
Three's response to Ofcom's Strategic Review of Digital Communications (discussion document)

Non-Confidential

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Executive Summary.

1. Market trends are testing the current regulatory framework

- 1.1. This is Three's response to Ofcom's Digital Communications Review (DCR), Ofcom's second major review of regulation in the sector in 10 years. The DCR is Ofcom's assessment of the extent to which the current regulatory framework remains fit for purpose, and of the reforms needed to ensure that regulation remains appropriate for the coming decade.
- 1.2. To date, the UK communications sector has been a private sector and competition success story. Robust regulation by Ofcom has enabled competition to flourish in the mobile market and has delivered some of the best mobile networks in Europe.
- 1.3. Ofcom's consultation is very timely and coincides with the European Commission's review of the regulatory frameworks for communications infrastructure and content. Both reviews stem from a recognition that the existing regulatory framework is lagging behind changes in communications markets and technology.
- 1.4. In both the EU and the UK, market developments are testing the current regulatory framework. From a mobile perspective, the most significant of these are that:
 - Mobile data consumption is exploding.
 - In a data-centric world, network quality is now a key determinant of consumer choice of MNO, and speeds are increasingly important as a key dimension of competition.
 - Continuous large-scale investment in mobile networks is now crucial for an MNO to accommodate exploding demand for data and be competitive on capacity, coverage and speeds.
 - The explosion in demand for data, increased customer expectations of quality, the trend towards convergence and new competition from non-traditional players (referred to by Ofcom as sub-national RAN operators) in mobile have changed the competitive landscape since Ofcom's last strategic review. These trends are leading to market consolidation in the UK and elsewhere.

2. A changing market requires a new approach to regulation

- 2.1. These market developments necessitate a new regulatory approach. In spite of its past successes, the existing framework is no longer fit for purpose. In particular, existing regulation has failed to address some key competitive bottlenecks at the wholesale level.

2.2. Three enduring bottlenecks have posed particular competitive challenges for Three, namely:

- an overly asymmetric distribution of mobile spectrum between MNOs;
- lack of competition in mobile backhaul, owing (in part) to the current model of functional separation of BT;
- access to sites, planning permissions, site rental costs and the much delayed reform of the Electronic Communications Code (“ECC”). The ECC, which governs the way in which MNOs access sites that host their network infrastructure, is outdated and constrains operators’ ability to expand their coverage. As this is not within Ofcom’s remit, so it will not be discussed further in this response.

2.3. Spectrum, backhaul and sites are essential inputs needed to meet the current explosion in the demand for data. They are also required for MNOs to improve network quality and provide greater coverage, capacity and speeds to their customers. In this context, Three’s submission has singled out the following key policy issues that warrant a revision of the current regulatory framework. These are:

- structural separation of BT;
- spectrum reform; and
- the regulatory implications of the trend towards convergence and bundled services.

3. Structural separation of BT

3.1. Ofcom’s 2005 review found that parts of BT’s fixed telecoms network are enduring economic bottlenecks where competition is unlikely to emerge. Ofcom concluded that other operators should have equal access to these elements of BT’s network in order to promote fair and open competition. This led to a fundamental change in regulation and the creation of Openreach, by way of legally binding undertakings provided by BT to Ofcom under the Enterprise Act 2002 on 22 September 2005

3.2. This model of regulation has enabled great successes (in particular fixed broadband competition based on local loop unbundling), but it has not been successful in delivering good quality of service to BT’s wholesale customers. In addition, the reality is that Ofcom has found it difficult to detect and constrain BT’s ability to discriminate in its favour in the provision of wholesale access to its network.

3.3. These problems will only become more acute in the future, given BT’s intention to expand into other markets (such as mobile and pay TV) and the

trend towards fixed/mobile convergence. The structural separation of BT is by far the most effective way to eliminate this unavoidable conflict of interests and ensure sufficient investment in the UK's fixed line infrastructure.

4. Spectrum reform

- 4.1. Spectrum is the single most important input in mobile. As a result of the explosion in demand for mobile data, increased consumer expectations of quality and speed and technical developments such as carrier aggregation, the distribution of spectrum between MNOs is increasingly critical for competition, investment and innovation in the mobile market.
- 4.2. The current distribution of mobile spectrum between MNOs is highly unequal due to past policy choices made by Ofcom – such as the liberalisation of 900MHz and 1800MHz spectrum and insufficient competition measures being implemented in the UK's 4G auction. In an increasingly data-centric mobile market, this situation is not sustainable for competition.
- 4.3. It is imperative that Ofcom formulates clear overarching principles for its spectrum policy that ensure that spectrum is not distributed so asymmetrically as to undermine the sustainability of future competition in the market. Ofcom must ensure that all MNOs have sufficient spectrum to compete effectively in wholesale and retail markets, and preclude MNOs with large spectrum holdings from accumulating ever larger quantities of spectrum as a way of foreclosing competition.
- 4.4. Moreover, Ofcom should better support growth in consumer demand for data by (1) making firm commitments to release spectrum to support forecast growth in traffic volumes, and (2) setting spectrum release targets in line with projected demand and measuring progress against them.

5. Regulatory implications of the trend towards convergence and bundling

- 5.1. Technological convergence between fixed, mobile and content distribution networks has blurred the boundaries between previously distinct subsectors of the communications industry. This has enabled converged operators to pursue a strategy of bundling of services in neighbouring markets. In turn, this has spurred a wave of vertical and horizontal consolidation in the UK and other European markets.
- 5.2. As Ofcom is aware, Telefonica, Deutsche Telekom and Orange have all decided to exit the UK market. Three's shareholder has recently agreed to acquire O2 UK, a wholly-owned subsidiary of Telefonica S.A. Similarly, in February 2015 BT agreed to acquire EE following exclusive discussions with Deutsche Telekom and Orange. Three is currently seeking approval

for its merger from the European Commission and has also made representations to the UK's Competition and Markets Authority in relation to the proposed BT/EE merger. For that reason, Three will not be commenting on either transaction in this response.

- 5.3. One of the effects of convergence and consolidation will be an increase in the uptake of quad-play services by consumers. Quad-play is still in its infancy in the UK. However, as the European experience illustrates, quad-play services can grow very rapidly, particularly when led by fixed providers offering aggressive discounts on mobile.
- 5.4. In that context, Ofcom should adopt a framework for regulating quad-play services as soon as possible to protect consumers and to address the significant anti-competitive risks associated with the bundling of services. In particular, Ofcom should implement measures to:
 - prevent firms from leveraging their market power into neighbouring markets for individual services – for instance, by engaging in practices like cross-subsidisation and using bundling to exclude rivals from the mobile market;
 - prohibit providers of bundled services from marketing retail bundles in a misleading way – by advertising unachievably low headline prices for popular services (such as mobile), whilst burying the much higher cost of less popular services in the small print (such as fixed line rentals).

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1. Current trends in the UK communications market.

1. Introduction

- 1.1. To date, the UK communications sector has been a private sector and competition success story. Robust regulation by Ofcom in the UK market has enabled competition and has delivered some of the best mobile networks in Europe.
- 1.2. Fortuitously, the DCR coincides with the European Commission's work on the Digital Single Market for Europe ("**DSM**")¹ – under which the Commission is proposing to review (amongst others):
 - the Common Regulatory Framework ("**CRF**") which governs the regulation of communications infrastructure and services;² and
 - the Audio-Visual Media Services Directive ("**AVMS Directive**"), which governs the broadcasting of content.³
- 1.3. The DSM review stems from the recognition that "*the communications sector has seen important technological and commercial innovations which may require a modernisation of the applicable regulatory framework*".⁴
- 1.4. In its most recent public consultation on its evaluation of the CRF,⁵ the European Commission has highlighted the following drivers of change in European markets:
 - a **slow transition from copper to fibre** which has resulted in the slower than expected rollout of fibre-based, next generation access networks ("**NGAs**"),⁶
 - more **complex competition** with the **convergence** of fixed and mobile networks;⁷
 - the rise of **retail bundles**;⁸
 - the emergence of **OTT (over the top) services**, which are not subject to the same regulatory regime as traditional voice, SMS and broadcasting services for which they are functional substitutes;⁹ and

¹ European Commission, *A digital single market strategy for Europe*, 6 May 2015, COM (2015) 192 (final), http://ec.europa.eu/priorities/digital-single-market/docs/dsm-communication_en.pdf.

² The CRF consists of the following directives (as amended): Framework Directive (2002/21/EC), Authorisation Directive (2002/20/EC), Access Directive (2002/19/EC), Universal Service Directive (2002/22/EC), Directive on Privacy and Electronic Communications (2002/58/EC).

³ Audio-Visual Media Services Directive (2010/13/EU).

⁴ European Commission, *Background document to the public consultation on the evaluation and the review of the regulatory framework for electronic communications networks and services*, 11 September 2015, paragraph I(b), <https://ec.europa.eu/eusurvey/runner/TelecomFrameworkReview2015>.

⁵ European Commission, *Public consultation on the evaluation and the review of the regulatory framework for electronic communications networks and services*, 11 September 2015, <https://ec.europa.eu/eusurvey/runner/TelecomFrameworkReview2015>.

⁶ European Commission, *Background document to the public consultation on the evaluation and the review of the regulatory framework for electronic communications networks and services*, paragraph I(b).

⁷ *Ibid.*

⁸ *Ibid.*

⁹ *Ibid.*

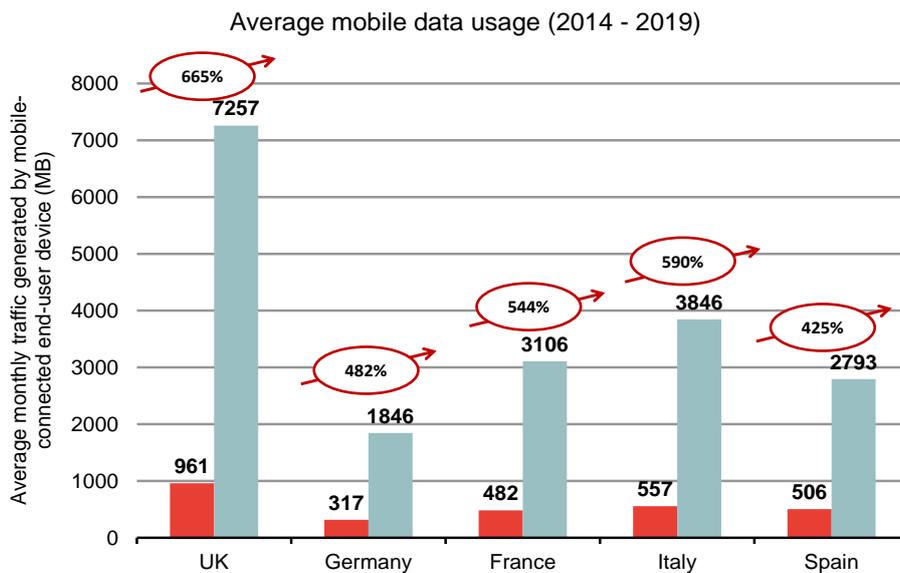
- changing end-user expectations and requirements, driven by **exploding demand for wireless data**.¹⁰
2. **Developments in markets and technology are testing the current regulatory framework**
- 2.1. Some of the trends described above were either uncertain or not envisaged at the time that the CRF and the 2003 Communications Act were drafted. As a result, some aspects of the current statutory framework need revisiting. To illustrate, the fragmentation of regulation for content and electronic communications poses some hurdles to the regulation of bundled services by Ofcom.
 - 2.2. In recognition of changes in markets and technology, the European Commission is proposing to reform the CRF and the AVMS directive, and wants to publish draft legislation by June 2016. In all likelihood, it will probably take longer to finalise the legislation and pass it into law (if the proposed reforms indeed do materialise).
 - 2.3. It is the view of Three that neither the DSM nor any perceived limitations of the existing statutory framework should discourage Ofcom from implementing robust regulatory measures to safeguard competition and to protect consumers in an ever-changing market. To do otherwise risks consigning to potential irrelevance those aspects of Ofcom's current framework that lag behind developments in technology.
 - 2.4. Moreover, where Ofcom is not confident of its powers to regulate new and emerging products and services, Ofcom should work with Government to ensure that the necessary reforms are implemented in a timely manner.
 - 2.5. Many of the trends in other European markets highlighted by the European Commission have been replicated in the UK. From a mobile perspective, the most significant of these are discussed below:
 - Mobile data consumption is exploding.
 - Network quality is now a key determinant of consumer choice of MNO, and speeds are increasingly important as a key dimension of competition.
 - Continuous large-scale investment in mobile networks is now crucial for an MNO to be competitive on coverage, capacity and speeds.
 - The explosion in demand for data and the trend towards convergence is leading to market consolidation.

¹⁰ *Ibid.*

3. Mobile data consumption is exploding

- 3.1. The UK mobile telecoms market is sophisticated and characterised by high smartphone penetration and data consumption. The UK has one of the highest mobile data usages in Europe. Data volumes carried over UK mobile networks grew 53% between 2013 and 2014. Web browsing accounts for 42% of total industry traffic and video streaming for 39%.¹¹
- 3.2. Data consumption in the UK is expected to grow more rapidly than in any other major EU member state, with an increase of 665% expected between 2014 and 2019, as illustrated by the infographic below:

Figure 1: Average mobile data usage in 2014 compared with projections for 2019



Source: Cisco

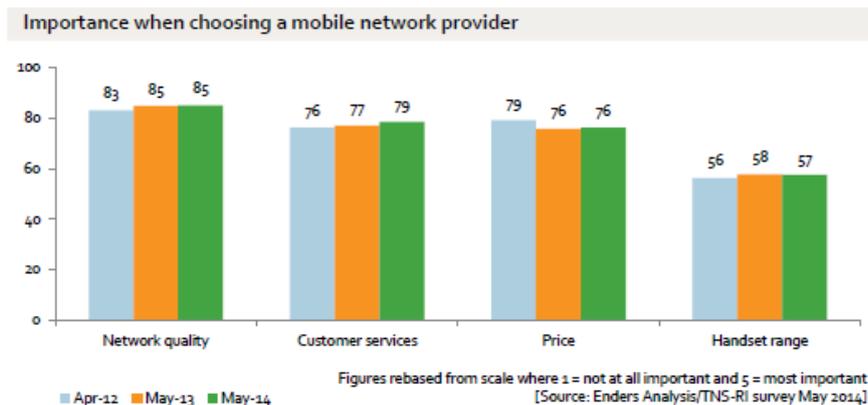
- 3.3. This explosion in the demand for data has been driven by three main factors:
 - the widespread adoption of smartphones, tablets and other internet-capable mobile devices, which generate much larger data traffic than 2G handsets;
 - customer migration from PAYG to pay monthly contracts, together with inclusion of data on monthly bundles – with contract customers much more likely to use a smartphone; and

¹¹ <http://stakeholders.ofcom.org.uk/binaries/research/infrastructure/2014/infrastructure-14.pdf>, paragraph 1.47

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- the increasing popularity of mobile applications, including video and music streaming, social networking, web browsing, e-mail, online gaming and location-based services.
- 3.4. MNOs must increasingly rely on BT's network to meet this explosion in demand for data, manage congestion and improve network speeds. MNOs must depend ever more on fibre backhaul to meet consumer expectations for fast data speeds, as fibre optic is currently the fastest and most reliable technology for backhaul.
4. **Network quality is the most important factor in consumer choice of MNO, and speeds are increasingly important as a key dimension of competition**
- 4.1. While there is strong price competition in the UK market, non-price considerations are key factors in a customer's choice of mobile provider. Traditionally, network coverage has been very important for consumers of mobile voice and text services. In a voice-centric world, coverage typically ranked first (or joint first, together with price or customer service) in most customer surveys analysing the main factors leading to choice of provider.
- 4.2. Network quality is more important for data services than it is for voice. In an increasingly data-centric mobile market, network quality means coverage, capacity and speed. A consumer survey conducted by Enders Analysis in 2014 indicates that network quality is the most important factor for consumers when choosing a mobile provider, ahead of customer services, price and handset range.

Figure 2: Network quality is now the most important factor in consumer choice of MNO



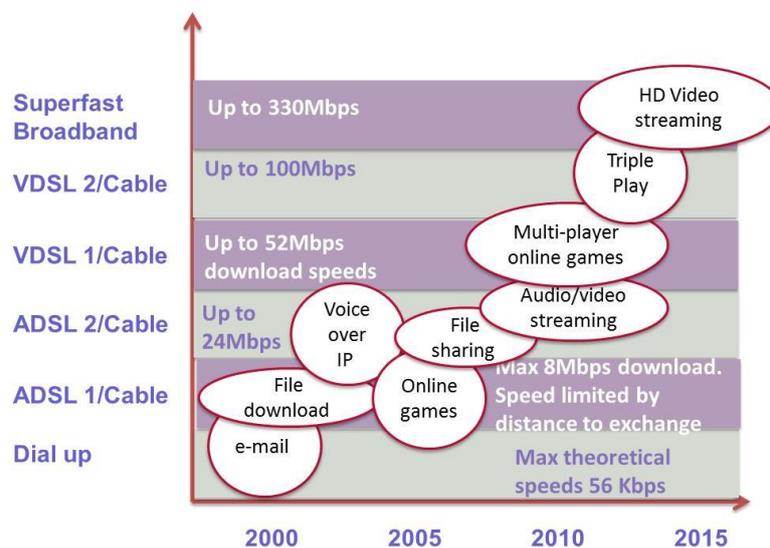
Source: Enders UK Mobile Survey 2014

- 4.3. The experience in fixed broadband illustrates likely trends in the mobile market. In fixed broadband, capacity and download speeds are now key parameters of

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competition because consumers increasingly demand services that require higher speeds to work effectively (such as video streaming). This is shown in Figure 3 below.

Figure 3: Consumers of fixed broadband increasingly demand services which require higher speeds



Source: Three

- 4.4. In the past 15 years, UK households have migrated in large numbers from lower quality services (such as dial-up internet) to faster ADSL and VDSL connections and, more recently, superfast broadband (which provides up to 330Mbps via Fibre to the Home). The fixed industry is currently developing a roadmap to 1Gbit/s speeds, commonly referred to as 'ultrafast broadband' delivered by 'G.Fast' technology and cable networks.
- 4.5. Mobile is already following a similar evolutionary path. Demand for higher quality mobile services was historically suppressed due to the limitations of 2G and 3G mobile networks, but it surfaces as soon as consumers start experiencing 4G.
- 4.6. Ofcom's 2015 Communications Market Report shows that 4G users are changing their behaviour and using much more data than 3G users. 4G subscribers are much more likely to use data hungry services such as downloading or streaming video content. Like 3G subscribers, accessing e-mail, browsing the web and social networking are the most frequent daily activities for

4G users. However, 4G subscribers carry out all of these activities much more often.¹²

- 4.7. In summary, mobile consumers increasingly demand services that require higher speeds and capacity. The trend in consumer demand is for widely available, always-connected data use. Mobile data growth will come from entertainment applications like media streaming, which already represents nearly 30% of Three's traffic (see Figure 4). To retain and attract subscribers, operators are looking to provide reliable voice and data coverage at speeds that approach those of current fixed internet connections.

Figure 4: Video streaming represents 30% of Three's traffic

30%

Source: 30%

- 4.8. In this context, carrier aggregation represents a fundamentally new technological innovation that allows MNOs to provide significantly greater speeds – by enabling devices to connect to different 4G mobile signals at the same time. 30%
5. **Continuous large-scale investment in mobile networks is now crucial for MNOs**
 - 5.1. As consumers expect higher network quality from MNOs, continuous large-scale investment in networks becomes crucial – not only to meet consumer demand for data, but for operators to remain competitive on speed.
 - 5.2. Three has invested heavily on spectrum, sites, technology and backhaul. Figure 5 shows that Three's annual capital investment 30%. Capex largely reflects the costs of upgrading and expanding Three's network to increase data speeds,

¹² <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr15/>.

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provide a more reliable service and improve coverage and capacity. Approximately 25% of Three's capex spend relates to network investment.

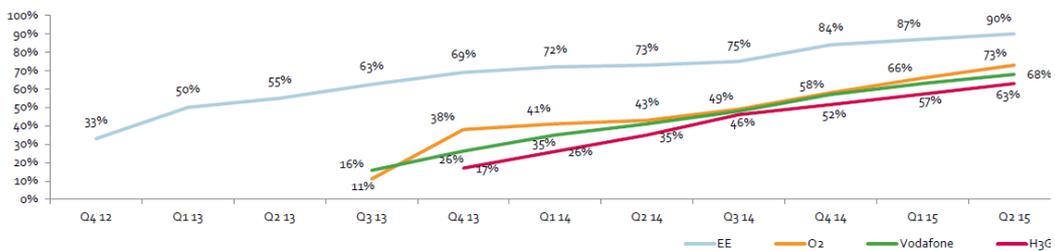
Figure 5: Three's annual capex (excluding spectrum)



Source: [Redacted]

- 5.3. In addition, Three invested £225m in the UK's 2013 spectrum auction to secure rights to 800MHz spectrum. At an industry level, MNOs collectively invested £2.4bn in order to gain access to the airwaves needed to deploy 4G technology. The industry is also planning to invest over £5.5 billion in the next few years to roll out 4G networks, which have now reached 63% - 90% population coverage (see Figure 6).

Figure 6: 4G population coverage by MNO



Source: Enders UK mobile market Q2 2015

- 5.4. The investment required to accommodate traffic growth and improve network quality is putting pressure on MNO's profits. In that context, Three is very surprised by Ofcom's conclusion that UK MNOs are earning significant returns

on their investments. Ofcom appears to ignore that Telefonica, Deutsche Telekom and Orange have recently decided exit the UK market in pursuit of more profitable opportunities elsewhere.

- 5.5. There are two major problems with Ofcom's conclusion, namely:
- Ofcom appears to have made selective adjustments to EE's statutory accounts and excluded all of EE's intangible assets to estimate a 27-28% Return on Capital Employed ("ROCE") for EE in 2012 and 2013.¹³
 - Ofcom has used EE to illustrate profitability levels within the industry, when in reality EE's ROCE does not read across to Three.

6. The explosion in demand for data, increased consumer expectations of quality and the trend towards convergence are leading to market consolidation

- 6.1. Rising demand for mobile data, greater consumer expectations of quality and the increased customer focus on fixed and mobile bundles are leading to market consolidation in the UK and in other European countries. At a European level, convergence has led to a wave of telecoms mergers, as operators seek scale to enhance capacity, coverage and the speed benefits of combining sites and spectrum, as well as helping them to compete against powerful fixed players moving into mobile markets.
- 6.2. In the UK, competitive dynamics are being transformed by the assault on the mobile market from well-established fixed line and media businesses. BT has followed Virgin's and TalkTalk's entry into mobile, with Sky to follow in 2016. These operators are entering the mobile sector with innovative models, and intend to leverage their fixed infrastructure to provide truly converged fixed/mobile services to consumers.¹⁴ Vodafone and EE have moved in the opposite direction by launching fixed broadband services in competition with traditional fixed players.
- 6.3. As Ofcom is aware, Three's shareholder has recently agreed to acquire O2 UK, a wholly-owned subsidiary of Telefonica S.A. Similarly, in February 2015 BT agreed to acquire EE following exclusive discussions with Deutsche Telekom and Orange. Three is currently seeking approval for its merger from the European Commission and has also made representations to the UK's Competition and Markets Authority in relation to the proposed BT/EE merger. For that reason, Three will not be commenting on either transaction in this response.
- 6.4. From a regulatory perspective, Ofcom will need to ensure that dominant firms are not able to leverage their market power in neighbouring markets, and so diminish consumer choice for purchasers of standalone services. Ofcom should

¹³ In particular, Ofcom appears to have excluded £9.5bn from EE's asset base by ignoring goodwill, customer relations and revaluing EE's 2.1GHz spectrum. This reduces EE's asset base and inflates the resulting ROCE. Ofcom does not seem to have made similar adjustments to EE's large 1800MHz spectrum portfolio, which does not appear in EE's balance sheet and which Ofcom has recently valued in its Annual Licence Fee Statement <http://media.ofcom.org.uk/news/2015/annual-licence-fees-mobile-spectrum/>

¹⁴ Examples include TalkTalk, BT (prior to the BT/EE merger), and potentially Virgin Media and Sky.

also prevent misleading advertising of telecoms bundles. This is discussed in in section 5 (Convergence and bundled services).

7. Structure of the remainder of this submission

7.1. The remainder of this submission will be structured as follows:

- **Section 2 – Approaches to regulation:** We consider that that there has been a trend away from ex-ante interventions and towards detailed consumer measures focused on engineering specific market outcomes.
- **Section 3 – Structural separation from BT:** Housing Openreach within the same corporate stable as the rest of BT has incentivised Openreach to discriminate in favour of BT's own downstream divisions and lowered the quality of service supplied to all market participants. The structural separation of BT is the most effective way to eliminate this unavoidable conflict of interests and ensure sufficient investment in the UK's fixed line infrastructure.
- **Section 4 – Spectrum reform:** The current distribution of mobile spectrum between MNOs is highly unequal and is not sustainable for competition in the long term. We ask Ofcom to (1) implement clear principles embodying pro-competitive measures to prevent extreme spectrum asymmetries, and (2) support growth in consumer demand for data by making firm commitments to release spectrum to support forecast growth in traffic volumes and setting spectrum release targets.
- **Section 5 – Convergence and bundled services:** We discuss that a number of powerful operators have begun selling bundled products to consumers in the UK. Ofcom must ensure that these operators cannot leverage their market power in neighbouring markets. Moreover, Ofcom can and should do more to protect consumers by mandating clarity and transparency in the advertising and pricing of retail bundles, as well as in relation to switching.
- **Section 6 – Other opportunities for better regulation:** We suggest that Ofcom should review existing rules and regulations more often, to ensure that they do not lag behind developments in technology or developments in the market – including in relation to OTT services. We also encourage Ofcom to take a proactive approach to regulation and to focus less on micro-managing outcomes.
- **Section 7 – Answers to Ofcom's questions:** Lastly, we will answer the questions posed by Ofcom in its Digital Communications Strategy discussion document.

2. Approaches to regulation.

1. Purpose of the DCR

- 1.1. The DCR is intended to examine the state of the UK's communications market and bring forward a strategic view, including potential proposals for regulatory intervention. Ofcom's aim is to ensure that the UK has a regulatory framework for communications equipped to deal with the challenges of the 21st century. The review has four key areas of focus. These are:
 - widespread availability of services (investment and return on capital);
 - competition;
 - empowering consumers with information to choose and switch;
 - targeted regulation and opportunities for deregulation.
- 1.2. Three believes that these are the right areas for regulatory focus. Our response will focus primarily on competition and investment.
- 1.3. Before doing this, we believe it is appropriate to explore what good regulation looks like, including the principles that underpin it and what it should enable. The regulatory principles we set out in this section inform the remainder of our response.

2. Current state of the UK regulatory framework

- 2.1. Ofcom's statutory duties are set out at s3(1) of the Communications Act 2003, which states:

"It shall be the principal duty of Ofcom, in carrying out their functions;

 - (a) *to further the interests of citizens in relation to communications matters; and*
 - (b) *to further the interests of consumers in relevant markets, where appropriate by promoting competition"*
- 2.2. It is clear that the development of the communications market, and mobile in particular since 2003 has been broadly positive. The UK mobile market is fiercely competitive, with strong presence of MVNOs and indirect distribution channels.
- 2.3. As a result, UK consumers benefit from some of the best value mobile telephony in Europe, with leading levels of coverage, penetration and smartphone ownership. For example, in the UK, robust competition at a network level has delivered good coverage. Over 99% of the UK population is covered by at least one mobile provider, compared to just 90% in Germany.¹⁵
- 2.4. Current levels of service and coverage have been delivered on a commercial basis by privately owned companies, without cost to the taxpayer. However, the

¹⁵ Source: Ofcom, *International Communication Market Report*, 2013, <http://stakeholders.ofcom.org.uk/market-data-research/market-data/communications-market-reports/cmr13/>.

regulatory framework for mobile which helped deliver these successes has not kept pace with market developments. This has been caused by a number of developments:

- Firstly, regulation has failed to address two competitive bottlenecks that have posed particular competitive challenges for Three, namely (1) an overly asymmetric distribution of mobile spectrum between MNOs, and (2) a lack of competition in mobile backhaul. Spectrum and backhaul are essential inputs needed to meet the current explosion in consumer demand for mobile data and to improve network quality. The current regulatory framework is not as robust as it should be in these areas.
- Secondly, Three has witnessed a trend in regulatory intervention away from *ex-ante* measures intended to support fair and open competition, towards the regulation of consumer facing outcomes. Ofcom has at times adopted a reactive and interventionist approach to the treatment of consumer issues. Three is concerned that Ofcom may be too focused on engineering specific market outcomes rather than addressing the inherent market flaws which have caused sub-optimal consumer outcomes. It is important that Ofcom strikes a better balance between addressing consumer concerns and interfering unduly in the normal operation of the market.

3. A clearer approach to regulation

- 3.1. In addition to a regulatory approach that favours *ex-ante* intervention to secure fair and open competition, and in so doing supporting future data growth, government and the regulator must set out a clear vision for the type of communications market they jointly want to deliver, as well as high level principles to frame the services that operators provide without forcing costs on networks.
- 3.2. Three believes that a clear vision for the communications market, shared by both Government and regulator, is not inconsistent with the provisions in the European Framework directive that guarantee the independence of national regulatory authorities.
- 3.3. Ofcom must not only be clear on what it wants to achieve but it must underpin this ambition with a clear set of guiding principles framing how it intends to get there. Instead, Ofcom's approach to the market can be piecemeal at times, characterised by responses to single, isolated harms, but somehow lacking a clear statement of the overarching goals it wishes to achieve.
- 3.4. A more holistic approach would give network operators a clear framework in which to plan and operate. This requires Ofcom to address and make clear in its Annual Plans and other key policy documents not just policy on specific issues, but the overarching objectives behind them. This alongside the development of a longer (five year) plan with clear timelines and delivery objectives would be one of the simplest and most effective means of delivering better outcomes for

consumers by allowing operators to plan ahead and bring forward innovative propositions to market more quickly.

4. Principles of good regulation

4.1. Linked to this, it is Three's view that there are three key principles that Ofcom should pursue in its decision making and programme delivery if it is to ensure the continued functioning of a mobile market that delivers for the wider economy and UK consumers. Three believes that these should be:

- ***To exercise regulatory forbearance in areas where competition is functioning and delivering innovation and enhanced offerings which benefit consumers.*** Competition in the mobile market to date has seen UK consumers enjoy some of the best value mobile services in Europe, as well as encouraging innovation and continued coverage improvements. Ofcom should continue to forebear from regulating where appropriate.
- ***To ensure that regulation supports these benefits.*** Ofcom should continue to monitor and make representations at every possible level to prevent unnecessary interventions with undesirable consequences for consumers.
- ***Intervene where there are market failures and where the regulator has the ability to make timely and desirable interventions to ensure fair and open competition, particularly at wholesale level.*** Ofcom has identified a number of key workstreams, including reform of switching processes and appeals, and has established a compelling body of evidence supporting both the case for consumer harm and the benefits of reform. In such areas Ofcom needs to have the conviction to pursue delivery and effective implementation.

5. Ensuring accountability

5.1. Accountability of the regulator to key stakeholders is also essential for ensuring that those stakeholders understand that the regulator is acting in good faith, and that its interventions are proportionate and represent value for money. Three is concerned that there is a lack of scrutiny around the cost of Ofcom's activities. Three funds Ofcom's activities, as do the other stakeholders. However, there is little transparency of how the funds are spent, and a lack of scrutiny by important stakeholders, most notably by Parliament. The absence of transparency around these costs makes it challenging to offer more detailed comment. However this does sit alongside a lack of scrutiny in other areas – most notably in Parliament.

5.2. Ofcom's Chief Executive currently only appears at the Culture, Media and Sport Select Committee once a year. While these Committee meetings do provide an opportunity for policy makers to ask important questions of the industry regulator, we believe this is insufficient for one of the largest regulators with responsibilities spanning across the electronic communications and broadcasting sectors.

6. Ways of working

- 6.1. Ofcom should also look again at how it engages with the industry. The DCR provides opportunity for Ofcom to consider its role, behaviours and practices as a regulator, including the historic and continuing impacts of the burden of regulation on operators and consumers.
- 6.2. In particular Ofcom needs to ensure that the regulatory framework is fit for purpose. In particular, Ofcom should not be afraid to take bold decisions on important issues, ensure that regulation remains up to date with changes in technology, and work tirelessly with government to reform legal and regulatory processes that hinder effective regulation. We discuss this in greater detail in section 6 (*Other opportunities for better regulation*) in relation to issues such as switching, over the top services and the standard of appeals against Ofcom's decisions.

3. Structural separation of BT.

1. Introduction

- 1.1. Ofcom's 2005 Telecoms Strategic Review ("TSR") found that parts of BT's fixed telecoms network are enduring economic bottlenecks where competition was unlikely to emerge. Ofcom concluded that other operators should have equality of access to those parts of BT's network in order to promote fair and open competition. This led to a fundamental change in regulation, in the form of legally binding undertakings provided by BT to Ofcom under the Enterprise Act 2002 on 22 September 2005.
- 1.2. In Three's view, although the current model has resulted in generally positive consumer outcomes, it is no longer fit for purpose. As a vertically integrated operator, Openreach has an incentive to favour BT in the provision of wholesale inputs. The reality is that, over the past 10 years, Ofcom has found it difficult to detect and constrain BT's ability to discriminate in its favour.
- 1.3. In 2005, Ofcom also hoped that equality of access would increase the quality of service BT provides to all market participants, on the basis that any deficiencies would be felt by BT itself. Ten years on, problems with quality of service linger on and have required decisive intervention by Ofcom.
- 1.4. Three believes that Ofcom should separate Openreach from the rest of BT. By far the most effective way to eliminate discrimination by BT is to remove its incentive to discriminate in the first instance, rather than to hinder BT's ability to discriminate, as Ofcom has attempted to do to date. In this section we will demonstrate that:
 - The two elements of the current regulatory model – equivalence of inputs ("Eol") and functional separation – have not been successful in removing BT's incentive and ability to discriminate.
 - BT discriminates against its downstream competitors in relation to price, quality and investment in wholesale products.
 - BT misallocates costs in order to effect regulated prices and favour BT.
 - BT favours the development of new products consumed by its own downstream divisions and supplies a better quality of service to itself.
 - Openreach's investment decisions reflect the needs of BT Group, and not necessarily those of its wholesale customers.
 - Future technological and market developments will increase BT's incentive and ability to favour itself, which will only compound these problems.
- 1.5. In essence, time and time again BT has found means to game the system. Discrimination in price, quality or investment is difficult to detect. Where Ofcom does detect it, this is typically addressed in the next market review, only for BT to find new ways around it. This model is not in the interests of competition or consumers and creates unnecessary costs for Ofcom, BT's rivals and BT itself. The structural separation of BT's access business is the most effective model of

regulation that will completely eliminate BT's incentive, and therefore is the industry model that Three supports.

2. Ofcom's 2005 TSR focussed on equality of access to fixed networks

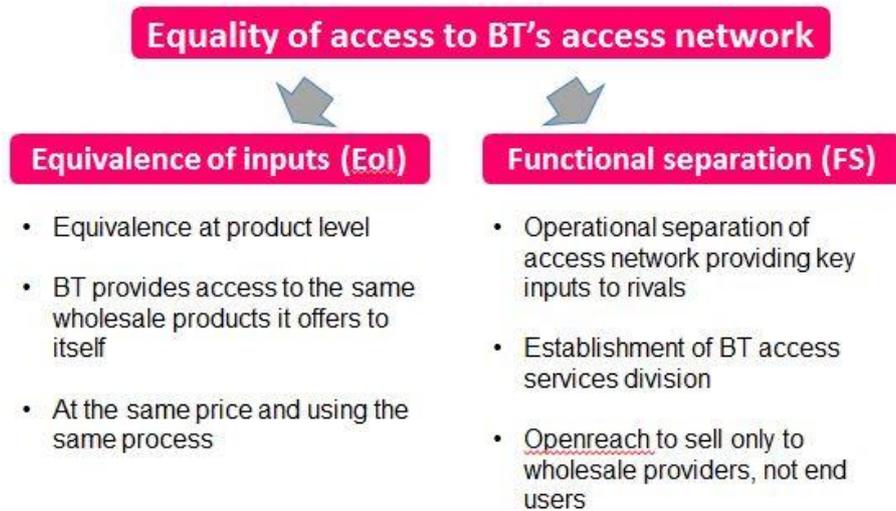
- 2.1. In its 2005 TSR Ofcom considered the type of competition that could be achieved in fixed telecoms. Due to the existence of large fixed costs and scale economies, parts of the UK's fixed access infrastructure constitute economic bottlenecks owned by a small number of suppliers. BT has enduring market power in fixed access owing to its ownership of the only ubiquitous national fixed network in the UK.
- 2.2. Ofcom then faced the problem of discrimination by BT. Operators who do not have their own access network must rely on access to BT's network in order to serve customers. In the TSR, Ofcom found that vertical integration provided BT with both the incentive and ability to leverage its market power in fixed access and backhaul, and discriminate against downstream competitors buying its wholesale services.
- 2.3. In particular, Ofcom identified that BT's competitors suffered from a lack of equality of access. BT's rivals were frustrated by delays and inadequacies in the wholesale access products provided by BT. Ofcom noted that BT engaged in discriminatory conduct across a wide range of markets (including local loop unbundling, private partial circuits, carrier pre-select and bitstream access). The consultation document included five case studies setting out specific examples of discrimination, concluding that:¹⁶

“Those who rely on BT to provide such access have experienced twenty years of slow product development, inferior quality wholesale products, poor transactional processes and a general lack of transparency.”
- 2.4. An objective observer would find it difficult to resist the conclusion that the same problems persist today. As a solution to endemic discrimination by BT, Ofcom chose a 'compromise' solution that preserved the vertical integration of BT but sought to remove its ability to engage in anti-competitive discrimination.
- 2.5. Specifically, Ofcom accepted legally binding undertakings from BT instead of a reference under the Enterprise Act 2002.¹⁷ The two key elements of these Undertakings were EoI and the formation of an operationally distinct 'access services division' (functional separation):

¹⁶ Ofcom, *Strategic review of telecommunications (phase 2)* (consultation), November 2004, paragraph 1.19, http://stakeholders.ofcom.org.uk/binaries/consultations/telecoms_p2/summary/maincondoc.pdf.

¹⁷ Ofcom, *Notice under Section 155(1) of the Enterprise Act 2002: Consultation on undertakings offered by British Telecommunications plc in lieu of a reference under Part 4 of the Enterprise Act 2002* (30 June 2005), paragraph 2.2 <http://stakeholders.ofcom.org.uk/binaries/consultations/sec155/summary/sec155.pdf>.

Figure 7: Components of Ofcom's Equality of Access



Source: Derived from Ofcom¹⁸

2.6. We discuss the shortcomings of functional separation and EoI in turn.

3. The limitations of functional separation as a remedy

3.1. Pursuant to the TSR, BT agreed to constitute a distinct separate access services division (“**ASD**”) – which was subsequently known as Openreach – which would still form part of the BT Group but be functionally separate from it.

3.2. The ASD assumed the control and operation of the physical network assets making up BT's local access network and backhaul network, including all staff and management tiers required to manage these assets.¹⁹ The ASD became responsible for nearly all of BT's access infrastructure (including the copper network, the fibre or next generation access network as well as ducts, poles and other civil infrastructure).

3.3. At a practical level, BT agreed that:²⁰

- The CEO of the ASD would report to the CEO of the BT Group, but would not be a member of the operating committee of the BT group.
- The ASD would have the freedom to operate within an operating plan and capital expenditure plan agreed annually with the BT Group;

¹⁸ Source: Alex Blowers, *Functional separation: the UK Openreach model*, Presentation to ANACOM, 9 November 2015, http://www.anacom.pt/streaming/sem09112007.pdf?contentId=534276&field=ATTACHED_FILE.

¹⁹ Ofcom, *Notice under Section 155(1) of the Enterprise Act 2002: Consultation on undertakings offered by British Telecommunications plc in lieu of a reference under Part 4 of the Enterprise Act 2002* (30 June 2005), paragraph 2.5 <http://stakeholders.ofcom.gov.uk/binaries/consultations/sec155/summary/sec155.pdf>.

²⁰ *Ibid*, paragraph 2.7 and Annex E.

- The ASD would provide separate financial and regulatory accounts from the rest of the BT Group.
 - The management team of the ASD would be based in physically separate locations from the rest of the BT Group.
 - The remuneration of the ASD's personnel would be aligned with the performance of the ASD in future, and not with that of the BT Group.
- 3.4. In the DCR consultation document, Ofcom has described the aims of functional separation as being *“to deliver behavioural change by creating an organisation whose culture and incentives are aligned with the interests of all wholesale customers rather than just the vertically integrated company's downstream divisions.”*²¹
- 3.5. However, as subsequent events have borne out, functional separation has proven to be a highly imperfect solution to BT's incentives.
- 3.6. These failings are inextricably tied to the inherent limitations of functional separation itself as a remedy. In particular, the mere operational separation of the unit providing bottleneck services has been insufficient to eliminate the structural conflicts of interest that inevitably arise from having the same shareholder:
- Although Openreach has the freedom to operate within an agreed operating and expenditure plan, that plan still has to be agreed by BT Group in the first instance.
 - Ultimately, the Openreach's performance targets and plans are set by the CEO of BT Group
 - Likewise, Openreach's operating and capital expenditure plans are all set, controlled, and governed by BT group. Accordingly, the culture and incentives of Openreach are closely aligned with the vertically integrated downstream company (ie the BT Group).

4. The limitations of Eol as a remedy

- 4.1. The central element of the Eol obligation is to require Openreach to offer the same wholesale products to its own downstream divisions and its rivals, on the same terms and conditions (“non-discrimination”). The primary purpose of the Eol obligation was to incentivise BT to improve the price, quality, and functionality of input wholesale products, which had historically been poor.
- 4.2. At the time of the TSR which ultimately lead to the imposition of Eol obligations on Openreach, Ofcom stated its belief that:

“... equivalence of input delivers many advantages over equivalence of outcome [where BT is not obliged to use the product itself]. It generates better incentives to BT to improve the products it offers to its competitors, it

²¹ Ofcom, DCR discussion document, paragraph 11.11.

increases transparency, it is easier to monitor compliance, and it would require less on-going intervention by Ofcom. It therefore offers greater potential to solve the problem of inequality of access in a sustainable fashion.”²²

- 4.3. Unfortunately EOI has not ensured a level playing field between BT's downstream business units and competitors. As Ofcom highlights in the DCR consultation document, the fundamental problem is that BT does not always use the same products as its competitors, or does not use them in the same proportions. Where that is the case, Eol is essentially an ineffective remedy.
- 4.4. The examples below evidence a clear pattern that has emerged of BT seeking to maximise its returns by discriminating against downstream competitors using a variety of methods, notwithstanding the imposition of the Undertakings. These methods include:
 - discounting the price of Openreach products that BT consumes proportionately more of than its competitors (where regulation is based on a charge control basket);
 - structuring product pricing in order to make it difficult for competitors to compete effectively or to offer the same level of quality as BT.
 - misallocating costs, so as to increase the prices of all regulated services, and to increase the price of regulated services consumed proportionally more by its rivals; and
 - favouring the development of new products consumed by its own downstream divisions or supply a better quality of service to itself.
- 4.5. To date Ofcom has attempted to address these infractions following *ad hoc* complaints by BT's downstream competitors, using a variety of regulatory tools. However, in each case, BT enjoys the benefits of the discrimination until it is brought to Ofcom's attention, investigated, and then remedied.
- 4.6. We now give examples of the fundamental weaknesses of the Eol remedy.

5. Examples of Eol's limitations as a remedy

Discounting the price of Openreach products that BT consumes proportionately more of than its competitors

- 5.1. Ofcom has found that even where wholesale charge controls exist, there is still scope for BT to favour its own downstream divisions. Specifically, where significant differences emerge in the consumption of regulated products, the potential exists for BT to discriminate in favour of its own operations by lowering the prices of products that BT consumes proportionately more than its competitors, while raising the prices of products that its competitors use more.

²² Ofcom, *Strategic review of telecommunications (phase 2)* (consultation document), November 2004, paragraph 6.13, http://stakeholders.ofcom.org.uk/binaries/consultations/telecoms_p2/summary/maincondoc.pdf.

- 5.2. A recent example of this is shown below, as the case study illustrates.

Case study: pricing differentials in Ethernet leased lines²³

Mobile backhaul connects an MNO's radio base station with its core network. It can be provided through copper, microwave and/or fibre. Openreach supplies a variety of Ethernet circuits that can be used for mobile backhaul, particularly Ethernet Access Direct ("EAD").

Openreach makes two versions of EAD available:

- **Local access (LA) circuits** – these connect a cell site to the nearest BT exchange that has fibre, but exclude the provision of a main fibre link between Openreach exchanges;
- **Non local access (NLA) circuits** – these are longer distance circuits that are more costly because they involve several "hops" and include the provision of a main link between Openreach exchanges.

Openreach provides both products to BT Wholesale, Virgin and other operators. But BT Wholesale relies on a greater proportion of the shorter distance ("EAD LA") circuits because it has a much more ubiquitous network. By contrast, Virgin and other BT rivals have smaller networks and find it uneconomic to unbundle Openreach exchanges that are close to MNOs' base stations. For that reason, BT's competitors typically source a greater proportion of the longer distance EAD non-LA circuits.

BT has historically exploited the flexibility provided by Ofcom's charge control by setting much lower prices for the EAD LA service that it consumes proportionately more of. BT's rivals then face greater costs due to their greater reliance on the more expensive NLA circuit, and cannot compete against BT Wholesale on equal terms. This allows BT Wholesale to retain its position as the provider of 70–80% of all ethernet-based fibre mobile backhaul circuits in the UK.

After years of complaints by Three and other operators, Ofcom has finally proposed to address the issue in its recent BCMR consultation. Ofcom proposes to impose a 'basis of charges' condition on BT, according to which the price difference between EAD LA and EAD should be equal to Long Run Incremental Cost. Ofcom's aim is to "*reduce the risk of excessive pricing or undue discrimination by BT and address the risk that BT recovers more common costs from non-Local Access variants, which are proportionally more important to its competitors*".

Structuring product pricing to make it difficult for competitors to compete effectively

- 5.3. Ofcom has found that even where wholesale charge controls exist and competitors consume a similar proportion of services compared to BT, there is still scope for BT to favour its own downstream divisions. BT can discriminate in favour of its own operations by structuring the basket of charges to favour its own network structure and design compared to that of its competitors. This makes it uneconomical for competitors to offer services of the same quality to BT.
- 5.4. An example of this can be found in the wholesale broadband access market ("WBA"),²⁴ which is deregulated in areas where competitors have rolled out an

²³ Ofcom, *Business Connectivity Market Review: Review of competition in the provision of leased lines* (consultation) 15 May 2015, paragraphs 10.18 to 10.29.

²⁴ Ofcom, *Review of the wholesale broadband access markets* (consultation on market definition, market power determinations and remedies), 11 July 2013, <http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/>

LLU MPF based network. It is far more cost effective for competitors to compete with BT in the retail broadband market using BT's MPF product, than purchasing the wholesale product that BT sources from its upstream divisions.

Case study: wholesale broadband access markets²⁵

In remote rural areas where competitors have not rolled out an LLU-based network (referred to as market A by Ofcom), there are only one or two potential significant wholesale broadband providers. A charge control is in place that has, over the past few years reduced BT Wholesale's broadband access prices by approximately 10% a year. Despite this charge control, competition to BT in these areas has declined significantly over the last few years. This appears from BT's regulated financial statements which show that external sales to retail competitors in market A have fallen by 30% between 2014 and 2015.²⁶

One of the reasons for this is the way in which BT Wholesale charges for these services. For these services there are two elements to the charge,²⁷ consisting of:

- a fixed 'access' rental charge, and
- a 'capacity based' charge determined by peak throughput at a specific aggregation point within BT's network.

In theory, downstream retail operators determine the peak throughput capacity per customer depending on the quality of service (internet speed) they offer to their end users. The higher the peak throughput capacity acquired, the better quality of service retail broadband operators can offer their customers.

However, because capacity pricing is not based on a per user basis, but instead is charged according to the capacity consumed at an aggregation point in BT's network, operators with a higher number of customers enjoy a lower per unit cost. The structure of BT's charging system thus favours larger operators, as they are more able to contest their capacity requirements through BT's network and still offer customers good quality internet services. Operators with fewer customers are less able to contest and manage their capacity requirements through BT's network and thus have to effectively procure a higher throughput capacity per end user.

This problem was discussed in the last wholesale broadband access market review carried out by Ofcom.²⁸

Misallocation of costs

5.5. The requirement for BT to allocate a significant proportion of its revenues and costs to and from Openreach gives BT the scope to influence the revenues and costs of both regulated and non-regulated products. BT can benefit from favourably misallocating costs in two ways:

- Firstly, BT can **increase the costs of all regulated products**, in the hope that this will lead to Ofcom setting higher prices for regulated services. Even though BT's downstream divisions and their competitors pay the same for these regulated services, BT's wholesale prices merely represent internal transfers within BT group. By contrast, for competing operators,

²⁵ <http://stakeholders.ofcom.org.uk/consultations/review-wba-markets/>

²⁶ BT, *Regulated financial statements 2015*, pages 101 and 105. External sales were £76 million in 2014, compared to £76 million in 2015.

²⁷ BT, *Wholesale carrier price lists*, <https://www.btwholesale.com/pages/static/help-and-support/pricing/service-provider-price-lists.htm>

²⁸ Ofcom, *Wholesale broadband access charge control*, 20 July 2011, paragraphs 3.95, 3.115, and 3.116, <http://stakeholders.ofcom.org.uk/consultations/wba-charge-control/statement>.

high regulated prices represent higher actual external costs and lower profit margins.

- Secondly, **BT can increase the costs of regulated products consumed by its competitors** relative to the prices consumed by its own downstream divisions.

- 5.6. Below, we give two recent examples of where Ofcom found that BT misallocated costs and thus influenced wholesale and retail prices to its own advantage.

Case study: Ofcom's review of BT's cost attribution methodologies²⁹

In June 2015 Ofcom carried out a review of BT's cost attribution methodologies. This review considered the system that BT uses to allocate its costs and to derive the prices for its regulated products.

Ofcom found many instances in which BT was over-allocating its costs to regulated services – both from the BT Group to Openreach, and within Openreach between regulated and non-regulated products.

Two of Ofcom's main findings were that:

- a significant proportion of BT's corporate overheads (amounting to £230 million) were being allocated to regulated services instead of to non-regulated services; and
- basic mathematical errors resulted in approximately £40 million of costs being misallocated to regulated products instead of being correctly allocated to non-regulated products.

To put this into context, the total value of the BT Group's general overheads is approximately £1bn. This means that over 20% (£230m of this £1bn) of the BT Group's general overheads, were incorrectly allocated to regulated products.³⁰

- 5.7. Cost misallocations of the type described in the example above have enabled BT to inflate the prices of the regulated products that it sells to its downstream competitors in the interim, before being discovered and remedied.

²⁹ Ofcom, *Review of BT's cost attribution methodologies* (consultation), 12 June 2015, <http://stakeholders.ofcom.org.uk/binaries/consultations/cost-attribution-review/summary/review-bt-cost-attribution-method.pdf>.

³⁰ *Ibid*, section 8.

Case study: BCMR – Ethernet and TI product costing³¹

Ofcom has typically used BT's allocated cost data as basis of the charge control cost models that Ofcom uses to determine regulated prices. In all recent market reviews, Ofcom has made significant adjustments to BT's allocated costs to ensure that they truly reflect BT's incurred costs, and exclude costs that BT has allocated to regulated products with the intention of duping Ofcom into setting higher prices for these products.

In the latest BCMR consultation, Ofcom is proposing to reduce the allocated costs for Ethernet and traditional interface ("TI") products by approximately £130million. Compared to the total cost of these products (c. £770 million), Ofcom's adjustments represent a reduction of 15%.

These adjustments are necessary because BT favourably misallocated its costs in an attempt to favour itself and inflate the prices Ofcom calculate for these regulated services.

- 5.8. Likewise, in relation to Ethernet and TI costing, BT can continue to charge higher prices for regulated services until these transgressions are rectified.
- 5.9. Moreover, due to the complexity of BT's allocation systems, for each cost misallocation that is corrected by Ofcom or unearthed by BT's competitors, there are probably many more breaches that go undetected.

Favouring the development of new products consumed by BT's own downstream divisions and supplying greater quality of services to itself

- 5.10. BT has been shown to favour the development of active products consumed by its own downstream divisions. Conversely, Openreach has for many years resisted demand for passive products requested by competing operators, as those products would enable greater differentiation and development of new services by competing operators.
- 5.11. Significant recent examples of this are shown in the business connectivity market and the fixed access market.
 - In the latest BCMR consultation, Ofcom is proposing to force BT to open up its leased line network by allowing passive access to dark fibre.³² Ofcom's proposals follow years of repeated requests by BT's competitors to grant access to its passive network assets.
 - In the superfast broadband market, BT has not prioritised the development of products that are better suited to its competitors' needs. As a result, other CPs are restricted to purchasing products that have specifically been tailored to the requirements of BT's downstream divisions. Accordingly, BT's competitors are unable to differentiate their product offerings more, to the detriment of competition in this rapidly expanding market. TalkTalk,

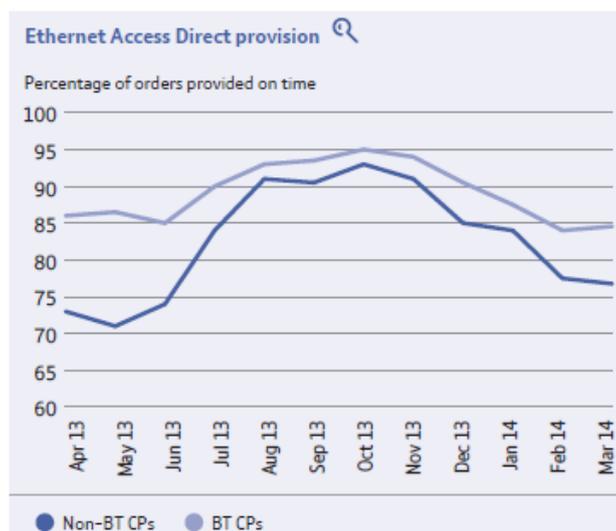
³¹ Ofcom, *Business Connectivity Market Review: Review of competition in the provision of leased lines* (consultation) 15 May 2015, table A7.1, http://stakeholders.ofcom.org.uk/binaries/consultations/bcmr-2015/summary/BCMR_Sections.pdf.

³² *Ibid*, paragraph 9.64.

Sky and others have raised this concern with Ofcom on several occasions.³³

- 5.12. Examples of BT providing a higher quality of service to itself are common. BT's Equality of Access Board Annual Report for 2014 shows that Openreach provides a greater percentage of orders on time to BT's downstream divisions than to BT's rivals in markets like Ethernet Access Direct (see Figure 8), IP Stream Connect, Wholesale Broadband Connect and, to a lesser extent, in other services as well.

Figure 8: BT's rivals receive lower quality of service than BT itself



Source: BT Equality of Access Board Annual Report 2014

6. Openreach's investment decisions reflect the needs of BT Group and not necessarily those of its wholesale customers.

- 6.1. The BT Group (including Openreach) has a capital expenditure target. This places constraints on Openreach that are not necessarily aligned to the needs or demands of the Openreach division as a standalone entity. For example, over the past five years, the BT Group made commitments to its investors that capital expenditure would not exceed £2.5bn.
- 6.2. Functional separation has not prevented BT from determining its investment strategy in a way that suits the BT Group, but does not meet the requirements of other wholesale customers.
- 6.3. For instance, BT is prioritising investment in its next generation access ("NGA") network and expansion into Pay TV to suit the needs of its consumer-facing

³³ See, for example: Sky, *Supplemental submission in response to Ofcom's Phase II submission in the CMA's phase II review of BT's anticipated acquisition of EE*, 24 August 2015, paragraph 3.3, https://assets.digital.cabinet-office.gov.uk/media/55df1b12ed915d06a100000b/Sky_submission_24_August_2015.pdf.

divisions at the expense of Openreach's copper network. BT's NGA network now covers 68% of UK premises. Meanwhile, BT has recently outbid Sky in the sale of exclusive rights to broadcast UEFA's Champions League in the UK between 2015/2016 and 2017/2018.

- 6.4. This has disadvantaged rivals like Sky and TalkTalk, who rely on the copper network to a larger extent in order to provide standard broadband services to a large percentage of subscribers, and who have received an unacceptable level of service in terms of faults, repair and service provisioning.
- 6.5. Moreover, in the last five years, the perceived riskiness of the BT Group has increased, which is reflected in the increase in BT's asset beta. Ofcom has noted that this increase in 'riskiness' could be due to many factors, a significant one being BT's recent expansion into the TV market. (BT invested in excess of £1bn in TV rights that yield an unknown future return).³⁴
- 6.6. As the perceived riskiness of the BT Group increases and shareholder demands for returns on capital investment continue to rise, Openreach's regulatory and commercial *raison d'être* will become even more misaligned from the rest of BT Group's. As Ofcom has acknowledged, Openreach has a lower asset beta and is thus 'less risky' than the rest of the BT Group.³⁵ Because Openreach's capital expenditure is less risky, it will probably attract lower returns, and so will likely cause the BT Group to redirect even more investment away from Openreach to other BT divisions.

7. BT's incentives and ability to discriminate will only become worse

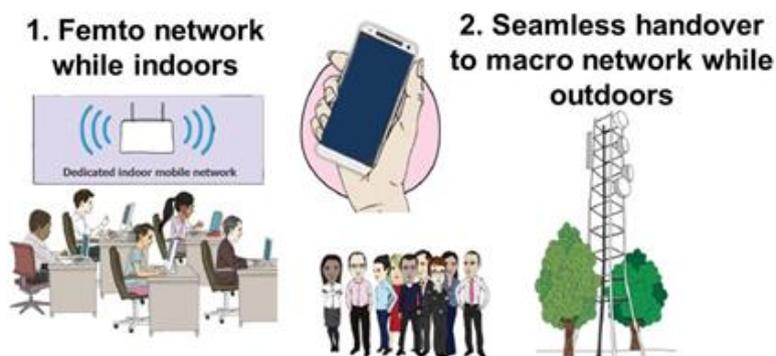
- 7.1. Three anticipates that the problems described above will be exacerbated by:
 - BT's deepening levels of vertical integration, particularly if the BT/EE merger is approved, and as BT continues to expand its pay TV offering;
 - the migration to superfast broadband, a market in which BT has a much higher share relative to standard speed broadband; and
 - increased take-up of truly converged fixed mobile products.
- 7.2. As BT expands into mobile and Pay TV, vertical integration within the BT Group will open up even more opportunities for BT to discriminate against its downstream competitors.
- 7.3. For instance, BT has a much higher share of the superfast broadband market, compared to standard broadband. In providing standard broadband services to end users, BT's competitors can unbundle local loops and install their own equipment in BT's exchanges. This has been instrumental in providing infrastructure-based competition to BT and differentiated services in standard broadband.

³⁴ *Ibid*, paragraphs A9.35 to A9.44.

³⁵ *Ibid*, table A9.1.

- 7.4. This is not so for superfast broadband. BT is rolling out superfast broadband services in a way that only allows BT's competitors to resell BT's generic superfast product – offering no opportunity for service or product innovation through the build out of actual infrastructure. Because of this, BT's relative share of the broadband market is expected to increase significantly relative to its competitors, as customers demand higher broadband speeds.
- 7.5. Moreover, as the market for converged products and services grows, it will become exponentially more difficult for Ofcom to police BT's compliance with the Undertakings. This will not only increase the regulatory burden on Ofcom, but also the risk of regulatory failure. For instance, BT intends to deploy an 'inside out' mobile network with the following components:
- **Indoor 4G femtocells:** 7.8 million BT Retail broadband customers have BT Home Hubs and Business Hub routers delivering Wi-Fi connectivity to individual homes and offices. These routers can be upgraded to an indoor femtocell using BT's 2.6GHz spectrum to provide better indoor coverage and capacity.
 - **EE's macro network:** outside the coverage area of the femtocells, BT/EE would be able to hand over traffic seamlessly to EE's network. BT/EE could also leverage BT's existing network of c6,000 public Wi-Fi hotspots (e.g. in coffee shops, hotels, etc) and a large estate of small cell site locations (such as phone boxes, lampposts, telegraph poles and street cabinets).

Figure 9: BT's Inside Out mobile network



Source: BT

- 7.6. With this model, BT aims to provide a truly-converged service that gets the fixed network as close to the customer as possible, but still gives the flexibility and convenience of mobility. Should this service become popular with consumers, BT's rivals will require access to similar functionality, and BT will likely find ways to prevent them from competing on a level playing field.

7.7. More generally, it is impossible to predict what services consumers will demand in a decade. But BT's access network is at the centre of the UK's telecom infrastructure, supporting services in markets as diverse as fixed broadband, pay TV, mobile backhaul, small cells, business connectivity, fixed/mobile bundles or fixed voice. A regulatory model that fails to tackle BT's incentive to discriminate against its downstream competitors in present and future markets is not in the ultimate interests of competition or UK consumers.

8. Structural separation of BT's network is the most effective way of eliminating BT's incentives to discriminate

8.1. In the 2005 TSR, Ofcom concluded that the economic arguments for and against structural separation were "finely balanced". Ofcom decided to avoid the costs and disruption of structural separation and opted for the "half-way" house of equality of access. Ofcom noted that:

"for the separation issue to be finally laid to rest, it will be necessary to see real evidence of progress towards a regime which guarantees real equality of access. Only where all stakeholders see real evidence of this is it realistic to expect demands for break-up to subside ... We would prefer a solution which delivered equality of access without the disruption and costs of BT's Structural Separation. However, should such an approach not deliver the results required of it, Structural Separation may in the long term be the only viable option".³⁶

8.2. Ten years on, problems with equality of access persist. The number of parties calling for the break-up of BT is now greater than ever. As Ofcom anticipated, equality of access has been the most intractable problem of telecoms regulation. Indeed, this begs the question as to whether structural separation is the only viable option in the long term.

8.3. The weaknesses in the current equality of access model leave Ofcom with one of two choices, either to (1) enhance the current system of EoI and functional separation, or (2) undertake a one-off intervention in the form of structural separation.

8.4. Three recognises that enhancing the current model is not without merits. Structural separation would be costly and disruptive to the industry. Enhancing functional separation would help to reduce BT's ability to discriminate, such as by changing the governance arrangements, implementing more detailed monitoring and enforcement of cost allocation and charge controls that contain stronger incentives to improve quality of service, and imposing more severe penalties for sustained non-compliance.

8.5. However, mere functional separation can never go far enough. No matter how the functional separation of Openreach is dressed up, the same conflict of interests remain:

- The current model of functional separation relies on a governance structure that reports BT's compliance with the Undertakings to the BT Board and to Ofcom. This model has not delivered the anticipated culture change that would align the interests of Openreach with those of its wholesale customers.
 - The fact remains that, for so long as Openreach remains part of the BT Group its interests will always be more aligned to BT's own divisions.
- 8.6. Due to the unavoidable conflict of interests underlying mere functional separation, Openreach's EoI obligations can never sufficiently reduce BT's ability to discriminate against competitors.
- 8.7. By contrast, structural separation would not only remove the means for BT to favour itself but also the motive for BT to do so. One form of separation would place enduring bottleneck assets in a separate company subject to ongoing regulation. As structurally separated wholesale and retail entities, Openreach and BT would no longer have a common interest beyond those of purchaser and supplier.
- 8.8. Structural separation would also enable a simplified regulatory framework. Moreover, an independent Openreach would have greater control over network investment decisions, allowing it to coordinate investment with all industry players, and not just between BT's retail and wholesale activities.

4. Spectrum reform.

1. Introduction

- 1.1. Spectrum is the single most important input in mobile. As a result of the explosion in demand for mobile data and increased consumer expectations on quality and speeds, the distribution of spectrum between MNOS is increasingly critical for competition, investment and innovation in the mobile market. The allocation of spectrum between MNOs will determine the competitiveness of the mobile market in the next decade and beyond.
- 1.2. An MNO's coverage, speed, capacity and potential for growth are all constrained by the amount and type of spectrum it holds. In addition, the timely and efficient release of spectrum is one of the most important of Ofcom's statutory functions, particularly in relation to mobile. As such, the release of spectrum and the adoption of competition measures in relation to spectrum have a critical role to play in facilitating and sustaining competition in mobile.
- 1.3. In this section, we will:
 - set out our concerns about the current distribution of spectrum in the UK and explain why Ofcom should impose consistent **competition measures** that preclude spectrum holdings across MNOs to be distributed so asymmetrically as to undermine the sustainability of competition in the market.
 - consider how Ofcom can better **support growth in mobile** by (1) creating business certainty and making firm commitments to release spectrum to support forecasted growth in mobile demand, and (2) setting spectrum release targets in line with projected mobile demand and measuring progress against these targets.

2. Ofcom should use competition measures to promote sustainable competition in the mobile sector

Spectrum is very unevenly distributed between MNOs

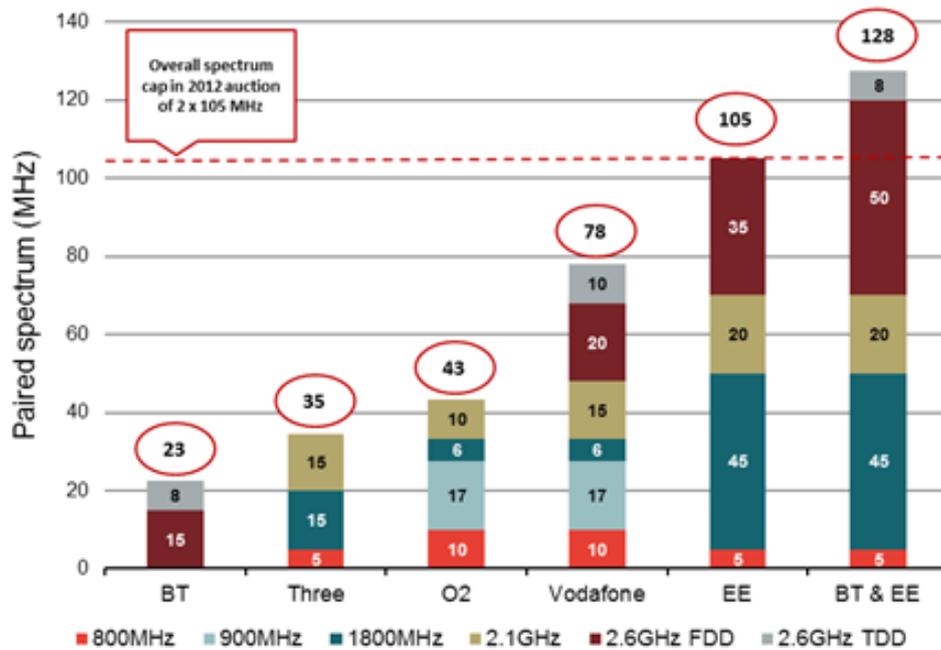
- 2.1. In the DCR Discussion Document, Ofcom has stated that it has used spectrum awards to promote competition, including by:
 - reserving a licence for new entrant in the 3G auction;³⁷ and
 - designing the 4G auction so as to maintain Ofcom's preference for four MNOs, which Ofcom claims was achieved by reserving some of the available 3G spectrum for a fourth national wholesaler other than the three largest MNOs.³⁸

³⁷ Ofcom, *Strategic review of digital communications* (discussion document), 16 July 2015, paragraph 4.26.

³⁸ *Ibid*, paragraph 8.9.

- 2.2. However, this ambition has been undermined by Ofcom's approach to spectrum allocation. Policy choices taken by Ofcom in the past have resulted in a very uneven distribution of spectrum between MNOs.
- 2.3. Until relatively recently, the average UK mobile consumer was still a user of 2G voice and text. Three was well placed to benefit from the anticipated switch in consumer demand towards data because, as shown in Figure 10, all MNOs had a similar holding of 3G-capable spectrum in the 2.1GHz band (in light brown).

Figure 10: Spectrum is very unevenly distributed in the UK



Source: Three

- 2.4. More recently, as shown in Figure 10 the initial level playing field between MNOs in respect of data-capable spectrum has vanished:
 - Ofcom's 2011 and 2012 decisions to liberalize 900MHz and 1800MHz spectrum to 3G and 4G ✂;
 - the 2013 auction of 800MHz and 2.6GHz 4G spectrum created a larger imbalance. Three was only able to acquire 2x5MHz of 800MHz spectrum reserved by Ofcom for a fourth national operator (amounting to 4% of the available spectrum), while EE and Vodafone purchased 68% of the spectrum on sale; and
 - the BT/EE merger threatens to aggravate the existing spectrum asymmetry, because BT/EE will hold 45% of all mobile spectrum in the UK as a result of the merger.

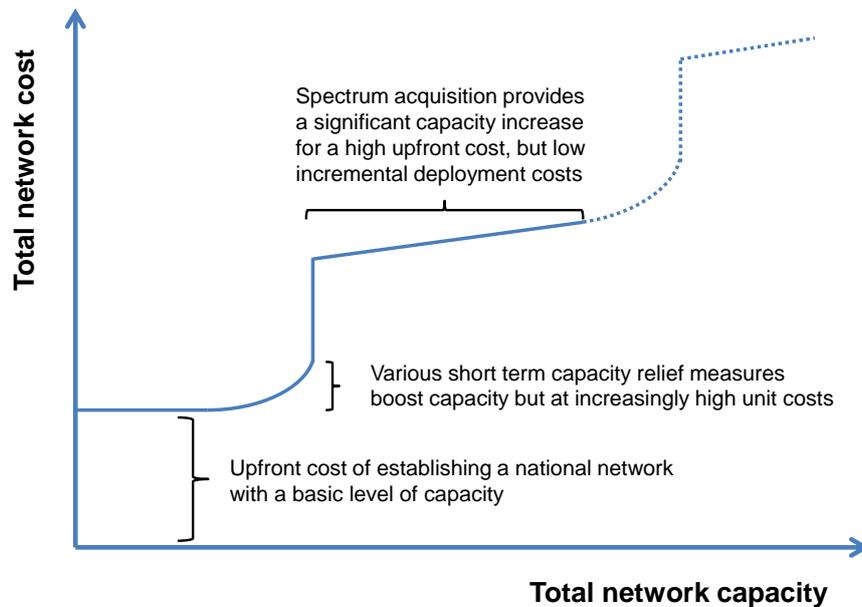
- 2.5. Ofcom has adopted a laid-back approach to spectrum allocation and does not seem overly concerned about this situation. In its view, MNOs can compensate for a lack of spectrum by rolling out new macro cells, deploying small cells or increasing the number of cell sectors per site.³⁹ In reality, however, Ofcom has understated the importance of spectrum and overstated the ability of spectrum alternatives to address increasing capacity needs or speed disadvantages in a significant way.

New macro cells, small cells and sectorisation are much less effective capacity relief measures than spectrum

- 2.6. Three recognises that there are some alternative network and technology solutions that allow MNOs to increase capacity. However, they are not comparable to the release of spectrum in terms of their effectiveness and cost.
- 2.7. Mobile traffic is distributed very unevenly between different parts of the UK. As traffic increases beyond the initial capacity provided by the coverage network in some areas, individual sites will become overloaded. An MNO will then need to add capacity or face congestion. There are two main ways of increasing capacity:
- **Spectrum** – spectrum acquisition and its major deployment across the network, to provide a large scale increase in capacity across the network; and/or
 - **Targeted capacity relief** – investments in specific sites or locations such as adding new macro sites (cell splitting), sectorisation or deploying small cells.
- 2.8. Spectrum delivers incremental capacity in large lumps for a high upfront cost. By contrast, targeted capacity relief can be delivered in smaller increments but at a higher cost per unit of capacity. This means that the capacity-cost relationship is as illustrated below.

³⁹ Ofcom, *Anticipated acquisition by BT plc of EE Limited: Ofcom's Phase 2 submission to the CMA*, 31 July 2015, paragraphs 3.30 and 3.31, https://assets.digital.cabinet-office.gov.uk/media/55cc79abe5274a547300002f/Ofcom_Phase_2_submission.pdf

Figure 11: Relationship between network costs and capacity



Source: Three

- 2.9. As Figure 11 illustrates, the acquisition of new spectrum allows MNOs to acquire incremental capacity in large amounts for a high upfront cost. When that capacity is exhausted, an MNO may use targeted capacity relief measures (such as deploying new macro cells, small cells or adding sectors) to address capacity constraints, because additional spectrum would be largely unutilised and the cost per unit of capacity would be very high.
- 2.10. However, the unit costs of site-specific targeted relief increase rapidly as an operator increases capacity. This is because alternative options become more costly and yield diminishing returns as less expensive options are exhausted. The best macro sites have already been taken, and MNOs need to devote significant time and cost to obtain planning permission and to negotiate access to suitable sites.
- 2.11. For instance, it is increasingly difficult to deploy additional macro sites or small cells in larger urban areas (where they are more likely to be needed). There are also significant limitations to avoiding interference between neighbouring cells and sectors in dense urban areas. By contrast, new spectrum rapidly becomes a significantly cheaper option when it can be deployed to provide needed capacity across a large number of sites. This underscores the ‘niche’ characteristic of targeted capacity relief.

An MNO cannot rely on new macro cells, small cells or sectorisation to increase speeds

- 2.12. As set out in section 1 (*Current trends in the UK communications market*), speeds are increasingly important as a key dimension of competition. Ofcom appears to hold the mistaken view that an MNO can compensate for a lack of spectrum and increase 4G average speeds by simply deploying additional macro cells, small cells or adding new sectors.⁴⁰
- 2.13. This view does not take account of the game-changing nature of technology developments in the past few years and their effect on average user speeds. Carrier aggregation technology is a key innovation that allows devices to connect to and use multiple 4G ‘carriers’ or spectrum blocks at the same time, significantly increasing user speeds. With carrier aggregation, average 4G speeds are now largely determined by the amount of spectrum a single user can access based on: (1) the size of 4G spectrum blocks accessible by a device, and (2) the number of blocks that can be aggregated.
- 2.14. LTE-Advanced currently allows for up to five spectrum blocks to be aggregated. The next iteration of technical standards (LTE-Advanced Release 13) is expected to set standards for the aggregation of up to 32 spectrum blocks.⁴¹ Therefore, it is reasonable to expect that, over time, MNOs will be able to aggregate all the spectrum that they hold.
- 2.15. A key consequence of this development is that ✂.
- 2.16. Three’s experience with carrier aggregation has confirmed that carrier bandwidth is the key determinant of average user download speeds. ✂
- 2.17. ✂

⁴⁰ https://assets.digital.cabinet-office.gov.uk/media/55cc79abe5274a547300002f/Ofcom_Phase_2_submission.pdf, paragraph 3.50

⁴¹ <http://www.3gpp.org/news-events/3gpp-news/1628-rel13>

Figure 12: ✂



Source: ✂

Ofcom must formulate clear, overarching principles for setting spectrum competition safeguards

- 2.18. To date, Ofcom's approach to spectrum policy has largely been reactive and ad hoc – based on a response to specific developments such as auctions, mergers and acquisitions. Ofcom appears to have no over-arching goals for its spectrum competition policy, leaving it to market participants to guess its preferred outcomes by 'filling in the blanks'.
- 2.19. Ofcom can mitigate uncertainty by establishing clear, overarching principles for setting spectrum competition safeguards in the future. Given the essential nature of spectrum for mobile, the rapid growth in mobile traffic, the inadequacy of alternative means of increasing capacity and speeds and the infrequent nature of spectrum awards, Three's view is that outcomes where one or more operators are allocated only a very small amount of spectrum are incompatible with sustainable competition.
- 2.20. Ofcom must ✂ preclude MNOs with large spectrum holdings from accumulating ever larger quantities of spectrum as a way of foreclosing competition. This can be achieved by imposing more robust competition safeguards to protect downstream competition, and establishing clear, overarching principles for setting spectrum competition safeguards.

3. Ofcom's spectrum release plans are insufficient to meet demand and are too non-committal to be meaningful

3.1. Ofcom has clearly recognised the importance of spectrum for mobile and the benefits to UK consumers that making more spectrum available for mobile generates. Notably:

- In its spectrum management strategy statement,⁴² Ofcom identified “addressing future mobile data demands”⁴³ as a key priority. In its work plan to address this priority, Ofcom indicated that it is “developing a long term perspective on demand and supply options”.⁴⁴
- In its mobile data strategy statement,⁴⁵ Ofcom classifies its work on developing candidate spectrum bands for mobile into low, medium and high priorities⁴⁶ and sets out illustrative implications for the availability of these candidate bands up to 2028.⁴⁷
- Ofcom is actively involved in the identification of candidate bands above 6GHz for 5G mobile services, both in the UK and internationally.⁴⁸

3.2. However, releasing new spectrum takes a long time and must pass through a number of lengthy processes. Planning for the future is absolutely critical to ensure business certainty. However, Three believes that Ofcom's current plans for the release of new spectrum are insufficient for these purposes.

3.3. Ofcom's mobile data strategy⁴⁹ allocates a priority level to each of the new spectrum bands that Ofcom is considering for release. However, Ofcom stops short of committing to a detailed and binding timetable for new releases, opting instead for a much vaguer, non-binding set of illustrative timelines. This impacts on operators' ability to plan effectively.

⁴² Ofcom, *Spectrum management strategy: Ofcom's strategic direction and priorities for managing spectrum over the next 10 years* (statement), 30 April 2014, <http://stakeholders.ofcom.org.uk/binaries/consultations/spectrum-management-strategy/statement/statement.pdf>

⁴³ *Ibid*, paragraph 1.29

⁴⁴ *Ibid*, paragraph 5.27, table 4.

⁴⁵ Ofcom, *Mobile data strategy* (statement), 28 May 2014, <http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-data-strategy/statement/statement.pdf>.

⁴⁶ *Ibid*, Table 1

⁴⁷ *Ibid*, Table 2

⁴⁸ An overview of Ofcom's activities in this area can be found in Ofcom, *Laying the foundations for next generation mobile services: Update on bands above 6GHz*, 20 April 2015, paragraph 1.6, <http://stakeholders.ofcom.org.uk/consultations/above-6ghz/update-apr15/>.

⁴⁹ Ofcom, *Mobile data strategy* (statement), 28 May 2014, <http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-data-strategy/statement/statement.pdf>.

Case study: Ofcom's illustrative timelines for future spectrum availability

In its mobile data strategy in May 2014,⁵⁰ Ofcom proposed a very high-level set of non-binding timelines for future spectrum releases. Ofcom's proposals are too vague for the following reasons:

- Ofcom has not committed to any specific dates for short to medium term releases. Ofcom merely states that its intention is to make a re-purposed L-band (1452-1492MHz), 2.3GHz and 3.4GHz spectrum "by 2016".
- Ofcom has proposed overly-wide time windows for longer-term releases:
 - A window of 2016-2022 has been proposed for the release of 700MHz and 2GHz MSS (mobile satellite services) spectrum.
 - A window of 2022-2028 has been proposed for the release of spectrum in the 2.7-2.9GHz and 1492-1518MHz bands.

This type of release plan is highly deficient for planning purposes, as operators cannot any base business decisions on it.

- 3.4. Three recognises that there will always be a degree of uncertainty about the rate of mobile demand growth and the amount of spectrum that will be needed to meet this demand. Similarly, there are other factors falling outside of Ofcom's control that affect the allocation of new individual bands for mobile use. These include, for example, bands still to be identified for mobile use at WRC-15 and WRC-19, the pace of band harmonisation in the EU level, band-specific decisions made at the EU level such as in relation to 2GHz MSS licences.
- 3.5. However, studies such as those conducted by the ITU-R and the GSM Association give reliable estimates of mobile demand in the medium term, and provide a sufficient basis on which to set approximate spectrum release targets. Three believes there is therefore no reason why Ofcom cannot commit to making mobile spectrum available within a predefined timeframe.

Suggested framework for target-setting

- 3.6. Ofcom should distinguish between different categories of spectrum for the purposes of target-setting and business planning. In the long-term, when it comes to acquiring new spectrum the main factors for MNOs are:
- **propagation**, specifically how far transmissions on newly released frequencies can travel, how they will fade over distance and how they will penetrate fixed features such as buildings; and
 - **harmonisation** of standards for the use of newly released spectrum at the European and global level, which creates a degree of certainty that compatible equipment will emerge in the marketplace.

⁵⁰ Ofcom, *Ibid.*

- 3.7. Less important considerations that also affect the attractiveness of particular bands include:
- their **proximity** to other spectrum holdings and whether deployment is possible at the same sites; and
 - the **timing of the release of equipment** that is compatible with the newly released bands.
- 3.8. Taking these factors into consideration, it would be beneficial to operators if Ofcom were to divide existing and potential mobile spectrum into a small number of categories, based on its potential uses, which we set out below. Identifying spectrum categories rather than focussing on individual spectrum bands will have two primary benefits: (1) it will facilitate a greater degree of commitment by Ofcom to meet forecasted mobile demand through spectrum releases, and (2) greater levels of transparency and certainty will enable MNOs to better plan their network strategies.

Suggested spectrum categories

- 3.9. Three believes that mobile spectrum should be divided into three uses. These are:
- up to 3GHz;
 - 3-6GHz; and
 - spectrum above 6GHz (with a potential sub-division of 6-30GHz and 30-100GHz, considered below).

Up to 3GHz

- 3.10. Spectrum below 3GHz is suitable for providing wide area coverage within macro cells, although the costs of doing so will vary depending on the specific frequency. This spectrum is thus very well suited for actual mobile use. Notably:
- Early 2G networks used 900MHz to provide national coverage together with a small amount of 1800MHz spectrum. Later 2G networks were established providing national coverage using 1800MHz spectrum.
 - Following the 3G auction in 2003, Three built a wide area network using 2.1GHz spectrum.

3-6GHz

- 3.11. This spectrum is suitable for enhancing capacity when used with small cells and also possibly with very high density macro cells in urban areas. There are large blocks of contiguous frequencies available in bands between 3GHz and 6GHz for use by MNOs in the medium term.
- 3.12. However, its propagation characteristics are limited, so this spectrum cannot be used cost-effectively to provide wide area coverage. To illustrate, twice as many

3.4GHz sites would be required to cover the same area as 2.6GHz sites, the next highest capacity band.⁵¹

- 3.13. The physical limitations of spectrum in bands between 3GHz and 6GHz means that it is better suited to deployment with small cells, where the short ranges of antennae mean that interference between cells is much more straightforward to manage.

6-30MHz and 30-100MHz

- 3.14. Ofcom's recent consultation on the deployment of spectrum above 6GHz on 5G networks⁵² suggests that similar propagation characteristics exist between frequencies in the 6GHz-100GHz range with one focal point for distinction being between spectrum above and below 30GHz. However, as the potential uses of this spectrum within mobile networks are still being developed, this distinction may be less important than the distinction between other spectrum categories in the short to medium term.

Suggested next steps

- 3.15. In relation to each spectrum category, Ofcom should:
- forecast the minimum and likely mobile spectrum required to meet projected demand for traffic growth over a reasonably long time horizon (e.g. 10-12 years), taking into account the feasibility of alternative options available to MNOs to increase their existing capacity;
 - develop a roadmap for releasing spectrum, taking into account the timeframes within which harmonised standards for compatible equipment are expected to be finalised;
 - commit to releasing approximately defined amounts of spectrum within fixed time periods (e.g. within defined two-year slots); and
 - measure and communicate its progress against these targets at reasonable intervals (e.g. annually).

⁵¹ Frontier Economics, *Economic assessment of C-band re-allocation: A report prepared for the GSMA*, October 2013.

⁵² Ofcom, *Laying the foundations for next generation mobile services: Update on bands above 6GHz*, 20 April 2015, http://stakeholders.ofcom.org.uk/binaries/consultations/above-6ghz/5G_CFI_Update_and_Next_Steps.pdf.

5. Convergence and bundled services.

1. Convergence is transforming the UK telecoms market

- 1.1. Technological convergence between fixed, mobile and content distribution networks has blurred the boundaries between previously distinct subsectors of the communications industry. This in turn has enabled converged operators to pursue a strategy of bundling of services in neighbouring markets.
- 1.2. Although communications services have been sold together in the UK for some time, ever more services are being included in bundles, the most recent innovation being quad-play which comprises fixed telephony, broadband, television and mobile.
- 1.3. Although quad-play services in the UK are still in their infancy, the European experience demonstrates that quad-play take-up can grow quickly, particularly when led by fixed providers offering aggressive discounts on mobile.
- 1.4. In this section, we will set out why it is imperative that Ofcom formulates a framework for the *ex-ante* regulation of quad-play services as soon as possible. In particular, this is necessary to protect consumers and to address the significant anti-competitive risks associated with the bundling of services:
 - Firms can **leverage** their market power into neighbouring markets for individual services – for instance, by engaging in practices like cross-subsidisation and using bundling to exclude rivals from the mobile market.
 - There is an increasing trend for providers of multi-play services (particularly quad-play services) to **market** retail bundles in a **misleading way** – by advertising unachievably low headline prices for popular services (such as mobile), whilst burying the much higher cost of less popular services in the small print (such as fixed line rentals).
- 1.5. Before discussing questions of regulation and policy, we will first give an overview of market trends in the bundling of communications services. This will place our policy suggestions into context.

2. Technological convergence has paved the way for historically distinct products to be bundled together

- 2.1. Although multi-play services have been common in the communications sector for some time now, market liberalisation and technological convergence have played a key role in increasing the range of services offered in these bundles:
 - Multi-purpose IP-based networks have enabled the provision of different services over the same network. For example, services such as telephony, video and data, which were previously provided by separate networks (e.g. PSTN, cable networks, dedicated corporate links) can now be provided by the same platform. In the case of broadcasting, satellite technology and digital terrestrial transmission remain important transmission platforms,

although broadcasters and OTT providers are increasingly streaming programming content online.

- Fixed-line is developing towards providing a wireless and thus more mobile service – enabled by the increasing number of Wi-Fi hotspots outside the home and the deployment of femtocells providing mobile connectivity (e.g. 3G and 4G) inside the home. The result is that voice and SMS can be carried by either mobile technology (2G, 3G, and 4G) or Wi-Fi respectively.
- Next generation handsets such as tablets and smartphones have enabled users to access multiple services from one device. Combined with simple intuitive app-based operating systems have changed consumer interaction with the internet and online content significantly.

2.2. There are various combinations in which bundled services can be offered. Initially, bundles were sold as dual-play, then triple-play and most recently as quad-play bundles, which include mobile as an add-on.

3. There is an increasing trend in Europe for converged operators to deeply discount the mobile component of bundles

3.1. Experience in other European countries show that telecoms markets can tip rapidly in favour of bundled services. This is particularly the case when a fixed operator drives quad-play services by offering significant price discounts on the mobile element.

3.2. For instance, Telefónica's launch of the Movistar Fusion service in late 2012 caused dramatic changes in the Spanish market in just two years. Converged offers which include mobile now make up the large majority of all broadband sales in Spain.⁵³ This rapid growth has been fuelled by converged operators discounting mobile heavily as a bolt on to existing fixed double or triple-play bundles. This has not only driven the rapid uptake of quad-play, but also put very significant downward pressure on average mobile prices. The Spanish Telecoms regulator (CNMC) found that average household spending on standalone mobile fell by around €6 per month in 2013 compared to 2012.⁵⁴

Average spend per month on standalone fixed, standalone mobile and combined fixed and mobile bundles in Spain in 2012 and 2013 (Source: CNMC data)

Product	Average spend per month in 2012	Average spend per month in 2013
Standalone fixed	€35	€33
Standalone mobile	€22.6	€16.3
Combined fixed and mobile	-	€42.8
Implied discount for buying mobile in the bundle		40%

⁵³ These approximately 8 million connections account for almost 20% of the overall mobile market, where they have attracted a significant very large proportion of overall switching activity

⁵⁴ CNMC annual report, page 28, <http://data.cnmc.es/datagraph/files/Informe%20Telecomunicaciones%20CNMC%202014.pdf>.

3.3. Similar developments have been seen in other European countries. For example:

- In **Portugal**, Portugal Telecom pursued a similar strategy of discounting mobile through converged offers. ANACOM, the Portuguese regulator, reported that in Q4 2014, 73% of all private households subscribed to a multi-play bundle, and that over a third of these included a mobile bolt on.
- In **France**, converged offers account for over 40% of broadband sales – with Bouygues, Orange and SFR all offering fixed-mobile bundles as a competitive response to entry by Iliad/Free Mobile into the market.⁵⁵
- In **Belgium**, 17% of the customer base of the incumbent, Belgacom, is now on a bundle that includes mobile.⁵⁶ Belgacom likewise offered deep discounts on mobile in return for lower churn rates and therefore longer average customer lifetimes. In 2014 Belgacom experienced a customer churn rate almost 10 times greater on standalone products compared to quad-play bundles.

4. Bundled service offerings from converged operators are on the rise in the UK

4.1. Double- and triple-play services have been on offer within the UK for some time, but quad-play is only in its infancy. Ofcom estimates that, as at Q1 2015, only 2% of households in the UK had subscribed to quad-play services, as illustrated by the chart below:

Figure 13: Take up of bundled services in the UK

Figure 1.14 Reported take-up of bundled services



⁵⁵ <http://www.analysysmason.com/About-Us/News/Insight/Fixedmobile-bundling-Feb2013/>.

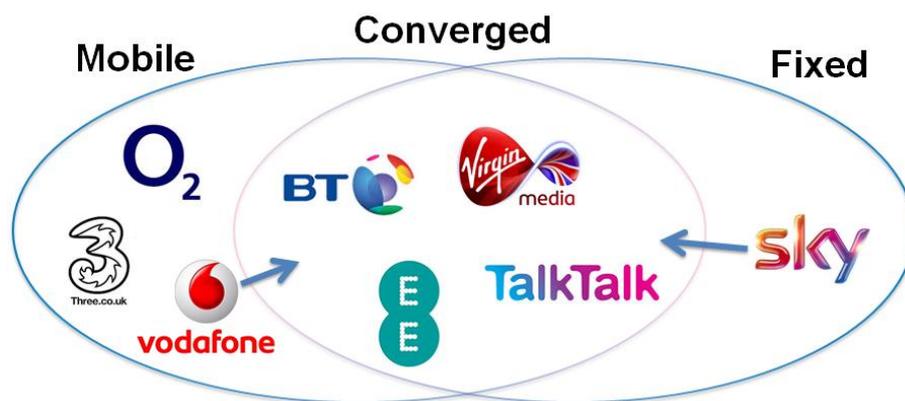
⁵⁶ <http://www.bmiresearch.com/news-and-views/confirming-the-importance-of-convergence-in-belgiums-telecoms-market>.

Convergence and bundled services. continued

Source: Ofcom Technology Tracker.

- 4.2. However, significant players in the UK mobile market are increasingly adopting a strategy based on convergence. BT, Virgin, TalkTalk and EE already provide quad-play services to consumers. Vodafone acquired Cable & Wireless in the UK in 2012 and launched a 'superfast' fixed broadband offering off the back of its fixed network in June 2015. Sky will add mobile services to its fixed broadband and Pay TV offering in 2016, on the back of an MVNO agreement with O2.

Figure 14: Convergence is blurring fixed mobile boundaries



Source: Three

- 4.3. These developments are transforming the UK telecoms market. Based on the experience in other European markets and the strategies followed by UK operators, the success of quad-play bundles in the UK is looking increasingly likely in the short to medium term.
- 4.4. Bundled services pose challenges for regulators because they obscure the boundaries between different product markets that have historically been regulated separately, namely:
- **Leveraging by dominant firms in neighbouring markets:** Bundling is anti-competitive if a dominant firm in one market leverages its market power in a neighbouring market in order to exclude rivals. A firm with market power in market A may leverage its position into a more competitive market B through bundling. Consumers taking up the bundle may then be less likely to purchase mobile on a standalone basis, with the result that rivals are excluded from Market B. In consequence, Ofcom should formulate an ex-ante framework to prevent this type of competitive behaviour from emerging.

- **Misleading advertising of bundled products:** Three has noticed an increasing trend for providers of quad-play and other bundled services to be vague about what the package includes, and what package elements consumers are paying for.

4.5. The rest of this section explains Three's position on misleading advertising of bundled products in more detail.

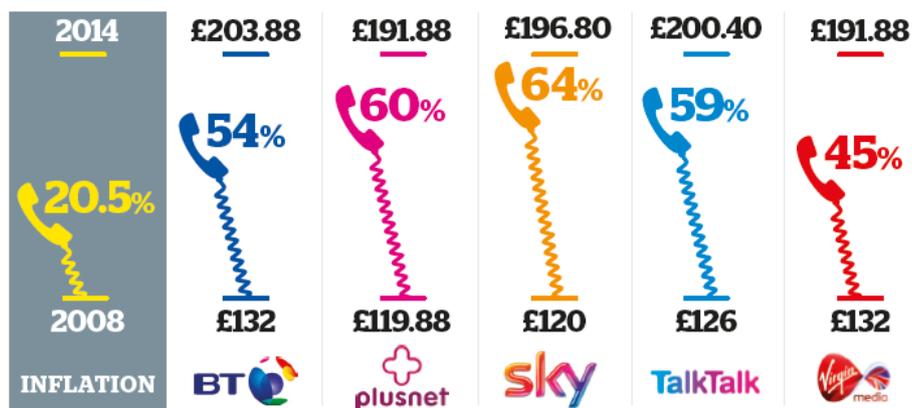
5. Misleading advertising of bundled products

Misleading advertising is increasingly common

- 5.1. Over the course of 2015, there has been a marked increase in misleading marketing of bundled services, in particular in relation to the advertising of prices. There is a growing trend for bundled offerings to display a lack of clarity as to what the package includes, and what the customer is paying for. As a result, it is increasingly difficult for consumers to compare retail offerings.
- 5.2. In particular, adverts for bundled services often lead with an attractive, above the line, headline price for one element of the quad-play service which is unachievable in reality. It is also noteworthy that the non-advertised but mandatory services (particularly high fixed line rental costs) are often excluded from the headline price. In addition, the total monthly cost is also often not stated.
- 5.3. Moreover, the advertised pricing of one service is usually dependent on the customer taking up an ongoing subscription to other services, a detail which is often buried in the small print. In some cases, certain elements of the bundle are marketed as being 'free', but in reality are being cross-subsidised by other highly-priced services in the bundle.
- 5.4. Many such offers require mandatory subscription to fixed line rental, often at a cost of approximately £16-£20 a month. This too is often 'hidden' in small print, or in the online world, only added as a cost to the shopping basket very late in the journey. Other costs such as installation may also apply and are not made clear in headline advertising.
- 5.5. The issue of hidden line rental costs is problematic, given that this is an unpopular service. Fixed telephony is seen by many consumers as anachronistic, of poor value or unnecessary. However, it paradoxically often constitutes the bulk of the cost of packages advertised as 'free' or with misleadingly low prices.
- 5.6. This is only aggravated by the fact that line rental costs have increased significantly in recent years over and above inflation. As Figure 15 illustrates, multi-play providers have increased the cost of line rental by as much as 64% over a 6-year period from 2008 to 2014. These increases significantly outstrip

the cumulative inflation of 20.5% for the same period. Wholesale line rental costs decreased by 9.6% during this period.⁵⁷

Figure 15: Inflation in fixed line rental



Source: Which?⁵⁸

- 5.7. Such misleading advertising confuses and takes advantage of customers and also threatens to distort competition in the marketplace. This is particularly so as providers such as 'Relish' now provide broadband as a standalone service, without requiring any payment for unnecessary line rental.
- 5.8. This creates the unusual scenario in which CPs who currently bundle fixed line and broadband services, lead with much lower headline prices for the broadband element than CPs who do not require an additional payment for line rental. This makes it very hard for customers to compare the actual costs of the services offered.
- 5.9. Similarly, we have seen deeply discounted headline offers for mobile SIMs advertised. However on closer analysis such prices are dependent on customers signing up to additional broadband and line rental services at considerable cost.

⁵⁷ Source: Three. Details of BT's wholesale prices can be found at: <https://www.openreach.co.uk/orpg/home/products/pricing/loadProductPriceDetails.do?data=%2BrBpMW3XM9acnyJyysVXIUueE80IBTIV7sFIBygiOy9UNeIS4WkJBRh6z%2FRUAlt8maxtqrEro1A7w5V8nzAZpQ%3D%3D>.

⁵⁸ <http://blogs.which.co.uk/technology/app-review/bt-sky-and-talktalk-line-rental-hikes-we-reveal-how-gone-up-in-six-years/>.

Case study: TalkTalk

By way of illustration only, these trends can be seen in the marketing of two TalkTalk products – *Simply Broadband* and the *All in SIM* product.

Simply Broadband is somewhat of a misnomer, as the service is not a standalone broadband product. The broadband connection is advertised as being free for the first 12 months, but it is tied to a line rental service that carries a monthly cost of £17.70. The details are hidden in the small print, which indicates that a minimum term of 18 months applies. After the initial 12-month period expires, a monthly broadband subscription fee of £7.50 will apply (in addition to the fixed line rental fee), which is “subject to change”.

TalkTalk’s *All in SIM* package is advertised at “£24 a month” as the cheapest unlimited voice, data and SMS SIM only tariff in the market. However, the fine print indicates that the *All in SIM* is not available as a standalone product either, and must be purchased with other TalkTalk packages.

As the example below illustrates, if the *All in SIM* is ordered with the *SimplyBroadband* product, the monthly cost of the package very quickly escalates to over £40 per month – which is well above the headline prices advertised separately for both products.

Order form for TalkTalk’s ‘free’ *SimplyBroadband* and *All in SIM* offers (Source: TalkTalk)

Great news - SimplyBroadband is available and **FREE for 12 months!**

SimplyBroadband

- ✓ 100% totally unlimited broadband
- ✓ FREE HomeSafe®
- ✓ Advanced wireless router included

Estimated Speed
This is the speed we expect you to achieve. [Read how we get to this estimate](#)

Download: **8.5Mb**
Speed range between **5.3Mb** and **12.6Mb**

Add All-in SIM
Add our unlimited mobile SIM now or at any time during your contract.

- ✓ Unlimited minutes
- ✓ Unlimited texts
- ✓ Unlimited data
- ✓ Flexible 30-day rolling contract

£24 a month

[View Plan Details](#)

Your basket

SimplyBroadband	FREE Free for 12 months
Line rental	£17.70
All-in SIM 30-day rolling contract	£24.00
Monthly total inc VAT	£41.70

One off payments
These will appear on your Bill:

New Line Connection Fee	£50.00 FREE
Router Delivery Charge	£6.75

5.10. As an additional layer of complexity, if the subscriber decides they no longer wish to subscribe to the fixed line or broadband services, the mobile element of the deal is structured so as to immediately become more expensive than the advertised price.

Misleading advertising leads to consumer harm

- 5.11. The Citizens Advice Bureau (“**CAB**”) has identified the significant consumer harm that can result from the misleading marketing of these bundled / tied services. In July 2015, the CAB published a report⁵⁹ which concluded that *“price promises made by broadband providers are misleading customers and costing them up to six and a half times more than adverts imply”*.
- 5.12. The CAB’s research concluded that (among other things):
- hidden charges such as line rental, starter fees for a new contract and delivery costs, mean on average monthly costs are often over three times the initial price advertised;
 - misleading broadband adverts can make it harder for consumers to shop around to get the best deal;
 - fixed line rental can add as much as £16.99 to the advertised monthly fee, making it the most expensive additional cost.
- 5.13. Three agrees with the findings of the CAB report and calls on Ofcom to act, together with the ASA where appropriate, to put an end to *de facto* misleading practices.

6. Options for regulating misleading advertising

- 6.1. There are a number of options available to remedy the consumer harm caused by misleading advertising. However, we advocate that any remedial action should be based on the following principles:
- There should be a ban on headline prices which are conditional upon an unavoidable fixed monthly charge. For the reasons given above, this is inherently misleading.
 - There should be a requirement for the total financial and contractual commitment to be made clear to consumers in advertisements and at the point of sale (including the line rental cost).
- 6.2. Practically, this could be achieved by the Advertising Standards Authority and Ofcom taking a co-ordinated approach to the advertising of bundles.
- 6.3. We believe that the current advertising codes prohibit misleading marketing, this is a problem of such wide application that the ASA should take proactive enforcement action to prevent misleading pricing of content and telecoms

⁵⁹ <https://www.citizensadvice.org.uk/about-us/how-citizens-advice-works/media/press-releases/broadband-providers-cashing-in-on-false-promises/>.

services across the industry. The ASA could also produce additional clarificatory guidance to conclusively prohibit these practices.

- 6.4. While misleading advertising is primarily a marketing issue, Ofcom also has a duty to ensure that consumers are properly able to understand and compare the entire package price and key contractual commitments being offered by service providers so as to ensure that consumers can make informed choices.
- 6.5. Ofcom's powers to regulate bundles that include TV content derive from various sources in European and domestic law – including the extensive broadcasting provisions in the Communications Act 2003, generic consumer protection law and competition law.
- 6.6. Ofcom should ensure that any interventions it may make under its statutory powers in relation to bundles with TV content introduces the following requirements:
 - mandating transparency in the publication of information relating to bundled offerings and prohibiting mis-selling at the point of sale;
 - requiring CPs to allow consumers to switch between bundles, similar to the number portability rules in GC 18, but on a Gaining Provider Led basis; and
 - publishing guidance on matters that require further clarity.
- 6.7. If Ofcom is not confident that it has sufficient legislative powers to take remedial action, then we would urge Ofcom to work closely with Government to ensure that it is appropriately enabled to regulate bundled services, including emergent quad-play services. In such an instance, Ofcom together with Government should urgently expedite the appropriate statutory amendments to prevent consumer harm or any distortion of competition in the communications market resulting from the growth of multi-play services.

6. Other opportunities for better regulation.

1. How regulation could be better

- 1.1. In section 2 (*Approaches to regulation*) we outlined our vision of what ‘good’ regulation should look like and our concerns that the approach taken to the regulation of the sector by Ofcom does not always meet this standard. In addition, there are other aspects of the regulatory system that require amendment by parliament. In such instances, Ofcom should work with government to ensure that the necessary reforms are implemented.
- 1.2. Ofcom has previously cited the ‘on the merits’ appeal standard for communications as a key barrier to efficient and effective regulation. Three agrees that this issue requires legislative overhaul. We encourage Ofcom to continue lobbying government on this issue.
- 1.3. However, there are other areas where Ofcom could exercise its existing powers more robustly. In particular:
 - Three believes that Ofcom should review its extant rules more often, to ensure that they remain appropriate and up to date with developments in technology. A notable area for reform is the need to extend the scope of the General Conditions of Entitlement (“**GCS**”) to over the top services (“**OTT**”).
 - Ofcom is often too reactive and focused on the micro-management of outcomes. This approach does not support fair and open competition in the market or deliver the best outcomes for consumers. Regulatory decisions and in some cases inaction have hindered meaningful progress or created sub-optimal outcomes for consumers – such as was the case with the lengthy delays in introducing a gaining provider led (“**GPL**”) mobile switching regime, and Ofcom’s overly cautious approach to coverage maps.
- 1.4. We discuss each of these issues in turn below.

2. Regulatory appeals

‘On the merits’ appeals

- 2.1. In a fast moving and dynamic sector, it is important that the regulatory framework keeps up to date with new business models and changes in technology. For this to be achieved, the regulator needs to be agile, able to make fast and effective decisions – particularly those which challenge incumbent advantage and drive competition.
- 2.2. The current “on the merits” regime for appeals of decisions by Ofcom, is slow, cumbersome and allows for a judicial rehearing of every Ofcom decision by the Competition Appeal Tribunal (“**CAT**”). This acts as a significant barrier to innovation and reform as it enables litigants to leverage the judicial process for commercial advantage, by threatening to appeal whenever they are unhappy

with the decision. It is the view of Three that this has inhibited Ofcom's ability – and appetite - to intervene in the market and promote competition.

- 2.3. For consumers and competitors, this has meant less reform and the reforms that do happen are implemented slower. The likelihood of the appeal has also led to a steady and, ultimately, unhealthy increase in the length of the overall consultation process as well as delays in regulatory decision making. This has driven up costs and increased market uncertainty. Independent analysis carried out by Economic Insight using Government data estimated that reform in line with Government proposals would bring a net benefit of reform of £238m—largely the result of faster appeals leading to more reform, lower prices and more competitive offerings.

The current system of appeals is not sustainable

- 2.4. Three recognises that effective systems of appeal provide an important mechanism for holding regulators to account as well as enabling companies to challenge decisions, particularly where these rest on errors of law, errors of fact or cause material detriment to the business concerned.
- 2.5. However, we believe that some operators have seen the appeal of Ofcom decisions as a largely risk free one-way bet, as well as an opportunity to re-open regulatory decisions to pursue a commercial advantage. The cost of an appeal to operators is relatively small compared to the potential gain that could result from a favourable outcome from the CAT or Competition Commission, thus the commercial case for an operator to appeal is strong. The current standard of review has also enabled some appellants before both the CAT and the Competition Commission to consistently argue that each and every element of Ofcom's decisions, including (in particular) where Ofcom is exercising its regulatory judgment, should be subject to a detailed review on the merits and the appeal bodies should overturn Ofcom's decisions where they prefer an alternative solution to that decided upon by Ofcom.
- 2.6. As a consequence, the process of appeal ties up disproportionate resource both with operators but also at Ofcom. Since the Communications Act 2003 came into force, Ofcom has been appealed 46 times, leading to 32 Tribunal proceedings. It is the experience of Three that the frequency and length of appeals under the Communications Act 2003 have risen to the detriment of the overall market.
- 2.7. Overall, it is increasingly clear that the balance between appropriate review and the ability of the regulator to take decisions in the interest of the market is under severe strain. It is telling that although Ofcom's decisions are rarely overturned, they nevertheless account for significant resource. There should be little doubt that this has stifled Ofcom's ability effectively to carry out its statutory duties either in the public interest or to the benefit of the sector.
- 2.8. Three believes, that unreformed, this situation is unsustainable and will lead to regulatory logjam and inertia. The communications sector has become increasingly complex and, in the growing absence of brave, market shaping decisions intended to improve competition and open up the sector to new and innovative products (such as ensuring the timely release of new spectrum and

the efficient and fair use of new spectrum, bringing down the price of termination rates and taking action to reduce Donor Conveyance Charges), Ofcom has been compelled to make seemingly less contentious decisions intended to secure consumer facing outcomes on mid-contract price changes, bill shock, additional charges, and mobile “quality of experience”. However, these too have been subject to appeal from operators keen to protect inherent and systemic advantages.

- 2.9. Worse, regulatory decisions and particularly those relating to competition, necessary for the future health of the communications sector have been postponed, sometimes indefinitely. For example, the failure to resolve the appropriate level of the Donor Conveyance Charge in respect of disputes brought in 2007 to a level that is cost orientated is emblematic of the logjam and delay that characterises the communications sector.⁶⁰

The benefits of change

- 2.10. There is clear that there are real and substantive economic benefits to be had from a change to the standard of review from ‘on the merits’ the proposed reforms. In the 2011 DCMS consultation on the reform of the appeals framework, the Research commissioned by Three has estimated that given a reasonable interpretation of the resource costs associated with the process of appeal are lower, then the regulator is incentivised to make better decisions in the first instance, that deliver optimal benefits to society and are less likely to be aligned with the narrower interests of some established businesses. Similarly, the adoption of a judicial review standard as has been proposed by Government on three occasions will limit the scope for the introduction of new/additional evidence at the appeals stage and is likely to mitigate incentives to withhold evidence – and in so doing improve the ability of the regulator to make a good decision in the first instance.
- 2.11. Furthermore, there is compelling evidence from others to suggest that under appeal systems, where the standard of review of regulatory decisions is particularly high, and akin to review on the merits, then the regulator may become disinclined to make decisions that it considers likely to lead to an appeal, or may pay disproportionate attention to the submissions and interests of a party it understands to be more likely to bring an appeal against its decision.
- 2.12. Ofcom must work with government to ensure that the regime for regulatory appeals for communications is reformed. Without this vital change, the ability of the regulator to intervene effectively in markets will continue to be unduly constrained.

⁶⁰ Ofcom first sought to reduce the cost of Donor Conveyance Charges as a consequence of a dispute brought by Three in August 2007. That decision was appealed in October 2007. At the time of writing, despite the withdrawal of the appeal in May 2010 and a series of complicated interactions between Ofcom, CAT and operators, Donor Conveyance Charges are still not cost orientated and are remain an obstacle to fair competition.

3. General Conditions of Entitlement

- 3.1. As a priority in mobile, Ofcom should expedite the review and update the GCs that communication providers are subject to under the 2003 Communications Act. Some GCs are in need of substantial reform, to reflect not only the substantive changes in technologies and usage, but also to ensure that they function effectively to represent the interests of consumers. Regular review of the GCs would represent good practice, and ensure that regulation in the sector remains fit for purpose.

Case Study: GC 14

We believe that in certain cases a lack of clarity around General Conditions has resulted in regulatory investigations, even where operators act in good faith to comply with regulations. General Condition 14, which addresses operator obligations on customer complaints and has been a subject of regulatory focus, needs attention as it still lacks clarity as to the difference between a customer contacting an operator about a typical service issue and a customer feeling the need to make a complaint. In particular, these need to be defined so as to link the outcomes of regulations with their intended purpose.

The broad and all-encompassing definition has led to operators implementing differing processes for assessing and handling customer complaints, with the result being that meaningful comparisons of complaints data across networks is exceptionally difficult. In practice this can often mean negative outcomes for consumers, resulting either from the unnecessary escalation of their complaint, or the diversion of operator resources from outcomes to outputs which are simply not in the interest of consumers.

- 3.2. Three is also concerned that the application of the GCs is distorting the market, by skewing the burden of regulation against providers of licensed services, including licensed mobile phone services. In particular, the GCs do not offer comparable protections to customers who use OTT services, to which we now turn.

4. OTT services

- 4.1. OTT services are increasingly substituting traditional communications services. OTTs like Skype, WhatsApp and Netflix provide functional substitutes for voice, SMS and broadcasting services. However, OTT services are subject to a different regulatory regime, as the EU regulatory framework and 2003 Communications Act focus on electronic communications services (“ECS”), which are defined with reference to “conveyance of signals”. The unequal application of sector specific regulation has in turn created an uneven playing field between OTT providers and traditional telcos.
- 4.2. Three has welcomed the use of these services and the technological innovation associated with them, but we also believe that an absence of regulation for OTT providers distorts the market.
- 4.3. Many OTT services are indistinguishable from mobile services in key respects. Customers who place a voice call via a mobile network or VoIP often do not distinguish between the two services except in relation to price. For end users,

the service is simply a voice call. Many consumers would be surprised to learn that VoIP and mobile calls are regulated under completely different rules.

- 4.4. The lack of sector-specific regulation for OTT services means that consumers are inadequately protected in relation to important issues such as 999 calls, transparency of billing and the like. This is because general consumer law does not provide any safeguards comparable to those of Ofcom. Where services are equivalent from a user perspective, OTTs and regulated CPs should be bound by the same sector-specific consumer rules.
- 4.5. There is a clear need for root and branch reform of the General Conditions, to make them fit for purpose and to level the playing field for providers. The focus should be on consumer expectation when using a service – rather than the nature of the provider of the service.

5. Switching

- 5.1. Fair and easy switching processes are the cornerstone of any successful and competitive market. In simple terms, dynamism and competitive movement in markets must not be inhibited by switching processes that create barriers or prevent consumers from taking advantage of the best deals. Effective switching processes are vital to incentivising operators to offer the best deals and services to their customers.
- 5.2. In the UK, it is therefore unfortunate that mobile customers have been saddled with a Losing Provider Led (“LPL”) system when they port their mobile numbers. LPL switching processes have been recognised as contributing to anti-competitive practices and high retail prices in other sectors such banking and energy, which have both seen recent switching reform and the introduction of GPL systems.
- 5.3. Any process which puts the losing provider in charge of the switch risks incentivising consumer harm. There is strong evidence that LPL processes lead to negative consumer outcomes. Ofcom’s own research has shown that 10% of people who switched service providers experienced a temporary loss of service.⁶¹ Moreover, the harm is not limited to those who engage with the switching process. Concerns about loss of service or phone number or other technical issues discourage significant numbers of consumers from switching.
- 5.4. Ofcom has been clear in its support for GPL switching, and has signalled its desire to introduce GPL into mobile since 2008. However, progress has been painfully slow, after an early attempt at reform failed due to a legal challenge. While Three recognises that the framework for appeals of regulatory decisions in communications has been a factor in this delay, we believe more should have been done to progress these reforms, especially given the consumer detriment being experienced.

⁶¹ Ofcom, *Consumer switching: consumer experience of switching mobile communications services and options for process reforms* (consultation), 28 July 2015, <http://stakeholders.ofcom.org.uk/consultations/mobile-switching/>.

- 5.5. We accordingly welcome Ofcom's decision to re-prioritise mobile switching. However, in Ofcom's most recent consultation, there is still serious consideration of other solutions rather than the optimal GPL solution. Ofcom has even suggested forging a voluntary agreement between operators, although it has been clear for years that most operators do not support a GPL process. After eight years of regulatory failure on this issue, Three does not believe that Ofcom should even be entertaining this debate.
- 5.6. Switching has been an example of Ofcom not being prepared to take the big decisions that will deliver fair and open competition. As a result, policy processes have tended to focus on the micro elements of the switching process rather than on the macro scenario – such as length of time it takes to switch. Ofcom must put forward a clear timetable to introduce GPL mobile switching; if necessary, with the support of Government to provide a legislative framework.

6. Ofcom coverage maps

- 6.1. Ofcom's recent work on comparable coverage maps is a further example of what we believe is a sub-optimal approach to regulation and ways of working. Three understands the concerns many customers have over a lack of or poor quality coverage and are supportive of work to improve the provision of information to consumers to enable them to make better purchasing decisions. However, we believe Ofcom's intervention has not given sufficient consideration either to the harm it was trying to address or the consequences of its proposed solution.
- 6.2. As a result of an over-cautious approach to coverage, this was not borne out by the experiences of the vast majority of mobile consumers, Ofcom's 4G maps varied significantly from those already published by individual MNOs. Three's coverage maps are already easily available on our website and our use of thresholds is underpinned by drive testing and consumer feedback. Our coverage maps are also used during the sales process to check whether customers have coverage at their homes and in other locations. We are fully confident that these maps are a true representation of our network coverage.
- 6.3. In spite of the concerns raised by industry in relation to these issues, Ofcom pressed ahead with publishing its own maps. Moreover, Ofcom did not engage sufficiently with the industry to secure the appropriate inputs and identify thresholds that were both comparable and an accurate reflection of actual coverage. Ofcom took the view that the maps would be updated regularly and such concerns could therefore be addressed on an ongoing basis.
- 6.4. However, the publication of Ofcom's maps not only distorted the true picture of operators' coverage, but has also misled and confused consumers. As a result of this conflicting information, it is likely that consumers will distrust the information presented on both sets of maps, exacerbating rather than tackling the original consumer harm.
- 6.5. Ultimately, we are concerned that this approach to regulatory intervention undermines the role of Ofcom. It was similar to that experienced during work on



Other opportunities for better regulation. continued

call-drop data, suggesting that such ill-thought and rushed actions are becoming part of a wider trend.

7. Answers to Ofcom's questions.

Below we provide short answers on the issues relevant to Three. Where applicable, we clearly signpost answers that correspond to specific sections of our consultation response.

1. **Should competition policy remain at the core of good availability outcomes for most consumers, complemented by targeted intervention as required?**

Q1 **Do stakeholders agree that promoting effective and sustainable competition remains an appropriate strategy to deliver efficient investment and widespread availability of services for the majority of consumers, whilst noting the need for complementary public policy action for harder to reach areas across the UK?**

Promoting effective and sustainable competition

Commercial rollout on a competitive basis should form the cornerstone of coverage policy. The availability of services should be complemented by robust, pro-competitive regulation designed to remove bottlenecks, particularly in wholesale markets. This is needed to decrease the costs associated with network improvement and expansion.

Moreover, to underpin Ofcom's mandate to promote competition, section 3(1) of the 2003 Communications Act should be amended to impose an explicit, standalone duty on Ofcom to promote fair and open competition in order to further the interests of consumers.⁶²

Public intervention in harder to reach areas

Three recognises that there are limits to what the private sector is able to deliver on commercial terms, and public intervention may be beneficial if it is proportionate and ensures the provision of service in areas in which it is financially unsustainable to extend coverage on commercial terms. However, Three cautions that any public intervention to extend mobile coverage to not-spots should:

- take into account the costs imposed on MNOs in relation to the expected benefits to society, as well as technological parameters of mobile services (such as network congestion, topography and other issues which cause fluctuations in the quality of mobile service), and

⁶² This should be encapsulated in the Communications Act as an additional duty to Ofcom's existing duties under section 3(1).

- be accompanied by action to remove systemic underlying competitive bottlenecks (such as high site rentals, unnecessary restrictions on the ability of MNOs to access sites and make repairs, burdensome planning processes and insufficient access to transmission) that have plagued other publically funded initiatives – notably the Mobile Infrastructure Project (“MIP”).

Case study: Mobile Infrastructure Project

Despite unprecedented collaboration between industry, central and local Government, and the targeting of intervention in areas currently without any mobile signal where the demand for coverage is greatest, the MIP has not been a success.

When launched, it was estimated that MIP would deliver approximately 550 sites. To date only 5 sites have been built. A further 126 potential sites are being progressed. However, the funding for MIP is due to end in March 2016, meaning that if these sites are to be completed they would need to complete formal planning and build in just under 6 months. It is highly unlikely that all, or even most of these sites, will be completed in this time.

Competitive bottlenecks of the nature described above are the reason for the failure of this project. These must be tackled if further improvements in mobile coverage or capacity are to be realised economically or efficiently.

Q2 Would alternative models deliver better outcomes for consumers in terms of investment, availability and price?

For the reasons given in paragraph 2.4 of section 2 (*Approaches to regulation*), Ofcom is too focused on engineering specific consumer outcomes rather than addressing inherent market flaws which led to them. It is Three's strong view that a greater emphasis on the ex-ante regulation of wholesale markets will deliver the best solution for consumers – by removing wholesale bottlenecks, delivering fair and open competition and deflating the costs of network rollout and expansion.

2. What more can be done through public policy to deliver truly widespread availability?

Q3 We are interested in stakeholders' views on the likely future challenges for fixed and mobile service availability. Can a 'good' level of availability for particular services be defined? What options are there for policy makers to do more to extend availability to areas that may otherwise not be commercially viable or take longer to cover?

Challenges to mobile service availability

See our response to Q1. Robust legislative and regulatory action is needed to remove bottlenecks such as high site rentals, unnecessary restrictions on the ability of MNOs to access sites and make repairs, burdensome planning processes and insufficient access to transmission.

Defining 'good' levels of availability

In defining 'good' levels of availability, Ofcom should bear in mind that it is far easier to define quality of service (“QoS”) standards for fixed line services than for mobile

services. Many factors affecting mobile network availability fall outside the control of MNOs – including network congestion, leaf density, building materials and the shape and dynamic of railway carriages.

Moreover, Ofcom should be mindful that regulatory decision-making also affects the ability of MNOs to effectively manage services thereby to optimise the consumer experience – particularly the release of timely and fair allocations of spectrum, traffic management and the open internet.

3. **Does convergence and consolidation in our sectors suggest new approaches or tools are required to deliver effective competition?**

Q4 **Do different types of convergence and their effect on overall market structures suggest the need for changes in overarching regulatory strategy or specific policies? Are there new competition or wider policy challenges that will emerge as a result? What evidence is available today on such challenges?**

See our comments in section 5 (*Convergence and bundled services*).

Q5 **Do you think that current regulatory and competition tools are suitable to address competition concerns in concentrated markets with no single firm dominance? If not, what changes do you think should be considered in this regard and why?**

No comment.

4. **What model of competition should future regulatory strategy focus on: full end to end networks; passive access to support end to end networks; or active wholesale remedies to deliver downstream competition?**

Q6 **What do you think is the scope for sustainable end-to-end competition in the provision of fixed communications services? Do you think that the potential for competition to vary by geography will change? What might this imply in terms of available regulatory approaches to deliver effective and sustainable competition in future?**

Fixed telecoms feature enduring economic bottlenecks – parts of BT's network where effective and sustainable competition is unlikely. BT continues to have the only truly ubiquitous network in the UK.

End-to-end competition is only viable in parts of the country and is mainly limited to Virgin (within its cable areas), which has recently announced plans to invest a further £3bn to expand its network footprint. In addition, a small number of players (such as CityFibre, Colt or Zayo) are deploying fibre networks in city centres, trunk routes between major population centres and mid-sized town and cities, but have a very limited network reach.

Outside those geographical areas, the majority of operators will continue to rely on wholesale access to BT's network. As set out in section 3 (*Structural*

separation from BT), in order to deliver effective and sustainable competition it is necessary to implement structural separation of BT.

- Q7 Do you think that some form of access regulation is likely to continue to be needed in the future? If so, do you think we should continue to assess the appropriate form on a case by case basis or is it possible to set out a clear strategic preference for a particular approach (for example, a focus on passive remedies)?**

See response to the previous question. Some form of access regulation will continue to be needed in areas where BT faces little or no competition. Three considers that competition based on passive access to BT's network is generally preferable to competition based on active products. Although passive access requires significant upfront investment, it allows operators to innovate and customise the services offered, and thereby differentiate themselves from BT.

- Q8 Do you agree that full end-to-end infrastructure competition in mobile, where viable, is the best means to secure good consumer outcomes? Would alternatives to our current strategy improve these outcomes, and if so, how?**

No comment.

- 5. Are there new or unresolved competition issues in digital communications services?**

- Q9 In future, might new mobile competition issues arise that could affect consumer outcomes? If so, what are these concerns, and what might give rise to them?**

See our comments in section 5 (*Convergence and bundled services*) and section 6 (*Other opportunities for better regulation*).

- Q10 Does the bundling of a range of digital communications services, including some which may demonstrate enduring competition problems individually, present new competition challenges? If so, how might these issues be resolved through regulation, and does Ofcom have the necessary tools available?**

See our comments in section 5 (*Convergence and bundled services*).

6. **Where regulation is required to promote competition, how can it best secure both efficient investment and effective competition during periods of significant investment in risky new assets?**

Q11 **What might be the most appropriate regulatory approaches to the pricing of wholesale access to new and, risky investments in enduring bottlenecks in future?**

No comment.

Q12 **How might such pricing approaches need to evolve over the longer term? For example, when and how should regulated pricing move from pricing freedom towards more traditional charge controls without undermining incentives for further future investment?**

No comment.

7. **Are there changes in competitive outcomes or the overall market context that might suggest the need to update or evolve the current model of fixed access network functional separation?**

Q13 **Are there any actual or potential sources of discrimination that may undermine effective competition under the current model of functional separation? What is the evidence for such concerns?**

See our comments and the examples given in section 3 (*Structural separation from BT*). In short, housing BT and Openreach under the same corporate roof creates endemic incentives for BT to discriminate in favour of its own downstream divisions. It is Three's strong view that UK consumers would benefit from structural separation of Openreach from the rest of BT.

Q14 **Are there wider concerns relating to good consumer outcomes that may suggest the need for a new regulatory approach to Openreach?**

See our comments in section 3 (*Structural separation from BT*).

Q15 **Are there specific areas of the current Undertakings and functional separation that require amending in light of market developments since 2005?**

See our comments in section 3 (*Structural separation from BT*) and section 5 (*Convergence and bundled services*).

Q16 **Could structural separation address any concerns identified more effectively than functional separation? What are the advantages and challenges associated with such an approach?**

See our comments in section 3 (*Structural separation from BT*).

8. **Should Ofcom do more to further support empowerment at each stage of the consumer's decision-making process?**

Q17 **What do stakeholders think are the greatest risks to continuing effective consumer engagement and empowerment?**

Three's retail propositions are based on consumer insight and feedback that we receive from individual customers via social media and our contact centres. These sources leave Three well-placed to respond to consumer concerns.

Ofcom's work in the consumer space is supported by a number of mechanisms – such as consultations with consumer forums, representations from consumer organisations, complaints to the regulator, Ofcom's own research and the work of the Ofcom Consumer Panel.

Three believes that Ofcom's work, together with the work undertaken by the industry, constitute a sustainable model for consumer engagement going forward.

Q18 **What indicators should Ofcom monitor in order to get an early warning of demand-side issues?**

Three has no response to this question.

Q19 **What options might be considered to address concerns about consumer empowerment at each stage of the decision-making process (access, assess, act)? What more might be required in terms of information provision, switching and measures to help consumers assess the information available to them? What role may Ofcom have to play compared to other stakeholders (including industry)?**

For Three's views on consumer empowerment, see our responses to Q17.

For Three's views on switching, see section 6.

In relation to information provision, Three recognises that there is a role for Ofcom to provide information on key issues that are of benefit to consumers – such as in relation to complaints, coverage and network performance.

However, the efficacy of some of the information published by Ofcom is questionable as data thresholds and metrics are often not standardised, with the result that data sets are not comparable. The following publication is a good example of this:

- *Consumer experiences of mobile phone calls* (August 2014) – This piece of research gauged consumer experiences from a mix of data obtained from CPs and Rootmetrics. Three questions the necessity of this report. The Rootmetrics data is already publically available online, and is moreover, incomparable to the data sets of CPs.⁶³

⁶³ <http://stakeholders.ofcom.org.uk/market-data-research/other/telecoms-research/consumer-experiences-mobile-phone-calls/>.

Moreover, Ofcom has published large amounts of information, some of which only has a very niche value. Moreover, some of this information replicates what is already in the public domain. Examples include the following:

- *Young people and communication: a snapshot of young people's smartphone use and attitudes towards communications* – No data was collected from Three. Rather, this was a piece of qualitative research which replicated the findings of a range of academic studies and market research.⁶⁴
- *Nuisance calls landline panel research 2015* (May 2015) – This publication replicated a great deal of existing information about nuisance calls, a very important topic. However, much of the information published by Ofcom is already widely-known within the industry.⁶⁵
- *Mobile phone usage: attitudes towards mobile phone functions including reception* (January 2013) – This publication was essentially a duplication of the annual consumer market report. It was unclear what purpose of the research was, as there was no stated objective.⁶⁶

Much of this work is unnecessary and places a significant strain on the resources of operators, the regulator and other industry stakeholders. Three accordingly urges Ofcom to take a more streamlined approach to the provision of consumer information. Specifically, Three suggests that Ofcom should primarily target specialist and vulnerable groups of consumers for whom important information is not readily available through mainstream sources and comparison websites – such as by targeting consumers who are deaf or hard of hearing.

9. **What more should Ofcom do to support better quality of service for consumers, in either competitive or less competitive markets?**

Q20 **Are there examples in competitive or uncompetitive sections of the market where providers are not currently delivering adequate quality of services to consumers? What might be causing such outcomes?**

The overall quality wholesale inputs that CPs receive from Openreach is poor, which compromises the quality of the retail services that BT's competitors can offer – discussed in our response to Q14.

Moreover, the quality of service rendered by OTT providers is inconsistent and patchy. This is particularly the case for VoIP calls, which are not subject to the same sector-specific QoS standards as traditional mobile voice calls. By way of illustration, there is no comparable obligation on OTT providers to maintain resilient services (such as in GC3) or to provide emergency calling to end users (such as in GC4). This is sub-optimal for consumers who substitute traditional telephony with OTT

⁶⁴ http://stakeholders.ofcom.org.uk/binaries/research/telecoms-research/Young_People_Smartphone_App_Research.pdf.

⁶⁵ http://stakeholders.ofcom.org.uk/market-data-research/other/telecoms-research/nuisance_calls_research/nuisance-calls-2015/.

⁶⁶ <http://stakeholders.ofcom.org.uk/binaries/consultations/mobile-voice-data-experience/annexes/usage.pdf>.

services. Please also refer to our comments in paragraph 4 of section 6 (*Other opportunities for better regulation*).

Q21 What further options, if any, should Ofcom consider to secure better quality of service in the digital communications sectors?

For the reasons given in paragraph 2.4 of section 2 (*Approaches to regulation*), quality of service can best be achieved by addressing wholesale bottlenecks, rather than engineering specific retail outcomes.

Moreover, there should be parity of regulation between CPs and OTT providers where there is a potential for consumer harm.

10. Are there opportunities for deregulation or simplification that will bring broader benefits whilst avoiding new risks to consumer harm?

Q22 Might there be future opportunities to narrow the focus of ex ante economic regulation whilst still protecting consumers against poorer outcomes?

See our answer to Q1 and our comments in paragraph 2.4 of section 2 (*Approaches to regulation*). In short, Ofcom should implement robust ex ante regulation to address wholesale bottlenecks in the market.

Q23 Where might future network evolutions, including network retirement, offer opportunities for deregulation whilst still supporting good consumer outcomes?

Three has no response to this question.

Q24 What are the potential competition and consumer protection implications of the rise of OTT services? Might the adoption of such services enable future deregulation without raising the risk of consumer harm?

See our comments in section 6 (*Other opportunities for better regulation*). In summary, it is Three's view that the playing field between OTT providers and traditional telcos should be levelled where this is necessary to protect consumers.

This leaves Ofcom with two options: (1) to ease sector-specific consumer protection rules applicable to traditional telcos, or (2) to extend sector-specific regulation to OTT providers.

Three believes that a mix of the two approaches is appropriate. Generic consumer protection law is not sufficient to regulate sector-specific issues that may arise in relation to OTT services. Accordingly, Ofcom should impose sector-specific rules on OTT providers under the Communications Act where possible. In parallel, Ofcom should remove existing regulation on telcos where this is too heavy handed (such as in relation to GC14).

Q25 Are there any areas where you think that regulation could be better targeted or removed in future? What would be the benefit of deregulation as well as the

main risks to consumers and how these could be mitigated? Please provide evidence to support your proposals.

Ofcom should target regulation where required in order to maximise consumer and competition outcomes – particularly where the existing regulatory framework is incomplete or fragmented (as in the case of bundled services) or where no regulatory framework currently exists (as in the case of OTT services).

Ofcom should remove regulatory rules that are too heavy-handed (as is the case with GC14).