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Three's response to Ofcom's PIMR Consultation

1. This is Three's response to Ofcom's PIMR Consultation, published on 2nd November 2018. Our response to Ofcom's related Business Connectivity Market Review (BCMR) Consultation discusses the interaction between the two responses. In particular, we note that our response to the BCMR consultation is contingent on Ofcom implementing the proposed duct and pole access (DPA) remedies in the physical infrastructure market.

Summary

2. We welcome Ofcom's recognition in its PIMR consultation of the importance of promoting infrastructure competition to BT in business markets and we fully support its proposal to impose a nationwide DPA remedy in early 2019.

3. Infrastructure competition is critical in ensuring that 5G deployment is timely and efficient. Ofcom's proposed DPA remedy will facilitate the deployment of alternative fibre networks, allowing providers to offer dark fibre services to be used in mobile operators' transmission networks. This is important as it will allow mobile operators to move away from relying on current solutions where transmission costs are directly determined by traffic levels to dark fibre services, where they are not. This decoupling of costs from capacity will enable mobile operators to provide data-intensive 5G services to customers at lower prices than would otherwise be the case.

4. The network architectures of the providers who deploy fibre using Ofcom's DPA remedy could also be more suited to the efficient rollout of 5G networks. For example, a loop-based architecture would allow mobile operators to densify their networks more effectively by 'breaking out' from a loop to connect a new mobile site nearby rather than relying on a point-to-point connection to the nearest BT exchange which may be much further from the new site.

5. To ensure that the benefits of its duct and pole remedy are maximised, Ofcom must ensure that:

    a. there is no delay in imposing the remedy as operators require certainty over whether dark fibre (enabled by DPA-based infrastructure investment) will be available for them to use in their transmission networks when planning 5G deployments. Given the long lead times required from the imposition of a DPA remedy to fibre being deployed to transmission services being developed and then being used by mobile operators, it is important that Ofcom does not introduce any additional delays in imposing DPA remedies; and

    b. the DPA remedy is imposed nationwide, as Ofcom is proposing, since ubiquity of service is required for alternative operators to supply dark fibre transmission propositions nationwide which are attractive as an alternative to BT.

6. In this response, we provide evidence in support of Ofcom's proposals and emphasise the importance of the DPA remedy being imposed without delay and being fit for purpose when it is imposed. Specifically, we:

    a. provide evidence to support our view that dark fibre-based transmission services based on Ofcom's DPA remedy will yield a number of benefits with the move to 5G compared to current backhaul solutions;

    b. provide evidence to support both Ofcom's market definition and SMP findings; and

    c. support Ofcom's proposed pricing remedy.

Current BT backhaul solutions are becoming increasingly costly and change is urgently needed with the move to 5G

Current mobile backhaul solutions are increasingly costly and do not allow for efficient densification of networks for 5G

7. We currently purchase BT Wholesale's managed MEAS product for around [✂] of our transmission links from cell sites back to our aggregation nodes[1] as BT's volume discounts and nationwide reach have historically made it the most cost effective solution in the significant majority of the country. This, however, is still costly and will become more so with 5G technologies. We estimate that, if we continue to buy this product in the future, at the same price as today, it will cost us approximately [✂] (assuming a compound annual growth rate of mobile traffic of 30%)[2]. This calculation does not include the impact of FWA services on network traffic. [✂] By comparison, the equivalent cost

[1] [✂]

[2] This is consistent with third party estimates of compound annual growth rates in data traffic. For example, Ericsson estimates that data traffic per smartphone will increase at a compound annual growth rate of 32% between 2018 and 2024. Ericsson Mobility Report, November 2018.

would be approximately [✂] over the same period if traffic remains at the same level as today.

8. This increase in cost is driven by the fact that the price we pay for BT's MEAS product is directly determined by traffic levels. Traffic is forecast to increase substantially in the future, as both 5G and FWA are deployed and taken up by consumers. We expect that our MEAS costs would increase proportionately if we were to continue to use it.

9. [✂]

10. Our current solution with BT also does not allow us to efficiently densify our networks in urban areas because BT's leased lines are point-to-point connections (i.e. exchange to mobile site). If we want to add a new mobile site to our network, we must pay for a new leased line to connect that site to the nearest BT exchange.

11. We have explored solutions based on non-telecoms physical infrastructure [✂] but find that these are not scalable, as we discuss below, and (absent an effective DPA remedy) we will continue to rely on BT for transmission in rural areas. [✂].

Alternative solutions based on Ofcom's duct and pole remedy would bring significant benefits

12. The imposition of DPA remedies as proposed by Ofcom should allow us to purchase dark fibre from alternative network operators for our transmission requirements. This would have a number of advantages compared to current arrangements.

13. Firstly, being able to buy dark fibre from alternative suppliers would decouple cost from capacity, meaning that our transmission costs would be broadly fixed with respect to network traffic. This is important both because it gives us certainty about the costs we will pay for transmission and allows us to create customer propositions which incentivise greater data usage by offering customers lower prices.

14. Secondly, purchasing a dark fibre product from an alternative infrastructure provider would enable further cost savings and technical benefits:

    a. *Equipment cost savings*. It should be possible to connect dark fibre directly to the network terminating equipment on RAN sites. MNOs would, therefore, be able to realise savings on the cost of equipment that is included in the price of EAD circuits.

    b. *Power and space savings*. The removal of network terminating equipment otherwise used in the provision of EAD circuits offers additional benefits to MNOs which face specific constraints on space and power availability on RAN sites.

    c. *Increased reliability*. The reduction in network termination equipment used on dark fibre circuits will reduce the scope for equipment-related faults, resulting in more reliable circuits with fewer points of failure.

15. Thirdly, the different network architectures of alternative infrastructure providers will give us opportunities to plan our network more efficiently. For example, contracting with an alternative provider which uses a loop architecture rather than point-to-point (like BT) would allow us to densify our network more efficiently. This is because we could 'break-out' from a loop network to easily serve new mobile sites nearby rather than bear the more substantial cost of BT connecting an additional point-to-point circuit.

16. Fourthly, we would expect increased network competition to reduce market prices for transmission products regardless of the operator we choose to contract with. All else being equal, this should allow us to pass-on these cost savings to customers

17. [✂]

18. For all these reasons (and because BT has nationwide SMP in the supply of wholesale access to telecoms physical infrastructure), we support Ofcom's proposals to impose a duct and pole remedy to enable network competition and urge Ofcom to ensure that its imposition is not delayed any further. Any further delay would threaten the timely deployment of 5G and extend the harm to mobile providers of not being able to decouple costs from capacity.

We support Ofcom's assessment that BT has nationwide SMP in the supply of wholesale access to telecoms physical infrastructure

We agree with Ofcom's assessment that non-telecoms physical infrastructure is not a substitute for telecoms physical infrastructure

19. In its definition of the product market, Ofcom concludes that a number of other services are not demand-side substitutes for the supply of infrastructure access for telecoms networks. We agree with Ofcom's analysis for all of these services.

20. Ofcom first considers that non-telecoms physical infrastructure is not a substitute for telecoms physical infrastructure. [✂]

21. [✂]

22. [✂]

23. [✂]

24. [✂]

25. [✂]

We agree with Ofcom's assessment that wireless connections are not a substitute for telecoms physical infrastructure

26. Ofcom next sets out its assessment that wireless connections (microwave links, satellite and fixed wireless access - FWA) are not a substitute for access to telecoms physical infrastructure. We first consider FWA.

27. With the deployment of 5G technologies, FWA will start converging with residential fixed services. We estimate that FWA based on 5G technology could provide residential broadband speeds which are twice as quick as today's average fixed broadband speeds.[3] [✂]

28. However, as Ofcom rightly identifies, there are two reasons why FWA is not a substitute for access to telecoms fixed infrastructure.

29. Firstly, although the capacity of FWA networks will increase substantially with 5G, they will still not be able to serve as a backhaul link for the amount of traffic generated from 5G customers. We expect that we will need to purchase [✂] for our transmission services in the most congested areas just for the provision of retail 5G mobile services, with the requirement for residential broadband services being much higher than this. It is unlikely that FWA backhaul will be able to meet this capacity in the short term, particularly as the mobile sites and spectrum needed to provide FWA backhaul will also be used to provide downstream services to consumers (for both mobile and residential FWA services).

30. Secondly, even if FWA could meet these backhaul capacity requirements, it would still require fixed lines for the majority of its backhaul from the FWA site to the core network of the FWA backhaul provider.

31. Similar arguments apply to microwave links which are significantly constrained in the capacity they can offer, require fixed backhaul at some point and, additionally, require line-of-sight to operate. Our understanding is that satellite links do not provide the capacity or latency to act as reasonable substitutes to the use of telecoms physical infrastructure.[4]

32. We also support Ofcom's view that there is no prospect of supply-side substitutes arising in a reasonable timeframe given the significant time and cost involved in building a network to offer access to telecoms physical infrastructure.

33. We, therefore, support Ofcom's proposed finding that the relevant product market is the supply of wholesale access to telecoms physical infrastructure for deploying a telecoms network and with its grouping of postcode sectors into the four geographic areas.

We support Ofcom's assessment that BT has nationwide SMP in the provision of access to telecoms physical infrastructure

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[3] 5G Wireless Home Broadband: A Credible Solution to Fixed Broadband, Ovum 2018

[4] Analysys Mason's study for Ofcom's Advice to Government for the Broadband USO notes that business customers can receive up to 50Mbit/s download speeds using satellite services while latency is poor due to the distance from the ground station to the satellite. It also noted that it did not expect satellite speeds to significantly increase before 2020 for a number of reasons.

34. We agree with Ofcom's assessment that BT's dominance in the downstream leased lines market is derived from its control and ownership of its physical infrastructure. This, therefore, indicates that BT has significant market power over access to telecoms physical infrastructure.

35. We also agree with Ofcom's assessment that ubiquity of service is critical, since providers seeking access to BT's physical infrastructure will need to deploy their networks widely and densely to put forward a competitive proposition. [✂]

36. It is, therefore, very clear to us, based on our experience in procuring transmission services, that BT has SMP in all geographic areas of the UK since, even if specific areas were perfectly competitive, ubiquitous nationwide coverage is what really drives market power in the provision of telecoms-specific infrastructure.

37. We also support Ofcom's proposal that BT has market power in each of the four identified geographic areas based on the average distance of alternative operators' networks to premises. The cost advantage associated with the proximity of BT's network to premises undoubtedly gives BT significant market power throughout the UK.

38. BT has SMP nationwide given that ubiquity of service is an important factor in determining the attractiveness of a competing proposition to BT. Therefore, the proposed DPA remedy must be implemented nationwide.

Ofcom's proposed pricing remedy is reasonable

39. We support Ofcom's proposal to impose an unrestricted nationwide PIA pricing remedy where prices are capped at the same level as they are in its residential PIA remedy. Without such a remedy, BT would have both the incentive and ability to leverage its market power to set PIA prices at an excessively high level. This would undermine its DPA remedy and severely dampen the investment incentives of prospective alternative infrastructure providers.

40. In an ideal world, Ofcom would impose a charge control on PIA services, instead of making adjustments to the existing PIA remedy, to ensure that prices were aligned to long-run costs. This would ensure allocative efficiency in the market. However, we recognise that it might not be practical for Ofcom to impose a charge control at such an early stage. We can identify three main reasons for this:

    a. PIA volumes are uncertain at this point, meaning that a cost modelling exercise would rely on very rough volume forecasts and would, therefore, likely result in inaccurate results;

    b. Operators have invested in the WLA PIA remedy and any PIA price for business services which is substantially different to that of the WLA PIA price may undermine Ofcom's ambition to promote certainty and stability; and

    c. A charge control would be a significant undertaking which would likely delay the imposition of the remedy. As we have discussed above, this cannot be allowed

to happen given the potential this has to delay and/or substantially increase the costs of 5G deployment.

41. We, therefore, consider Ofcom's proposed imposition of a price cap at the same level as that for the WLA PIA product to be a reasonable interim measure.

Duct and Pole Access should be fit for use as soon as it becomes available

42. For the remedy to be successful in promoting infrastructure competition, it is important that it is fit for purpose and available in a timely fashion.

43. Given its existing business in providing wholesale leased lines services, BT has both the incentive and ability to game the remedy so as to prevent take-up of the remedy from cannibalising its existing leased line revenues. For example, it could delay access to its ducts and poles by taking excessive time in auditing them or it could restrict access altogether by claiming that ducts were full or damaged when they were not.

44. We have no first-hand experience of using the existing PIA product, so we consider that operators looking to purchase access to ducts and poles are better placed than we are to identify possible issues.