Three's response to Ofcom's Wholesale Local Access (WLA) Market Review

1. Three welcomes Ofcom's consultation on the proposed markets, market power determinations and remedies published on 31st March 2017.

2. In summary, [✂]. This can be expected to bring significant benefits to UK consumers.

3. However, Ofcom's proposals in its WLA market review are [✂]. In its companion consultation on Duct and Pole Access, Ofcom proposes to allow telecoms providers to access BT's duct and poles in order to deploy alternative fibre networks, but only if the purpose is primarily the delivery of broadband services to consumers.

4. This usage restriction would prevent Three from using BT's infrastructure to [✂].

5. This approach could [✂]. This does not seem consistent with Ofcom's strategic objectives or the public interest at large.

6. In Three's view, Ofcom would be more likely to secure its strategic objectives as follows:

    a. By ensuring unrestricted access to BT's duct and poles in its Duct and Poles consultation; or alternatively

    b. By treating FWA and WLA as sufficiently substitutable in this consultation. Widespread availability of a FWA product with low switching costs and competitive pricing can be expected to materially constrain fixed broadband access at retail level, and indirectly constrain copper, fibre and cable WLA. Therefore, Ofcom should allow use of BT's duct and poles for FWA services during the review period, even if Ofcom were to maintain its proposed usage restrictions.

Background

7. In its recent Strategic Review of Digital Telecommunications Ofcom has signalled a strategic shift from passive to active remedies in order to reduce the country's reliance on Openreach. Ofcom's aim is to promote the large-scale roll-out of ultrafast broadband networks as an alternative to BT's planned deployment of (mostly) copper based technologies.

8. Ofcom has set out its ambition of achieving "full competition between three or more networks for around 40% of premises".[1] Ofcom believes that network-based

[1] Paragraph 1.4, DCR: Strengthening BT's strategic and operational independence, Ofcom, July 2016.

competition is the most effective spur for investment in high quality fibre networks. Ofcom is implementing its new policy via the Wholesale Local Access market Review in the first instance.

9. Three fully supports Ofcom's ambition in this area. The emergence of competing fibre networks is critical for [✂] to the benefit of UK consumers.

Three plans to [✂]

10. Three and EE source their mobile backhaul via Mobile Broadband Network Limited (MBNL), a 50/50 joint venture that manages the operation of Three and EE's Site Share and 3G technology share.

11. Following the CMA's approval of BTEE Three seeks to [✂].

Figure 1: [✂]

12. Three has already [✂]

13. The speed and cost of [✂] depends on the availability of alternatives to BT. As shown below, MBNL's choice of backhaul provider has traditionally been limited to BT Wholesale (BTW), Virgin Media (only in areas where it has a cable network) and self-supplied microwave circuits (typically lower range, lower capacity circuits at the edge of the network).

Table 1: Backhaul providers to MBNL

Supplier	Approx # of sites
MBNL self-supplied microwave	✂
BTW-only	✂
BTW and Virgin	✂
Virgin Media only	✂
Total Shared MBNL sites	✂

Three [✂]

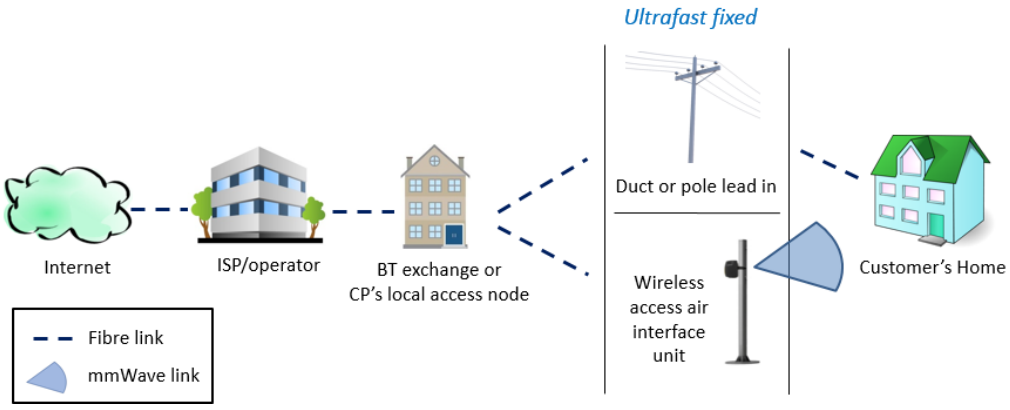
14. On 31 May 2017 Three completed its acquisition of UK Broadband Limited, a provider of broadband services to homes and businesses via FWA technology. UK Broadband (UKB) currently operates under the Relish Brand and provides FWA broadband services to 17,000 customers from approximately 150 sites in Central London and Swindon.

15. Three's acquisition of UKB [✂].

16. [✂]. Like a traditional fixed network, a FWA network uses fibre from the local BT exchange (or CP's local access node) to the "last drop", where the network connects to individual homes and businesses. [✂]. In a FWA network the last drop is then provided

wirelessly, as opposed to a wired connection in traditional fixed networks (i.e. a drop-wire from a pole, buried fibre or an underground cable).

Figure 2: Fixed vs FWA network



17. Historically, FWA was not competitive in terms of speed and was typically deployed in rural areas only, where other technologies were uneconomic. FWA can now be deployed as the last mile connection everywhere, in urban and rural areas. This creates a much bigger market, increases competition and drives down network and customer premises equipment costs.

18. As set out below FWA is increasingly competitive with other fixed technologies in terms of cost and performance. FWA speeds were previously limited by licensed spectrum owned by MNO but can now provide comparable speeds to FTTP. FWA can be cheaper to deploy than FTTP, as there is no need for new fibre drop-wires or digging up roads.

Unrestricted Duct and Pole Access is needed to increase competition in the Wholesale Local Access (WLA) and leased lines markets

19. Improved access to BT's duct and poles is critical to increase competition in the WLA and leased lines markets and enable the emergence of [✂].

20. The current PIA remedy allows access to BT's ducts and poles only for the purposes of deploying broadband access networks for business and residential customers, but not leased lines or FWA services. This usage restriction has undermined the success of the PIA remedy and has resulted in limited deployment of rival fibre networks. Fibre deployment by Cityfibre, Colt, Level 3, Zayo, etc. has been largely limited to small towns and cities, business districts with high user densities (such as central London and other large cities) and aggregated trunk routes between major population centres.

21. Usage restrictions are fundamentally inconsistent with Ofcom's policy of encouraging the emergence of scale fibre networks. Investment in fibre networks is very costly and risky due to demand uncertainty, large sunk costs and long payback periods. The

business case depends on being able to generate as many different revenue streams as possible. Economies of scale and scope and BT's incumbency advantages have so far proven hard for new entrants to overcome and have inhibited market entry by new players.

22. In the companion Wholesale Local Access Market Review consultation on Duct and Pole Access remedies, Ofcom proposes to relax the current PIA usage restriction. Ofcom intends to allow telecoms providers to access to BT's duct and poles provided the purpose of the network deployment is primarily the delivery of broadband services to consumers.[2] Ofcom believes that this restriction is needed to ensure that i) the remedy is sufficiently limited to addressing BT's market power in the WLA market; and ii) prevent BT's rivals from using PIA only to build a limited number of high value point-to-point leased lines connections.[3]

23. However, Three does not [✂]. Ofcom's approach would not allow Three (or a dark fibre provider acting on Three's behalf) [✂]. This does not seem consistent with Ofcom's strategic objectives or the public interest.

24. In our response to Ofcom's Duct and Pole consultation, Three will explain the need to remove usage restrictions altogether (or, at least, to adopt a broader reading of the legal requirements of the market review process), in order to reduce the costs and time required to deploy fibre and build ultrafast broadband networks [✂] at scale.

Alternatively, Ofcom should include FWA in the Wholesale Local Access (WLA) market

25. In the WLA market review Ofcom places FWA in a separate market to WLA. Ofcom provisionally concludes that for most customers FWA is unlikely to be a close substitute for broadband services over copper, fibre or cable for this market review period. Ofcom has based its decision on the following factors:

    - limited functional substitutability with fixed broadband due to quality differences;[4]
    - existence of up-front switching costs; and
    - low levels of take-up of FWA, particularly outside rural areas.

26. We address Ofcom's analysis of each of these factors in the sections that follow. In summary, Ofcom's analysis of demand-side substitutability is unduly static. Ofcom fails to account for relevant factors which will materially increase the competitive constraint exerted by FWA over the forthcoming three-year market review horizon.

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[2] https://www.ofcom.org.uk/__data/assets/pdf_file/0008/101051/duct-pole-access-remedies-consultation.pdf
[3] Paragraph 4.72
[4] See paragraph 3.73 of WLA Market Review - Volume 1, Ofcom, March 2017

27. In particular, by the end of the market review period [✂]. Widespread availability of a functionally substitutable FWA product with low switching costs and competitive pricing can be expected to materially constrain fixed broadband at a retail level, and in doing so indirectly constrain copper, fibre and cable WLA. Ofcom must therefore widen its product market definition for WLA beyond copper-loop, cable and fibre to include local access provided via FWA technology.

Functional substitutability

Ofcom's analysis is unduly focussed on rural FWA deployments

28. Ofcom's analysis of functional substitutability between FWA and fixed broadband is anchored around the quality of service provided by rural deployments of FWA. Such deployments are typically designed to provide a backstop solution in places where a fixed broadband connection is not available. Many of these deployments are community schemes which have received public funding as part of specific interventions by local and regional government.[5]

29. Given the absence of overlapping fixed coverage it is therefore inevitable that such deployments are unlikely to exert a competitive constraint. In contrast Ofcom appears to have attached little weight to the quality of service provided by those commercial FWA deployments that are specifically marketed to compete directly with fixed broadband.

30. For example, the Relish FWA product is marketed as a credible alternative to the fixed broadband services of BT and Virgin Media in Central London, offering internet access without line rental charges, flexible twelve month or one month contract terms and same or next day delivery, all of which is designed to encourage switching away from fixed broadband providers.

Ofcom's analysis of current speed differentials is incorrectly framed around the cheapest FWA packages

31. Ofcom's analysis of FWA download speeds[6] understates the quality of FWA currently provided by selectively reporting download speeds relating to the cheapest possible FWA tariffs.

32. For example AirBand advertises download speeds of up to 30Mbit/s[7] at a monthly cost of £20 per month. In contrast Ofcom's analysis only references the download speed (10 Mbit/s) associated with a cheaper tariff of £10 per month. Similarly, whereas County Broadband advertises packages with download speeds of 16 Mbit/s and 24

[5] For example the Hebrides FWA scheme referred to by Ofcom in its analysis is part-funded by the EU and Scottish Government (source: www.hebrides.net/). Similarly, County Broadband FWA has received financing from The European Agricultural Fund for Rural Development and the Diocese of Chelmsford (source: www.countybroadband.co.uk/about/).

[6] Table 3.16, WLA Market Review - Volume 1, Ofcom, March 2017

[7] https://home.airband.co.uk/broadband-packages/

Mbit/s for £19.99 and £29.99 per month respectively[8], Ofcom's analysis references only the download speed associated with its £9.99 per month basic package (6 Mbit/s).

33. Table 2 below revises Ofcom's analysis of download speeds by using those packages closest to fixed broadband pricing points, for the same set of FWA providers considered by Ofcom. This is the most relevant frame of comparison given that consumers are more likely to switch, following a SSNIP in fixed broadband, to those FWA packages which are most closely aligned to fixed broadband (in terms of both quality and price).

Table 2: Comparison of FWA broadband packages – revision of Ofcom analysis

Service Provider	Tariff	Max download speed (Mbit/s)	Monthly usage cap (GB)	Monthly charge (£)	Setup/Installation costs (£)
Hebrides	Residential 2000	2	30	29.99	19.99
AirBand	Home	30[1]	60-80	20.00	125.00-150.00
	HomePlus	30[2]	Unlimited	25.00	125.00-150.00
County Broadband	NGA Home Standard Plus	16	120	24.99	99.00
	NGA Home Prime	24	120	29.99	99.00
AirNet	Wavelink	20	500	27.00	120.00-200.00
Relish	Home Unlimited	40	Unlimited	20.00	0.00

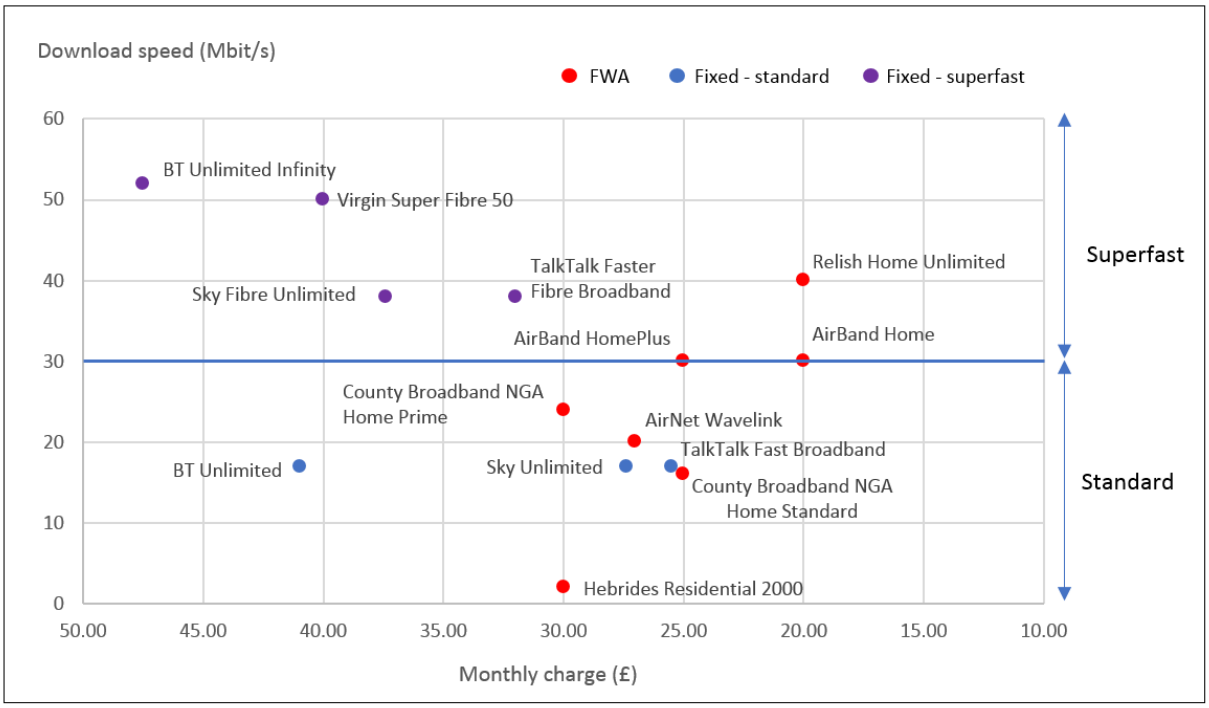
Notes: (1) and (2) average speeds available in the area as achievable by 70% of users
Sources: Hebrides, AirBand, County Broadband, AirNet, Relish,

34. To illustrate this point further, Figure 3 below plots the price and quality of selected FWA and fixed broadband packages. While this is not intended to be a complete analysis of the market (and uses only those providers presented by Ofcom) it shows that there are already a number of FWA deployments that provide equivalent (and in some cases better) download speeds to superfast and standard fixed broadband packages.[9]

[8] https://www.countybroadband.co.uk/residential/

[9] Notwithstanding the fact that FWA deployments can already offer equivalent speeds to some superfast fixed broadband packages, we note that Ofcom has considered and ruled-out defining separate product markets for standard, superfast and ultrafast broadband. It is therefore only necessary to demonstrate that FWA is likely to constrain standard fixed broadband over the forthcoming market review horizon.

Figure 3: Price-quality comparison of FWA and fixed broadband packages



Sources: Hebrides, AirBand, County Broadband, AirNet, Relish and Table 3.10 WLA Market Review - Volume 1, Ofcom, March 2017

35. This finding is consistent with the European Commission's state aid decision on the UK's national broadband scheme in 2012 which acknowledged that:

> "*Technology has evolved and some fixed wireless access solutions can have now similar characteristics than wired NGA solutions such as FTTC and are able to deliver comparable services. Notably some fixed wireless access (FWA) networks, which bridge the last 100-200 meters to the homes with high capacity wireless links are often now comparable in speed to FTTC.*"[10]

36. The absence of large quality differentials at similar prices, increases the likelihood that customers would be willing to switch to FWA in the event of a SSNIP in fixed broadband.

Ofcom's analysis is not sufficiently forward looking

37. Ofcom's analysis of functional sustainability does not take account of the increased constraint that FWA is likely to exert on residential home broadband access over the three-year market review horizon.

[10] State Aid SA 33671 (2012/N), recital 74 available at: http://ec.europa.eu/competition/state_aid/cases/243212/243212_1387832_172_1.pdf.

38. Historically, FWA was not competitive in terms of speed and was typically deployed in rural areas only, where other technologies were uneconomic. FWA speeds have traditionally been limited by the amount of licensed spectrum owned by MNO. But this has changed. As set out above, using below 6GHz band spectrum (3.4GHz and 3.6GHz) Relish is already able to provide competitive download LTE speeds.

39. Again, this position is echoed by the European Commission which notes that:

> *"Similar to FTTC, FWA networks can inter alia be capable of reliably providing speeds in excess of 30Mbps download, they have characteristics (e.g. latency, jitter) that enable advanced services to be delivered such as video-conferencing and High Definition video streaming. This technological solution is scalable as it would be able to cope with increased take-up and increased demand for capacity and its performance likely to further develop in the coming years."*[11]

40. 5G FWA can be expected to compete directly against FTTH, potentially before the end of the three-year market review period. Trials in the US by Samsung, AT&T and Verizon have shown that end-user speeds in excess of 1Gb/s are achievable through the use of mmWave spectrum (e.g. at 28GHz and 40GHz). [✂].

Uptake of FWA

41. Ofcom appears to use the current low levels of FWA take-up as evidence that FWA will not constrain fixed broadband. Ofcom has failed to consider the extent to which FWA take-up is likely to increase over the three-year market review horizon.

42. [✂] [12]. As shown in Figure 4, [✂].

Figure 4: [✂]

43. Figure 5 below illustrates [✂].

Figure 5: [✂]

44. In marketing the product [✂].

Switching costs

45. Ofcom appears to identify the installation of specialist receiving equipment and associated up-front setup costs required by some existing FWA services as barriers to

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[11] State Aid SA 33671 (2012/N), recital 74 available at: http://ec.europa.eu/competition/state_aid/cases/243212/243212_1387832_172_1.pdf.

[12] [✂]

customer switching.[13] This may be the case for rural FWA deployments. However, as discussed above this should not inform Ofcom's analysis of demand-side substitutability.

46. This is because in such rural areas there is no fixed broadband coverage, and as such customers cannot switch between fixed and FWA services regardless. Instead Ofcom should analyse the cost of switching to FWA services in areas where both services are actually available.

47. In this regard the existing Relish FWA service in central London (which is directly marketed as a substitute to fixed broadband) has no up-front fees for customer that sign up to a 12-month contract. For those customers wishing to sign up to a shorter contract, a device cost of £50 is charged. This is comparable to the £40 installation, plus £20 activation fee currently charged by Virgin Media for customers switching to its broadband products.[14]

48. Relish's FWA product is also quicker and simpler for customers to switch to, as customers can self-install the service simply by plugging-in and switching on a wireless CPE device. This contrasts with switching between fixed copper and cable-based broadband services which will typically require an engineer to visit the customer's premise, street cabinet or local exchange to complete the switch. Three expects that its FWA product will be similarly easy to install with little or no upfront costs.

[13] See paragraph 3.74 of WLA Market Review - Volume 1, Ofcom, March 2017
[14] http://www.virginmedia.com/shop/broadband/broadband-only.html