we consider that, given the overlap between Market 1 and Market A, IPstream Connect is likely to be the most widely used product in Market A.

7.61 We have considered whether the charge control should also cover WBC, as BT has told us it is considering its approach to the remaining exchanges in Market 1, and may deploy WBC or may maintain IPstream with some upgrades or network refresh. Where it deploys WBC, it may seek, within the timeframe of the review, to remove IPstream.

7.62 In our view, given the uncertainty over the roll-out of WBC and withdrawal of IPstream in Market A during the next market review period, it would not be appropriate for the charge control to cover WBC. We consider that any competition concerns regarding excessive pricing of WBC would be addressed through the charge control on IPstream and the proposed requirement for BT to provide network access on reasonable request, which would include an obligation to provide access on fair and reasonable terms, conditions and charges.

7.63 While BT may make some commercial deployments of WBC FTTx services in Market A, we would expect that any such deployment would primarily be based on BDUK

[277] DataStream and IPstream volumes from BT RFS 2011/12, p75, WBC ADSL/ADSL2+ volumes from schedule AFI 21, Additional Financial Information provided to Ofcom as part of BT's regulatory reporting regime.

state aid funding. This creates further uncertainty in relation to the product mix likely to be available by the end of the control period (2017). The state funding being offered in certain rural areas for fibre roll-out means that BT (and possibly other operators) will roll out a fibre network within the period of the charge control. The timing of the BDUK roll-out is uncertain, the degree of overlap between the BDUK roll-out areas and Market A is uncertain, and the extent to which existing customers will migrate to superfast fibre services is also uncertain.

7.64 When and if BT does deploy WBC and/or WBC FTTx, it will initially do this as an overlay and keep IPstream Connect Max and Max Premium running. Over time, it is likely to seek to remove IPstream Connect Max and Max Premium. However, the scale and timeframes of any withdrawal of IPstream in Market A is uncertain. Where BT provides WBC and WBC FTTX services in Market A, these will be subject to the obligation that they are provided on fair and reasonable terms and conditions, including charges. Where IPstream Connect Max and Max Premium are withdrawn in Market A, consumers should not be made worse off by the removal of the existing product. Rather, in this situation BT would be required to provide an equivalent (or better) product, to IPstream, at a price that complies with the charge control.

7.65 We therefore propose to apply a charge control directly to the IPstream Connect Max and Max Premium products.

7.66 With regard to the points made by Vodafone and FCS on the need for regulation of Openreach's NGA products (see paragraph 6.31), we do not consider a charge control per se on NGA products is necessary, given that it is not clear there is any significant deployment of VULA handover points in Market A. However, to the extent that an NGA-based WBA product is the only product provided from a Market A exchange, BT would need to ensure a service is offered that is compliant with the charge control.

## Ancillary services

7.67 In addition to the main service charge for IPstream Connect Max and IPstream Connect Max Premium, there are further ancillary charges to be paid when purchasing WBA services.

7.68 For the 2011 WBA Charge Control, the relevant WBA ancillary charges were split by:

- Any BT charge specific to the WBA market without an associated Openreach charge, and
- Any charge where BT applies a mark-up above the charges set by Openreach.

7.69 Charges where BT passes through Openreach charges with no mark-up were excluded from the scope of the control (for example Special Fault Investigations). As in 2011 we are considering these Openreach charges as part of the LLU and WLR charge controls. To the extent that BT continues to pass these charges through without a mark-up, it is not necessary to include them in the WBA charge control.

7.70 Of the relevant ancillary services, the broadband availability checker charge was also excluded from the control. The WBA product allows use of the checker free of charge up to a quota. We believed that any usage above the set quota (which CPs considered was required to allow them to use the service on a reasonable basis), should in the first instance be discussed with BT. We continue to believe that this is appropriate and therefore propose to exclude use of the checker above the quota from the charge control.

7.71 Finally, in the 2011 WBA Charge Control we set cease charges to £0. A cease is incurred when a CP requests BT to terminate a WBA service. We reconsider this cease charge below at paragraphs 7.91 to 7.93.

7.72 Therefore, we propose that the ancillary service charges that should be controlled by the charge control are those set out in Table 7.3 below. These are the same ancillary service charges that were controlled under the 2011 WBA Charge Control.

**Table 7.3: The relevant ancillary service charges**

| Ancillary service | Description |
|---|---|
| **End user Migration Charges**[278] | End user migrates from one Customer to another w/o change of product and speed. Available to all BT IPstream ADSL end users.<br><br>End user migrates from one customer to another with change of product and speed. Available to all BT IPstream product family end users. A single charge is raised (re-grade and migration).<br><br>When an end user requests a change of product - this will be subject to a re-grade order, subsequent and separate to the migration order. |
| **End User Re-grade Charges** | Re-grade charges for IPstream Connect are applicable when end users move from IPstream Connect Max to Max Premium service (and vice versa). |
| **End User Cancellation Charges** | Where a customer requests cancellation of an End User Access order, as defined within the Conditions of Service, a one-off Single Payment Charge will be levied. The charge will be calculated on the number of Working Days between the date the Customer requests the cancellation and the Original Delivery Date (ODD). ODD is the initial agreed installation date. |
| **Communication Provider (CP) Handover** | Charges for any services related to the connection by the communication provider to IPstream, such service currently being known as IPstream Connect Communications Provider (CP) Handover. |
| **20C Interconnection Links 1Gbit/s and 10Gbit/s** | Charges for any service provided by BT to connect between any of the handover points for IPstream and the communication provider's network, such service currently being known as IPstream Connect Interconnect Links. |

278 Migration Charges are currently known as Transfer Charges in BT's current Price List (https://www.btwholesale.com/pages/static/Library/Pricing_and_Contractual_Information/Part_8_BT_IPstream_Connect/index.htm).

### We propose to control the relevant services in one basket

7.73 Having identified the appropriate services to include in the charge control, we now consider the proposed design of the charge control basket(s).

Generally we prefer wider baskets

7.74 Where there is a set of services we propose to control, it is generally efficient to reflect differences in demand (especially the responsiveness of demand to prices) or costs in relative prices. BT is generally better placed than Ofcom to do this. In particular, there may be costs which are common across a number of different services, including those that are outside the WBA market.

7.75 If we were going to apply separate controls, we would have to decide an efficient allocation of common costs. This would require extensive analysis based on detailed information on the costs and demand for individual services. This is not likely to be a practical or desirable proposition.

7.76 In addition, controlling all the different products separately would reduce BT's ability to respond, for example, to unanticipated changes in relative costs or in the demand for services. This suggests that, by providing greater pricing flexibility, the use of wider baskets may lead to more efficient pricing.

7.77 We believe it is appropriate to apply the charge control in the least interventionist way, consistent with our regulatory objectives. In instances where we are controlling different types of services, applying separate controls is likely to result in a complex set of charge control arrangements and might disproportionately constrain BT's ability to price efficiently. This is further complicated in cases where there are different types of charge associated with each service, for example, connection and rental charges apply for both IPstream Connect Max and Max Premium products.

7.78 With this in mind, our general preference would be to combine services into wider baskets unless there are good reasons not to do so.

We propose a single basket

7.79 In light of the above, we believe that it is appropriate to control all the relevant services within a single basket. A single basket approach was adopted for the same services in the 2011 WBA Charge Control. There do not appear to have been significant developments within the market that would suggest a different approach should be adopted now.

7.80 We propose a single basket structure because:

i) We do not believe that there are significant differences in competitive conditions between any of the services, all of which are required to provide retail broadband products. Where there are differences we propose to use sub-caps to reduce the scope for anti-competitive pricing (see below);

ii) If we were to apply separate controls we would need to decide an efficient allocation of common costs. This would not be proportionate given our approach to this charge control. This is discussed below (at paragraph 7.104 to 7.109).

iii) A single basket approach provides increased flexibility to BT over how it recovers costs. In particular, it will have flexibility over how to recover the end user access and bandwidth charges. BT could maintain a higher contracted bandwidth charge by offsetting a large reduction in end user access (EUA) charges with smaller reductions in bandwidth charges. This will provide BT with the necessary flexibility to set the contracted bandwidth charge to manage the rate of take-up of higher bandwidth services.

### We propose to constrain the prices of some individual services

7.81 We propose also to constrain the prices of some of the services in the basket on an individual basis.

7.82 BT's pricing structure for IPstream Connect is such that the end user rental charge (for the End User Access service component) and the contracted bandwidth charge (for the backhaul component) make up the bulk of the charge paid by CPs. We propose to control these two charges on an individual basis.

7.83 Some pricing flexibility is beneficial, as noted above. But we need to set some limits on this flexibility, to prevent it being used to distort competition. We expect growth in bandwidth per user significantly to exceed growth in the number of users. With prior year weights (discussed below in paragraph 7.94 to 7.96), this would imply an incentive to make reductions primarily to the rental charge, whose weight in the basket we expect to fall over time. Therefore, to limit this flexibility to an appropriate level, we propose an individual price constraint on the contracted bandwidth charge.

7.84 Given the greater incentive to increase bandwidth charges, we do not expect the rental charge to increase significantly. In the first two years of the 2011 WBA Charge Control, BT only made modest changes to its rental charge, though it has increased it by approximately 15% in July 2013. We therefore propose a less restrictive constraint on rental charges, as a safeguard.

7.85 There is still a need to apply individual price constraints to some of the ancillary services, namely end user migration, re-grade and cancellation for end user access charges given their particular significance for downstream competition in the market. For example, a large increase in the cost of migration charges may discourage migration, impeding the competitive process.

#### We propose to use sub-caps for certain charges in the basket

7.86 Having proposed an Inflation-X charge control, there are two main approaches to constraining individual prices:

- Sub-caps; and / or
- A cost orientation obligation.[279]

7.87 Under the 2011 WBA Charge Control we imposed sub-caps on the contracted bandwidth charge and some of the ancillary charges, namely end user migration, re-grade and cancellation for end user access charges. We also put in place a cost orientation obligation on all the services offered within Market 1.

[279] In Section 6, we considered the need for a cost orientation obligation as a general remedy on a standalone basis. Here we consider whether to use a cost orientation obligation or sub-caps as a complement to the overall charge control.

7.88 We propose to use sub-caps rather than a cost orientation obligation since we consider this to be appropriate and proportionate in light of our competition concerns in this market for the following reasons:

- Sub-caps can be more targeted than a service-by-service cost orientation obligation. In this market we have a relatively small number of products, so we are able to design a set of targeted sub-caps to tackle our competition concerns in relation to the specific services.

- Sub-caps will provide more certainty than a cost orientation obligation in this market. They are clearly defined by the control formulae, simple to understand and do not require a detailed knowledge of BT's costs to make projections in relation to the path of prices or to monitor compliance. This difference is illustrated by the significant fluctuations in BT's reported cost figures in its RFS. For example, the FAC and DSAC for external bandwidth services in Market 1 decreased by 53% and 43% respectively from 2011 to 2012 (the only two years for which BT has reported separate geographic markets).[280]

7.89 We have also considered Sky's view that a cost orientation obligation should be imposed where there is a likelihood that a charge control remedy will expire before the next one starts. We would ordinarily aim to complete our next market review before the end of the current market review period. It would be disproportionate to impose an additional cost orientation obligation solely to address the possibility of this aim not being met.

7.90 We propose to apply sub-caps to the following charges:

- Contracted bandwidth charges;

- End user access rental charges;

- Certain ancillary services – namely end user migration, re-grade and cancellation for end user access charges.

## Cease charges

7.91 We propose that the cease charge should continue to be set to £0, as under the 2011 Charge Control. It remains desirable to keep cease charges to a minimum in order to keep down the cost of switching between operators and cease charges (rather than other switching charges) are more likely to be passed on to retail customers than charges which are related to customers joining a CP.

7.92 The service is a data-only change in BT Wholesale's systems which incurs minimal or no marginal activity on the part of BTW, although in some cases Openreach may be required to remove the SMPF jumpers which support the underlying SMPF service. The costs incurred by BTW, other than any charges levied by Openreach, will therefore also be minimal. In addition, any cease costs incurred by BTW (other than charges levied by Openreach) may then be recovered through other charges within the charge control basket.

[280] BT's 2012 RFS pages 75 to 80, http://www.btplc.com/Thegroup/RegulatoryandPublicaffairs/Financialstatements/2012/RFS_2012.pdf.

7.93 Maintaining the cease charge at £0 continues to be consistent with Ofcom's proposals for future MPF and SMPF cease charges in the 2013 LLU WLR Charge Control Consultation.

### We propose to use prior year weights

7.94 The proposed charge control on BT will limit the weighted average increase in BT's charges to a maximum of Inflation-X. Under a basket approach it is necessary to calculate the basket weights that are used in the calculation of the values of X and to assess BT's compliance with the controls. Regulators who have applied this form of control have generally used one of two main methods of calculating these weights: "prior year revenue weights" or "current year revenue weights".

7.95 Under the prior-year weighting approach, basket weights are set equal to the proportions of basket revenues accruing to the relevant services in the year prior to the one in which the price change occurs. Under the current year weighting approach, the weights are set equal to the proportion of current year basket revenues accounted for by each service as a proportion of total current year revenues. A current year weighted control may take the form of a control on average revenue (total revenues divided by total service volumes).

7.96 Ofcom has generally preferred prior year weighting, and in the 2011 WBA Charge Control we used the 'prior year revenue weight' method. This is primarily because current year weights cannot be calculated with certainty until after the end of the price control year in which compliance is being assessed, because current year revenues will only be known with a significant time lag. This means that, to decide how far to reduce prices, the firm has to make forecasts of weights, with the consequential need for retrospective adjustment for forecast errors. By contrast, a prior year weighted control relies on revenue information which is already known when setting prices to comply with the control. We therefore propose to continue to use prior year weights.

## Step 2: Determine our overall modelling approach

### There are significant input assumption uncertainties

7.97 There is always uncertainty in deriving the value of X in any charge control, given the nature of the input assumptions. However, there are factors which make the normal projections particularly difficult on this occasion, increasing the uncertainty of the input assumptions. These are discussed below.

<u>End user bandwidth requirements</u>

7.98 Revenues and costs are highly sensitive to bandwidth forecasts, given that a very large proportion of BT's WBA revenues are generated by contracted bandwidth. Furthermore, there is a wide range of plausible forecasts for bandwidth requirements (although this was also a concern when we set a charge control last time).

7.99 Increases in demand for contracted bandwidth drive increases in the costs of provision of bandwidth services (i.e. an increase in component and operating costs). In the 2011 WBA Charge Control Statement we forecast this increase in costs on a unit cost basis using the existing technology. However, with end user bandwidth continuing to grow it is not clear that the existing technology could deliver these higher levels of bandwidth throughput in the future. This might suggest a model based on new technology (for example using ADSL2+ and Ethernet backhaul) would be more appropriate.

End user volumes

7.100 Fibre-based services may roll out to a significant proportion of Market A during the charge control period, based on BDUK funding. However, the precise location and extent of roll-out are unclear, as is the extent of take-up. Any take-up of fibre-based services provided on BDUK funded roll-out would reduce end users volumes on BT's IPstream products in the WBA market.

7.101 There may also be a relationship between BDUK roll-out and bandwidth requirements. End users that have higher bandwidth requirements may be more likely to move to fibre-based services, leaving users with lower demand on the legacy services. This could be more significant in Market A areas where technical limitations on speeds of copper-based services might be more significant.

7.102 In other charge controls, we have adopted an anchor pricing approach to deal with uncertainty arising from technological change. However, it is not clear that it is appropriate to treat BDUK fibre in this way as it is state-funded roll-out which does not represent an incumbent's commercial decision to upgrade technology. This is discussed further in paragraph 7.114.

Market size cost curve

7.103 Unit costs rise steeply as the number of users per exchange decline due to the high fixed cost per exchange, and as distance-dependent bandwidth costs rise due to the increasing relative remoteness of exchanges. Market A is smaller than Market 1 and has smaller average exchange sizes and a higher proportion of remote exchanges. This introduces particular challenges to the task of allocating costs across different geographic areas.

### We have taken a simplified approach to the modelling

7.104 The approach that we are proposing is less complex than the approach we took in the 2011 WBA Charge Control. We are using a simpler set of data, at a higher level of aggregation. In the 2011 WBA Charge Control Statement we used a bottom-up approach to assess DSLAM and bandwidth costs on a per exchange basis. In this market review we have started from BT's reported costs instead.

7.105 It would be possible to produce a more detailed model, as previously. However, this would require additional work which would not add significantly to our confidence in the overall result. Some of the assumptions that have the greatest impact on the outcome are also those which it is least possible to render more 'accurate' through additional work. These are particularly the volume assumptions, where the uncertainty results from market factors – such as the timing of roll-out and take-up of BDUK-based fibre. Any attempt to refine the value of X by a small amount by carrying out more detailed modelling in some areas would be insignificant in the context of the large variations caused by those market-driven volume assumptions.

7.106 We consider it is proportionate to design a simpler charge control model with less detail than that used for the 2011 WBA Charge Control Statement, for the following reasons:

- Uncertainty: there is always forecasting uncertainty in charge controls, but the problem is particularly acute in this market (as discussed above). A fully detailed model would be an exercise in spurious accuracy. We explore this issue further below.

- Size of the market: Market A represents less than 10% of UK premises – the highest-cost parts of the country, where LLU roll-out is either limited or non-existent.

7.107 We therefore propose to adopt a simplified model to produce a range of X values. The approach we have adopted is explained in detail in Annex 12. However, the key elements of our approach are discussed below.

## We propose to use an anchor pricing approach

7.108 We normally use either an anchor pricing or modern equivalent asset (MEA) approach to control prices.

7.109 The MEA approach sets charges on the basis of what is believed to be the most efficient available technology that performs the same function as the old technology. The MEA approach in this case would consider whether costs should be based on ADSL2+ or fibre that BT (via its WBC services) and other operators have already deployed in the competitive areas. Sky, in its second response to the 2012 WBA Call for Inputs, told us that it supported this MEA approach in Market 1 as this is the technology that LLU providers use to unbundle exchanges.

7.110 Basing our charge control on ADSL2+ / Ethernet technology presents some significant challenges in this market.

- It is somewhat unclear whether a copper access network using ADSL2+ or a fibre network is the most efficient technology in Market A. It is likely that some of these areas will move straight from ADSL to fibre, while others might move from ADSL to ADSL2+.

- There has been relatively little roll-out of WBC or fibre technology in Market A, so there is little data on which to base costs for any MEA modelling exercise. Unit costs will be higher in Market A than in Market B. The number of customers at each exchange will be much smaller and the exchanges are more remote. Estimating the cost curve based on little data would be very difficult.

- We would need to consider how, if it all, the costs of the newer technology should be compared to the older technology (for example how the greater functionality should be abated).

7.111 Instead we propose an anchor pricing approach. Under anchor pricing, the price of existing services is ‘anchored’ by the legacy technology, even if the services are actually provided over new technology. Consumers should not be made worse off as a result of the SMP operator changing the technology that it uses to provide the service.

7.112 Anchor pricing has good incentive properties. It allows the dominant provider the flexibility to charge more to reflect any enhanced functionality of the new service. In turn, this creates the incentive for the investment required to advance service characteristics which are directly related to customers’ willingness to pay for improvements in quality.

7.113 Under anchor pricing, we assume all BT's customers are supplied via existing ADSL technology, as delivered currently via BT's IPstream services. We model volumes to take account of BT's aggregate volume growth within the market, without distinguishing between different technologies.

7.114 However, we need to consider how to handle fibre. Where fibre services are rolled out in Market A, it will be as a result of state funding in the form of BDUK. If this were BT's own commercial deployment, the anchor pricing approach might suggest we would include volumes for BT provided WBA services over fibre, but remove volumes where other CPs purchased an upstream input (i.e. VULA) based on fibre. However, BDUK is an external event, very different from a normal commercial decision on whether to invest in new technology by BT. In addition, as explained in Section 4, these customers are likely to be served by fibre deployed from Market B exchanges either by other providers based on VULA, or by BT itself but from Market B exchanges. Either way they are no longer on BT's WBA Market A network. As such we remove them from our forecast volumes.

7.115 The anchor pricing approach is not without its own uncertainties:

- There is uncertainty as a result of BT's announced closure of IPstream services at a large number of Market B exchanges prior to the end of the current charge control period. IPstream is currently a national service so it is difficult to assess how much of the current cost base might be appropriate to serve a significantly smaller base in the future.

- The costs of meeting any further demand for bandwidth growth are hard to predict even under an anchor pricing approach due to the lumpiness of investment costs and lower handling capacity of older assets.

7.116 Despite those uncertainties, difficulties associated with calculating an anchor pricing-based charge control are less than those involved with using an MEA. Anchor pricing at least allows us to base our model on BT's reported costs, whereas the MEA would involve modelling a network that does not exist yet in all but a small part of Market A.

7.117 Cost forecasting for WBA services using an anchor pricing approach has a number of implications:

- The WBA model is based on BT's existing 20CN costs (IPstream based service revenue and costs) in Market A. This is the current technology in use in the majority of Market A. For cost modelling purposes we exclude the costs associated with 21CN investment as well as any transition costs and 21CN revenue.

- As we are assuming that the current technology in use will be used for the duration of the charge control, we are modelling a hypothetical ongoing network. The model is hypothetical because we assume that all traffic (excluding that carried over fibre) will be carried on the 20CN network for the duration of the charge control, and that the level of capital and operating costs are at the efficient levels that would be expected if the network were in an ongoing environment.

7.118 We are excluding BT's 21CN-based WBC services and fibre services from the scope of this charge control. However, as explained in Section 6, where BT provides WBC and WBC FTTX services in Market A, these will be subject to the obligation that they are provided on fair and reasonable terms and conditions, including charges. Where IPstream is withdrawn within Market A, consumers should not be made worse off by the removal of the existing product. The price of IPstream in Market A (where it remains) would provide a benchmark against which we (and CPs) could assess whether BT was providing the replacement services on fair and reasonable terms, conditions and charges.

## Step 3: Determine base year costs for the services for the duration of the charge control

### Using CCA FAC as our cost standard

7.119 Under a charge control, we set charges to allow BT to recover the incremental costs of service provision plus an appropriate mark-up to allow for the recovery of common costs.[281] In the context of determining the apportionment of common costs for this charge control, we propose the use of current cost accounting, fully allocated costs (CCA FAC). Under this approach, all the firm's costs are distributed among the services it provides. Under the CCA accounting convention, assets are valued and depreciated according to their current replacement cost.[282]

7.120 We select CCA FAC for the following reasons.

- The use of CCA FAC is consistent with the approach we have adopted for other recent charge controls. Consistency across the regulation of different services in BT ensures that all common costs can be recovered, whilst avoiding double recovery.

- A charge control based on CCA FAC data can be reconciled to BT's RFS, which are audited and are in the public domain.

7.121 Our use of CCA FAC was reviewed by the CC in the appeal of the 2009 WLR Charge Control Statement. In its determination, the CC found that we did not err in adopting a CCA FAC approach in that case.[283]

### We propose some adjustments to base year costs

7.122 We have based the input base year costs in our charge control model on the 2012 RFS. However, we have made some adjustments to the 2012 RFS data to ensure it provides an appropriate base from which to base our charge control model. Our adjustments can be summarised under the following categories:

- **'One-off' non-recurring cost adjustments to base year** – When using BT's 2012 RFS as the base input for the WBA charge control model, we need to ensure they represent a 'normal' steady state level of costs. Therefore we exclude 'one-off' or non-recurring costs, and conversely add in any costs which may not be included in the RFS, but should be included in order to provide steady state WBA services.

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[281] Common costs are those which arise from the provision of a group of services, but which are not incremental to the provision of any individual service.
[282] An alternative to CCA would be HCA convention, where assets are valued and depreciated according to their historical purchase cost.
[283] Competition Commission, The Carphone Warehouse Group plc v Office of Communications, Case 1149/3/3/09: http://www.competition-commission.org.uk/appeals/communications_act/wlr_determination.pdf. See, for instance, paragraph 3.161.

- **Additional asset cost adjustment (hypothetical on-going network)** – To model BT's WBA costs we employ a hypothetical ongoing network (HON) approach. By that we mean we model BT's current network, which is based on ADSL provided using DSLAMs at the local exchange and ATM/SDH backhaul technologies, as though it will continue to service the WBA market throughout the period of the control.

- **Alignment of costs with charge control model design** – We sometimes need to make adjustments to the RFS costs to reflect our modelling methodology. For this charge control we have made two adjustments. Firstly we have excluded services that we do not model. We discuss the scope of our model further at paragraph 7.126. Secondly we have considered whether we should reallocate DSLAM costs between end user rentals and bandwidth to reflect cost drivers more accurately. We have modelled two scenarios. The first allocates DSLAM costs in line with the RFS data, and the second reallocates 25% of DSLAM costs to bandwidth services on the basis of additional information provided by BT.[284]

- **Redefined market boundaries** – The proposed charge controlled market in this consultation is Market A; however the 2011/12 RFS data reflects the existing Market 1. Therefore, the 2012 RFS Market 1 data requires adjustment to reflect Market A.

7.123 BT has provided us with information on changes that it intends to make when it publishes its RFS for 2013 later this summer. We will therefore be able to take this information into account, alongside other information, in our cost estimates, and it may be appropriate to use 2013 RFS cost data for the base year in our final model. If changes in the 2013 RFS reflect changes in accounting methodologies (such as cost allocation rules) rather than changes in the underlying costs, we may need to consider if and how it is appropriate to reflect these changes in our base year costs and whether they justify a move away from the methodologies used in the calculations for this consultation.

7.124 Our consideration of each of these issues is discussed in more detail in Annex 11.

7.125 Figure 7.1 shows a reconciliation from the WBA Market 1 revenue and costs, as shown in the 2012 RFS, to the input base year costs that form the basis of our WBA charge control model. The purpose of showing this reconciliation is to highlight the effect each of the adjustments that we carry out on the 2012 RFS data has on the total revenue and total costs. The purple bar represents the total revenue in each case, the green bar represents the total costs in each case, and the red line shows the return on capital employed in each case.

- 2012 RFS – Market 1: The 2011/12 results for WBA Market 1 as reported in BT's 2012 RFS.

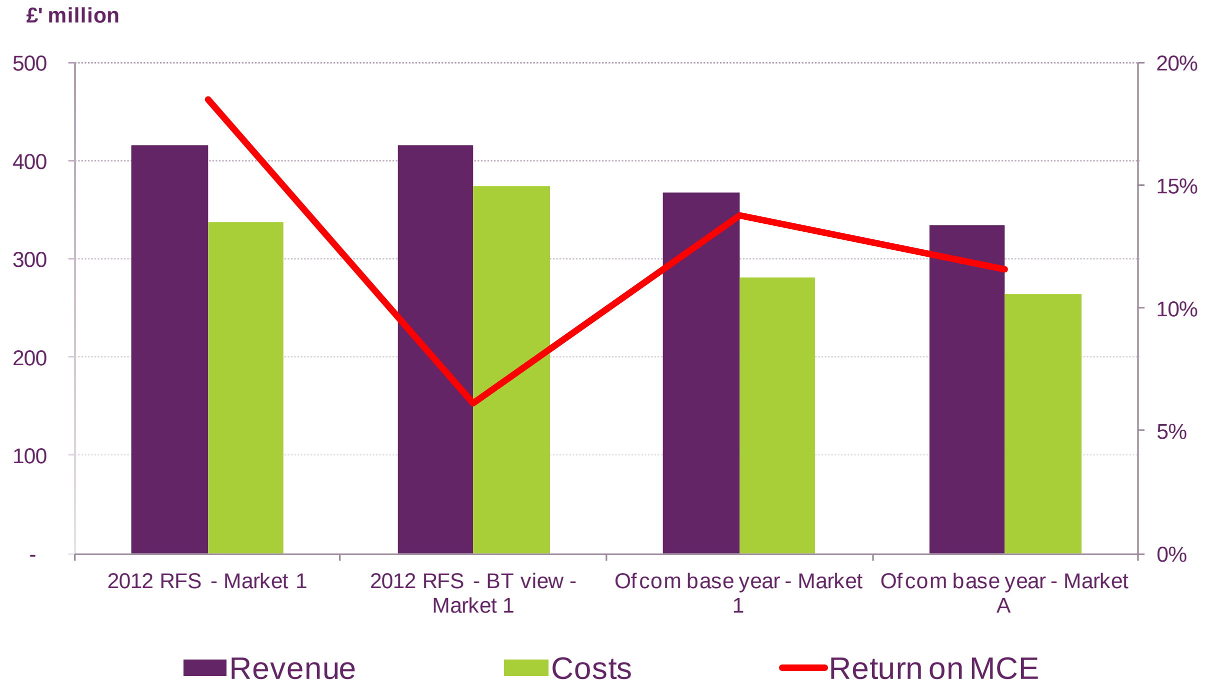
- 2012 RFS – BT View: BT submitted additional information to us on various adjustments it considered should be made to costs to reflect a more forward looking basis. These included adjustments to reflect a hypothetical ongoing network and the effect of potential restatements that it was intending to make to its RFS results.

[284] This proposed adjustment has no impact on base year costs. It only affects the allocation of costs between bandwidth services and end user rentals.

- Ofcom base year – Market 1: Our revised view of the WBA Market 1 revenue and costs relating only to the two services we are modelling. It includes the HON and ‘one-off’ non-recurring cost adjustments but not BT’s potential re-statements.

- Ofcom base year – Market A; Our view of the modelled base year revenue and costs adjusted to reflect the proposed charge controlled Market A. Market A is smaller than Market 1.

**Figure 7.1: Adjustments made to BT’s RFS to derive the base year input costs for Market A**




*Source: BT’s 2011/12 RFS and BT’s response to questions A3 and A4 of s.135 notice, 19 March 2013.*

## Step 4: Forecast the costs of the services for the duration of the charge control

### We propose to model end user rentals and contracted bandwidth only

7.126 In keeping with our simplified modelling approach, we have based the model on the two main services supplied in the WBA market: end user rentals and contracted bandwidth. These two services account for roughly 90% of the current WBA Market 1 revenue. We have not included the costs or revenues for the other services within the WBA market that make up the remaining 10% of the revenues. We do not consider it necessary or proportionate to extend the model to include all the services within the WBA market. This is discussed further in Annex 12.

### We propose volume forecasts based on end user rentals and contracted bandwidth

7.127 The calculation of the value of X is particularly sensitive to our assumptions on volume growth. As discussed above we have based our WBA model on end user rentals and bandwidth only and so forecast volumes for these services only. The forecast growth in these service volumes then drives revenues but also costs through the application of AVEs and CVEs.[285]

7.128 Our approach to deriving our volume forecasts is described in Annex 12. Our conclusions are summarised below.

<u>End user volumes</u>

7.129 We have adopted high, medium and low volume assumptions for end user volumes as shown in Table 7.4 below.

**Table 7.4: Forecasts of growth in end user rental volumes**

| | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|
| **High** | [✂] | 0.9% | 2.3% | 0.3% | -3.3% |
| **Medium** | [✂] | -0.1% | -0.8% | -5.9% | -10.5% |
| **Low** | [✂] | -0.7% | -2.3% | -9.1% | -16.5% |

*Source: 2012/13 growth derived from BT's response to question 2 of s.135 notice, 19 June 2013.*

7.130 To derive these end-user volume forecasts, we have taken particular account of BDUK-funded roll-out of fibre-based services. We have modelled the possible roll-out of BDUK funded fibre based on information on the BDUK process, and take-up,

[285] Cost and Asset volume elasticities (CVEs/AVEs) define how service costs change in response to changes in volume. The CVE defines how operating costs change, the AVE how capital costs change. An elasticity of 1 indicates that if volumes were to increase by 10% then costs would also increase by 10%, resulting in constant unit costs. An elasticity of 0.5 means that for the same 10% volume increase costs would only increase by 5% resulting in reducing unit costs.

based on our understanding of national take-up of fibre. As noted previously, the precise coverage, roll-out and take-up in Market A exchange areas is uncertain. However, as BDUK funding is likely to cover the majority of Market A, this roll-out and any subsequent take-up of the new service is likely to have a significant effect on the up to 8Mbit/s service subject to this charge control. We remove those consumers who are forecast to take services based on BDUK fibre from our WBA Market A end-user volumes.

7.131 In summary, our high growth assumption forecasts that end-user rental volumes will be broadly flat over the control period. The medium set of assumptions produces negative growth which is even more negative under our low growth assumption. These negative growth rates are driven by assumptions about the impact of BDUK take-up.

Bandwidth

7.132 Similarly, we have adopted high, medium and low volume assumptions for bandwidth volumes. First we have forecast growth in contracted bandwidth per end-user. Table 7.5 shows our assumptions.

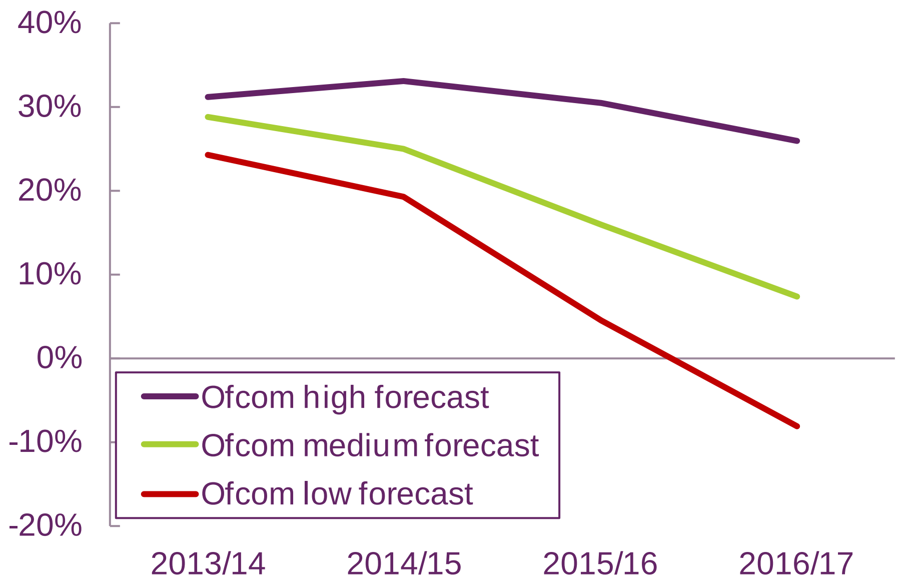
**Table 7.5: Assumptions for bandwidth volumes per end user**

| | 2012/13 | 2013/14 | 2014/15 | 2015/16 | 2016/17 |
|---|---|---|---|---|---|
| **High** | [✂] | 30% | 30% | 30% | 30% |
| **Medium** | [✂] | 29% | 26% | 23% | 20% |
| **Low** | [✂] | 25% | 20% | 15% | 10% |

*Source: 2012/13 growth derived from BT's response to question 2 of s.135 notice, 19 June 2013.*

7.133 We have then combined these with our end-user rental forecasts to give total demand for contracted bandwidth, as shown by Figure 7.2. These forecasts show a general decline in demand for contracted bandwidth, given the predicted reduction in the number of end users. Our approach to deriving our volume forecasts is described in Annex 12.

**Figure 7.2: Forecasts of growth in total bandwidth volumes**




*Source: 2012/13 growth derived from BT's response to question 2 of s.135 notice, 19 June 2013.*

7.134 In summary, we project that demand for contracted bandwidth will continue to grow, except in the final year under our low volume forecast scenario. The rate of growth is likely, however, to slow down over the market review period.

### We forecast cost requirements using asset and cost volume elasticities

7.135 Our approach to deriving our estimates of AVEs and CVEs is described in Annex 12. Table 7.6 below shows the AVEs and CVEs we use within our charge control model.

**Table 7.6: Ofcom's CVE and AVE assumptions**

| | CVE | AVE |
|---|---|---|
| **End User Rentals** | 0.82 | 0.82 |
| **Contracted Bandwidth** | 0.65 | 0.65 |

### We propose to use the "rest of BT" rate for the cost of capital assumption

7.136 We propose to use the "rest of BT" rate for the cost of capital assumption. Our consideration of this issue is discussed in more detail in Annex 12.

### We propose to assume operating cost efficiency improvements of 3.5% to 5%

7.137 To derive our efficiency improvement assumptions, we have considered:

- The assumptions used in the 2011 WBA Charge Control Statement and other recent telecoms charge controls, including the charge controls set out in the 2013 BCMR Statement and the 2012 LLU WLR Charge Control Statement. These have proposed efficiency estimates in the range 1.5-5% per annum;

- Changes to BT's unit costs as set out in the 2012 RFS. These suggest changes in unit costs well in excess of 10% last year for both bandwidth and end-user rental services; and

- BT's statements on the potential for future cost transformation.[286] BT expects to continue to make significant cost reductions over the charge control period, though it is unclear to what extent these will affect delivery of WBA services in Market A.

7.138 In keeping with our simple approach we have adopted a "low" efficiency assumption of 3.5% per annum, consistent with what was assumed in the 2011 WBA Charge Control, and a "moderate" efficiency assumption of 5% per annum, broadly consistent with assumptions in other recent charge controls. Changes in recent unit costs suggest that the scope for future efficiency savings may be higher than this. We would welcome stakeholder views on these assumptions.

## Step 5: Consider the need for one-off adjustments to starting charges

7.139 We do not propose to make any starting charge adjustments. In some cases one-off adjustments could be justified at the start of the control. Our preference in this case however is to adopt a "glide-path" approach, whereby the charge control would bring about a gradual convergence of prices and unit costs over the period of the control.

- This charge control will be replacing a similar expiring control on the same set of services. In such circumstances, we have a strong preference for glide-paths rather than one-off adjustments as it allows the firm to retain the benefits of cost reductions made under a previous charge control for longer and thus retains strong incentive properties.

- It approximates more closely the workings of a competitive market in which excess profits are gradually eroded as rivals improve their own efficiency.

- It avoids discontinuities in prices over time and leads to a more stable and predictable background against which investment and other decisions may be taken, by both suppliers and customers in the telecoms market.

## Step 6: Calculate the value of X for the proposed basket(s) of services

### The basket X is between CPI-10% and CPI+0%

7.140 We have used the WBA model to calculate a range of values of X. X is the annual percentage by which BT should reduce prices below our measure of inflation, CPI, for the services covered by this charge control for the years 2014 to 2017.

7.141 The model uses a number of assumptions that are discussed in this section and / or in Annex 11 or Annex 12. As for any charge control, many of the input assumptions are uncertain but for the reasons outlined earlier there are particular issues with this

[286] See BT Quarter 4 2013 presentation: http://www.btplc.com/Sharesandperformance/Quarterlyresults/PDFdownloads/q413_slides_update_part2.pdf.

control. The following three input assumptions are particularly uncertain and therefore we have modelled a range of input assumptions as set out below:

- **Efficiency** – we have used the moderate (5%) and low (3.5%) efficiency assumptions discussed in this section. By efficiency we mean the change in real unit costs before any economy of scale effects due to volume changes.

- **DSLAM cost allocation** – we have modelled two scenarios. The first allocates DSLAM costs in line with the RFS, under which all DSLAM costs are attributed to end-user rental services. However in the 2011 WBA Charge Control we identified that as bandwidth volumes increase so can DSLAM costs. That is because there is a limit to the backhaul capacity that can be provided from any DSLAM. As bandwidth grows, this limit can trigger the requirement to install extra DSLAMs. To allow some DSLAM costs to change as bandwidth volumes increase our second scenario reallocates 25% of DSLAM costs to bandwidth service. The 25% has been calculated from additional information provided by BT.[287]

- **Volumes** – for bandwidth growth and the number of end user rentals, we have used the high, medium, and low scenarios set out in this section.

7.142 Table 7.7 shows the resulting X values, given these different input assumption scenarios. The table shows how dependent the X values are on the assumptions selected. The range of plausible X values is -10% to 0%.

7.143 From this range we have produced our base case range, based on the following assumptions (see Annex 12 for further details):

- Efficiency gains should be set at 5.0%. This is our moderate assumption. This is reasonable given general trends in BT's efficiency over the last few years. This is higher than that assumed for the 2011 WBA Charge Control (3.5%), but our unit cost analysis suggests that a higher efficiency assumption is likely to be appropriate.

- 25% of DSLAM costs should be reallocated to bandwidth services. It is appropriate to reallocate a proportion of reported DSLAM costs from end-users to bandwidth services, in order to ensure that DSLAM costs increase in an appropriate way with bandwidth. 25% reallocation is an appropriate base assumption for such an adjustment, based on data BT has provided to us.

- We have not selected a single volume scenario but have used the range of plausible volume assumptions from high to low to generate a range of X for consultation. Volume uncertainty is a particular issue under this control, given the need to consider the impact of BDUK state-funded roll-out of fibre. However, in the absence of strong reasons to select either end of the range of plausible volume assumptions, it is likely we would adopt our medium volume scenario.

7.144 Using these input assumptions we have produced our base case range of -7% to -1% with a central case of -4% (medium volume), as set out in Table 7.7 below.

[287] BT response to question 3 of s.135 notice, 19 June 2013.

**Figure 7.7: Range of X values using different input assumption scenarios**

| Description of case | Key assumptions | | X values (under our High, Medium and Low volume assumptions) | | |
|---|---|---|---|---|---|
| | Efficiency | DSLAM reallocation | High volume | Medium volume | Low volume |
| **Moderate efficiency, no DSLAM cost reallocation** | 5.0% | 0% | -10% | -6% | -3% |
| **Low efficiency, no DSLAM cost reallocation** | 3.5% | 0% | -9% | -6% | -2% |
| **Base - Moderate efficiency, 25% DSLAM cost reallocation** | 5.0% | 25% | -7% | -4% | -1% |
| **Low efficiency, 25% DSLAM cost reallocation** | 3.5% | 25% | -6% | -3% | 0% |

## We propose to set sub-cap levels in the context of the overall control

7.145 We have proposed to apply sub-caps to contracted bandwidth, end user access rental and some ancillary services – namely end user migration, re-grade and cancellation for end user access charges.

7.146 It is important that the flexibility available to BT under the proposed charge control and sub-caps is conducive to efficient pricing and cost recovery. The single basket structure and the sub-caps need to provide BT with flexibility such that:

- It gives BT some pricing freedom to determine the structure of prices which meet the charge control. We believe that this pricing freedom is more likely to result in charges which recover costs, particularly fixed and common costs, in an efficient way.

- It allows BT to respond to changes in demand and costs by changing relative prices and re-optimising charges for new patterns of demand, in these markets which are changing rapidly.

- It allows BT to set prices to encourage efficient migration between an old service and/or technology and a new replacement alternative.

7.147 However, this flexibility also needs to be adequately constrained, such that the control and sub-caps are an effective means of addressing the risks of excessive pricing.

7.148 The level of the sub-caps can only be decided once the X value is known. We have therefore proposed sub-cap levels relative to the X value. For example, if we determine a charge control of CPI-1% (i.e. X = -1%), the sub-caps would be CPI+2%

for the contracted bandwidth charge, CPI+5% for end user access rental and the ancillary services.

7.149 The sub-caps have been targeted to address different concerns in relation to the specific services, as discussed in paragraphs 7.86 to 7.90 above. In light of the concerns we are seeking to address and using our regulatory judgement we propose sub-caps as set out in Table 7.8 below.

**Table 7.8: Proposed sub-cap levels**

| Service | Proposed sub-cap |
|---|---|
| **Contracted Bandwidth per Mbit/s per node rental** | CPI + (X + 3) |
| **End User Access Rental** | CPI + (X + 6) |
| **Ancillary services – End User Migration[288], Re-grade and Cancellation** | CPI + (X + 6) |

7.150 As explained previously, we expect growth in bandwidth per user to significantly exceed growth in the number of users. With prior year weights, this would imply an incentive to make reductions primarily to the EUA charge, whose weight in the basket we expect to fall over time. This is why the sub-cap on contracted bandwidth is more restrictive than that for the other services.

## Cost accounting

7.151 In addition to a charge control, a transparency obligation requiring BT to provide cost accounting data is appropriate in order to provide transparency of BT's costs in Market A. This will allow us and other stakeholders to monitor the effectiveness of the remedies we propose above. We propose that BT will no longer be required to publish DLRIC and DSAC information as CPs will no longer need to monitor compliance regarding cost orientation. This is consistent with our approach and reasoning on other recent decisions, for example the 2013 BCMR Statement. However, we propose BT should still be required to maintain DLRIC and DSAC data. For avoidance of doubt BT would still be required to publish FAC.

## Proposed conditions

### Charge control

7.152 Section 87(9) of the 2003 Act authorises the setting of SMP services conditions imposing on the dominant provider price controls connected with the provision of network access.

[288] End User Migration is also known as End User Transfer.

## Aim of regulation

7.153 In the absence of a charge control, BT has the ability and incentive to set prices above the competitive level in Market A. BT's wholesale competitors would then be forced to pay these high prices in order to provide retail services to their customers, who would suffer accordingly from higher retail prices. BT may also have reduced incentives to reduce costs and improve efficiency.

7.154 In order to address this, we have proposed that BT should be subject to a charge control to ensure it does not price excessively for WBA services.

7.155 Our preferred method of charge control regulation (inflation +/-X) would create incentives for the dominant provider to increase its efficiency, thereby imitating the effect of a competitive market.

## Legal tests

7.156 The proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable in that it would reduce BT's ability to charge excessive prices to consumers in a market where BT faces limited competitive and pricing constraints for WBA;
- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;
- proportionate in that we will ensure that it will allow BT to make a return on investment in Market A whilst acting to constrain BT's ability to set prices above the competitive level which may result in consumers paying higher retail prices; and
- transparent as the condition is clear in its intention to control BT's charges while creating efficiency incentives.

7.157 Section 88(1)(a) of the 2003 Act stipulates that Ofcom must not impose price control conditions unless it appears to them 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. Section 88(3) of the 2003 Act provides that there is a relevant risk of adverse effects arising from a price distortion if the dominant provider might (a) fix and maintain prices at an excessively high level, or (b) impose a price squeeze, so as to have adverse consequences for end-users of public electronic communications services. We explained above that we consider that in the absence of charge controls BT may price excessively, and therefore that there is such a risk of adverse effects.

7.158 Section 88(1)(b) of the 2003 Act provides that Ofcom must not set a price control condition unless it appears to them that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and

- conferring the greatest possible benefits on the end users of public electronic communications services.

7.159 The structure of the proposed charge control provides BT with incentives to improve efficiency, since it retains any savings from improved efficiency that reduces its costs below this level over the period of the control.

7.160 The obligation will continue to promote sustainable competition by allowing CPs to purchase network access at prices which allow them to compete effectively at the retail level. We consider this to be the appropriate approach for the purposes of conferring the greatest benefits on end users of the services.

7.161 We are also required, under Section 88(2) of the 2003 Act, to consider BT's investment in the matters to which the condition relates. We believe that the design of the charge control will allow BT's costs to be taken into account and will also provide for common cost recovery. This condition is therefore an appropriate basis upon which to control BT's prices.

7.162 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the 2003 Act. For the reasons set out above, we consider that the imposition of a charge control would in particular further the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition under section 3 of the 2003 Act. Further, we consider that, under section 4 of the 2003 Act, the proposed condition will, in particular, promote 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.

7.163 We have taken utmost account of the BEREC common position on best practice on the WBA market and due account of the NGA Recommendation and the draft Recommendation on non-discrimination and costing methodologies.

7.164 The NGA Recommendation recommends the imposition of cost orientation on mandated WBA products and, in the absence of cost orientation, a "properly specified margin-squeeze test" (Recommendations 31-38 and Recitals (33)-(39)). The proposed charge control obligation is consistent with this, as a charge control is a form of cost orientation for the purpose of the NGA Recommendation.

7.165 The BEREC common position on best practice in the WBA market provides that NRAs should put in place obligations preventing SMP operators from engaging in a margin squeeze (BP42 and BP43), but does not state that this should only occur in the absence of cost orientation. As we explain in Section 6, we propose imposing obligations requiring BT to provide network access on reasonable request, including an obligation to provide access on fair and reasonable terms, conditions and charges. We consider the requirement for charges to be fair and reasonable in addition to competition law is sufficient to address any potential concerns regarding alleged margin squeeze.

7.166 The proposed condition is consistent with the BEREC Common Position on WBA, more generally, including the best practice remedies falling under the objective "Fair and coherent access pricing" (BP34 to BP50). We have taken utmost account of the BEREC Common Position on WBA. However, with regard to best practices BP44 to BP50, we do not consider that it is appropriate to have any specific pricing remedies for NGA-bitstream products, as the deployment of WBA services over NGA in Market A during the next market review period is likely to be very small. It should be noted, however, that the general access, non-discrimination and transparency obligations we are proposing would apply to such services.

7.167 The draft Recommendation on non-discrimination (paragraphs 30 to 47) provides that NRAs should adopt a bottom-up long run incremental costs plus (BU LRIC+) costing methodology; i.e. the use of a bottom up modelling approach using LRIC as the cost model and with the addition of a mark-up for the recovery of the common costs. Whilst we note that the recommendation is still in draft, we have taken due account of it. However, for the reasons given in paragraphs 7.108 to 7.113, we consider that a simplified modelling approach, rather than a BU LRIC+ approach, is appropriate in the present circumstances.

7.168 Articles 49 and 50 of the draft Recommendation on non-discrimination state that where NRAs impose EoI obligations (with the additional obligations relating to technical and economic replicability tests[289]), price control obligations, including obligations for cost-orientation, should not be imposed on active and passive[290] NGA wholesale inputs. However there is a limited uptake of NGA products based on optical fibre in Market A. We are imposing EoI obligations on BT and these will apply to NGA-based WBC services to the extent that there are VULA handover points in Market A.

7.169 For the reasons set out above, the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

## Cost accounting

7.170 Under sections 87(9) to 87(11) and 88 of the 2003 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.

7.171 Where a charge control obligation is proposed, a cost accounting obligation requires the provider subject to the obligation to publish accounting data to demonstrate that their charges meet this obligation.

7.172 BT is required to comply with obligations governing cost accounting systems and processes as set out in the Ofcom Statement of 22 July 2004 on BT's and KCOM's regulatory financial reporting obligations.[291] The outputs relevant to this review include:

- preparation of a variety of financial statements;
- preparation of extensive supporting documentation explaining how the financial statements have been put together;

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[289] Paragraphs 15 to 23 and 53 of the draft Recommendation on non-discrimination and costing methodologies.
[290] Paragraph 50 permits price controls on passive inputs in certain circumstances.
[291] 'The regulatory financial reporting obligations on BT and Kingston Communications, Final Statement and notification: Accounting separation and cost accounting', 22 July 2004, http://stakeholders.ofcom.org.uk/binaries/consultations/fin_reporting/statement/finance_report.pdf.

- provision of an independent assurance statement;
- publication of most of the information; and
- preparation of reconciliation statements.

7.173 In the 2012 BCMR Consultation we said that we believe that where we no longer require cost orientation, BT should no longer publish DLRIC and DSAC figures (while continuing to maintain such figures). We propose we follow the same approach in relation to cost accounting for WBA. We propose to implement this amendment in the directions which implement the cost accounting conditions in our annual update of BT and KCOM's regulatory financial reporting obligations.

## Aim of regulation

7.174 It is appropriate to impose a cost accounting obligation on BT in Market A. The main benefit of this in wholesale markets is that other CPs and the regulator can monitor BT to ensure that it meets its charge control obligations.

## Legal tests

7.175 The proposed condition meets the criteria set out in section 47(2) of the 2003 Act. The proposed condition is:

- objectively justifiable because without such an obligation Ofcom and other CPs would not have access to the information needed to monitor the effectiveness of the charge control obligation;
- not unduly discriminatory as it is imposed on BT and BT is the only operator which has been provisionally found to hold SMP in Market A;
- proportionate since only information that is necessary to ensure the continuing effectiveness of charge control remedies is required to be provided; and
- transparent in that it seems to ensure we have the necessary information to support the monitoring of the effectiveness of charge control remedies.

7.176 In addition to the tests set out in Section 47(2) of the 2003 Act, we are also required to ensure that the proposed condition satisfies the tests set out in section 88 of the 2003 Act.

7.177 Section 88(1) of the 2003 Act states that Ofcom are not to set an SMP condition falling within section 87(9) except where it appears from the market analysis that there is a relevant risk of adverse pricing effects arising from price distortion and it also appears that the setting of the condition is appropriate for the purposes of:

- promoting efficiency;
- promoting sustainable competition; and
- conferring the greatest possible benefits on the end users of public electronic communications services.

7.178 Section 88(2) of the 2003 Act also requires us to take account of the extent of the investment by BT in the matters to which the condition relates when setting this type of condition.

7.179 We have identified the risk of excessive pricing by BT in Market A and consider that, by supporting transparency and reassuring stakeholders, cost accounting obligations will encourage market entry. In this way, the obligations help to promote efficiency and sustainable competition. We have also taken account of the extent of the investment of BT in the matters to which the cost accounting obligations relate.

7.180 We have considered our statutory obligations and the Community requirements set out in sections 3 and 4 of the 2003 Act.

7.181 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.

7.182 For these reasons, we consider that the proposed condition in particular furthers the interests of citizens and furthers the interests of consumers in relevant markets by the promotion of competition in accordance with section 3 of the 2003 Act.

7.183 Further, under section 4 of the 2003 Act, the proposed 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.

7.184 For all the reasons set out above, the proposed condition is appropriate to address the competition concerns identified, in accordance with section 87(1) of the 2003 Act.

## Consultation questions

***Question 7.1****: Do you agree that an Inflation-X type of control is the appropriate form of charge control?*

***Question 7.2****: Do you agree that CPI is the most appropriate inflation index?*

***Question 7.3****: Do you agree that an upstream input CPI-X approach still remains the most appropriate form of control?*

***Question 7.4****: Do you agree that a charge control duration of three years is appropriate?*

***Question 7.5****: Do you agree that IPstream Connect and the relevant ancillary services are the appropriate services to charge control?*

***Question 7.6****: Do you agree that all the services should be placed in one single basket and sub-caps applied to certain services?*

***Question 7.7****: Do you agree that the cease charge should continue to be set to £0 and excluded from the main basket?*

***Question 7.8****: Do you agree with our adjustments to BT's base year costs?*

***Question 7.9****: Do you agree to our proposed simplified modelling approach and the use of anchor pricing?*

***Question 7.10****: Do you agree with our volume assumption analysis?*

***Question 7.11****: Do you agree with our asset and cost volume elasticities assumption analysis?*

***Question 7.12****: Do you agree to the use of the "rest of BT" rate for the cost of capital assumption?*

***Question 7.13****: Do you agree to our proposed operating cost efficiency improvements of between 3.5% to 5%?*

***Question 7.14****: Do you agree with our proposal not to make one off adjustments to WBA prices at the start of the control?*

***Question 7.15****: Do you agree that the range of plausible X values is -10% to +0%?*

***Question 7.16****: Do you agree with our base case range of X values and the assumptions underlying this range?*

***Question 7.17****: Do you agree with the proposed levels of the sub-caps?*

***Question 7.18****: Do you agree with our proposals on cost accounting?*