CMA
Competition & Markets Authority

Anticipated acquisition by BT Group plc of EE limited

Provisional findings report

Notified: 28 October 2015

The Competition and Markets Authority has excluded from this published version of the provisional findings report information which the inquiry group considers should be excluded having regard to the three considerations set out in section 244 of the Enterprise Act 2002 (specified information: considerations relevant to disclosure). The omissions are indicated by [✂]. Some numbers have been replaced by a range. These are shown in square brackets. Non-sensitive wording is also indicated in square brackets.

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Summary

1. On 9 June 2015 the Competition and Markets Authority (CMA) referred the anticipated acquisition by BT Group plc (BT) of EE Limited (EE) for an in depth (phase 2) inquiry. The CMA is required to address the following questions:

   (a) whether arrangements are in progress which, if carried into effect, will result in the creation of a relevant merger situation; and

   (b) if so, whether the creation of that situation may be expected to result in a substantial lessening of competition (SLC) within any market or markets in the UK for goods or services.

2. BT is a UK company that provides telecommunications products and services to retail customers and provides wholesale voice, broadband, and data communications products and services (including backhaul) to fixed and mobile network operators.

3. EE is a joint venture between Orange (a French company) and Deutsche Telekom AG (a German company). It provides mobile and fixed communications services to retail customers and wholesale mobile services to other communications providers (CPs), as one of four mobile network operators (MNOs) in the UK.

4. BT and EE (the parties) overlap in the provision of mobile and fixed communications services to retail customers. In addition, EE provides wholesale mobile services to BT (among others) and BT provides mobile backhaul and wholesale broadband services to EE (amongst others). In addition, through its Openreach division, BT provides local loop or local access network services, regulated backhaul and leased line services to EE (amongst others).

5. BT told us that the strategic rationale for the merger was: to accelerate its mobile strategy; to provide greater end-to-end control over investment and product innovation, by combining EE's advanced 4G network with BT's existing fixed infrastructure; and to provide cost and revenue synergies.

Background to our assessment

6. We received 20 submissions from third parties providing their views on the merger. We also received a large number of responses to our information requests, and held 10 hearings with a range of interested third parties. We appreciate the level of interest and participation in this inquiry which has

assisted us greatly in our consideration of the ten distinct theories of harm that we identified, of which eight were assessed in considerable detail.

7. We consider that there are several interrelated themes which have a bearing on our assessment of the merger, including technological change and regulation.

8. We have noted:

- the dynamic and innovative nature of this complex industry with potential structural change (including the proposed acquisition of O2 by Hutchison 3G (H3G));
- sophisticated competitors responding to opportunities in the market; and
- significant changes in consumer demands for data.

These factors have inevitably made our forward-looking merger assessment more uncertain.

9. We have also been mindful that the role of the CMA in merger cases is to protect competition for the benefit of consumers, not the commercial interests of competitors.

10. Communications networks and services are regulated by Ofcom, which has wide-ranging powers. While we have not carried out a full assessment of the effectiveness of regulation, we have noted specific concerns by third parties in our competitive assessment, particularly over the functional separation of Openreach, and the effectiveness of the regulation of superfast broadband inputs. We have also recognised the potential constraint from the threat of responsive regulation, and note the ongoing wide-ranging consultation by Ofcom into potential changes in regulation of the sector. We have been mindful that our assessment in this inquiry is of the impact of the proposed merger, not an investigation into the industry or into the effectiveness of current regulation.

Market definition

11. The purpose of market definition in a merger inquiry is to provide a framework for the analysis of the competitive effects of the merger. We provisionally concluded the need to consider relevant markets for five different services: retail mobile, wholesale mobile, mobile backhaul, wholesale broadband and retail broadband.

Competitive assessment: retail mobile

12. We considered two theories of harm concerning retail mobile: unilateral effects arising from loss of potential competition, and dynamic loss of competition through the strengthening of EE.

Unilateral effects arising from loss of potential competition

13. Our provisional view is that, pre-merger, the retail mobile market is competitive, with close competition among the four MNOs and with limited additional competition from the MVNOs. We consider that the additional competitive impact in the supply of retail mobile that BT would have brought to bear as an MVNO, absent the merger, would have been limited.

14. We considered whether BT had specific strengths that suggest it would have been an important and disruptive force absent the merger, namely a fast 4G service from EE, a large fixed customer base to whom to cross-sell, ownership of spectrum, plans to develop a small cell network to offload costs and reduce wholesale costs, and an aggressive, well-funded approach. However, our provisional view is that these factors would not provide BT with a unique competitive advantage that could not be replicated by others.

15. Lastly, we considered whether the competitiveness of the retail mobile market was likely to decline absent the merger, due to possible capacity constraints of some operators, and whether BT would therefore have become a more important competitor. We considered capacity constraints in detail and our provisional view is that on balance, although some MNOs face challenges, should these constraints occur they would not be enduring, and would not therefore, in the counterfactual, cause BT to become a more important competitor.

16. Our provisional conclusion is therefore that the merger is not expected to result in an SLC in any market or markets in the UK as a result of unilateral effects arising from a loss of potential competition in the retail mobile market.

Dynamic loss of mobile competition through a strengthening of EE

17. We have considered a number of mechanisms, suggested by third parties, by which a strengthening of EE could lead to long-term harm to competition (even if it resulted in improvements to the merged party’s retail offer). We considered that EE may be strengthened by the merger but that competition in retail mobile was strong.

18. We did not find evidence in relation to any of those mechanisms which would lead us to believe that the merged party's strengths would permanently weaken competitors and ultimately harm competition.

19. Specifically:

- It is unlikely that any increase in the merged entity's incentives to bid strategically in the upcoming spectrum auction would lead to foreclosure of competitors.

- The merger in itself is unlikely to cause Telefónica to switch away from its network sharing agreement with Vodafone.

- Any effect of the merger on the use of indirect sales channels (such as a third party retailer) is unlikely to be large.

20. Our provisional conclusion is therefore that the merger is not expected to result in an SLC in any market or markets in the UK as a result of the strengthening of EE in the retail mobile market.

Competitive assessment: wholesale mobile

21. We assessed whether, as a result of the merger:

(a) the merged entity would have the ability to harm one or more MVNOs by increasing the price or degrading the quality of wholesale mobile services provided to them;

(b) the merged entity would have an incentive to do so; and

(c) where we found that ability and incentive could be present, whether this would have an effect on competition, such that it would amount to an SLC.

22. We considered it possible that, should fixed-mobile bundles become prevalent and the mobile element become an important driver of a consumer's choice of fixed supplier (including through consumers purchasing fixed-mobile bundles), the merger might change EE's ability and incentive to harm MVNOs which would compete with the merged entity across mobile *and* fixed services. We therefore focused our assessment on these 'fixed-MVNOs'.

23. We considered both:

(a) 'total foreclosure', where the merged entity would refuse to supply fixed-MVNOs, which might lead to them being without a supplier or receiving

significantly worse terms from an alternative MNO than in the counterfactual; and

(b) ‘partial foreclosure’, where the merged entity might bid more weakly to supply a fixed-MVNO or provide a worse service to it within contract.

24. Either strategy could in principle result in fixed-MVNOs offering retail mobile products at higher prices or at lower quality than they might have absent the merger.

Total foreclosure

25. In relation to our assessment of ability, we considered it likely that, were the merged entity credibly to refuse to supply fixed-MVNOs such as Sky, TalkTalk and Virgin Media, those fixed-MVNOs would still be able to secure wholesale mobile services from one of the other three MNOs remaining. However, in such a scenario, we considered it possible that the merged entity’s refusal to supply fixed-MVNOs could cause higher wholesale prices and/or lower quality services for fixed-MVNOs (although we considered the scale of price rise or quality degradation to be uncertain).

26. We considered that, if the sale of mobile and fixed services alongside each other became important, then any increase in price or degradation in quality caused by the merged entity’s withdrawal at the wholesale level could be to some extent offset by the fact that the other MNOs would have strong incentives to supply such bundles to consumers either directly or indirectly. In particular, those MNOs without their own fixed services (such as H3G and Telefónica) would be likely to seek to supply one or more fixed-MVNOs and ensure that those fixed-MVNOs could be reasonably competitive in the downstream retail market (ie by providing them with a good quality service and reasonable per-unit wholesale rates).

27. In relation to our assessment of the merged entity’s incentives, we considered that EE did not appear to have an incentive to foreclose fixed-MVNOs pre-merger. We considered that, for the merger to create this incentive, it would have to significantly increase the merged entity’s gains from foreclosure (relative to EE), given the potential wholesale revenue it would immediately forego by not bidding set against the uncertain and later gain of retail margins.

28. We considered that this incentive could arise if fixed-mobile bundles become prevalent, mobile services become a major driver of customers’ choice of fixed service provider (eg customers buying fixed-mobile bundles do not to a large extent ‘unbundle’ the mobile component by switching it to an alternative supplier in response to a price rise or quality degradation in the mobile

element), and the merged entity recaptures a high proportion of the customers lost by the fixed-MVNO. However, it would require considerable speculation on our part to accept that all these future developments would occur.

29. We considered that there were significant counter-arguments against the merger creating or enhancing the ability and/or incentive to harm fixed-MVNOs through total foreclosure. These included:

(a) Although we thought the merged entity would be able to cause some price increase or quality degradation in the wholesale supplies by other MNOs to fixed-MVNOs, the level of that price increase or quality degradation was uncertain. In particular, it was not clear whether the merged entity would be able to cause an increase that would lead to a sufficient number of the fixed-MVNOs' retail customers switching their fixed and mobile to the merged entity for the strategy to be profitable.

(b) While the number of customers buying fixed-mobile bundles may grow, there was uncertainty over the likelihood, speed and extent of the increase.

(c) It was not clear that mobile services would drive consumers' choice of fixed-service supplier to a sufficient extent for the strategy to be profitable.

(d) Even if a large enough proportion of customers of fixed-MVNOs did not choose to unbundle, the merged entity would face competition from other providers of fixed-mobile bundles that were not affected by the foreclosure strategy, meaning that the merged entity would not necessarily recapture a high enough proportion of bundled customers for the strategy to be profitable.

30. Considering the above, we provisionally conclude that it is more likely than not that the merger will not create or enhance the merged entity's ability and incentive to engage in a strategy of total foreclosure against fixed-MVNOs.

31. Therefore, we provisionally find that the merger is not expected to result in an SLC in any market or markets in the UK as a result of a total foreclosure strategy by the merged entity in the wholesale mobile market.

Partial foreclosure

32. We considered three types of partial foreclosure: the merged entity bidding more weakly than in the counterfactual; harming the interests of Virgin Media under its current contract with EE; or harming the interests of fixed-MVNOs under hypothetical future wholesale mobile contracts with the merged entity.

33. We considered that the merger was unlikely to lead to the merged entity bidding more weakly than it would have absent the merger. This was because if the merged entity wanted to host a given fixed-MVNO it would prefer to bid strongly (as otherwise it would risk losing the bid altogether). If its strategy was to harm the fixed-MVNO by bidding weakly and thereby causing other MNOs to also bid more weakly because they perceive less competitive pressure from the merged entity, it could do so more effectively by refusing to bid. This more effective strategy of refusing to bid has already been discussed under total foreclosure.

34. We considered partial foreclosure of Virgin Media under its current contract with EE. The evidence we reviewed suggested that EE may already have some ability to degrade the quality of wholesale mobile services provided to Virgin Media or to delay its transition to a full MVNO.

35. We then considered whether the merged entity would have a greater incentive, post-merger, to foreclose Virgin Media. Our provisional view is that:

(a) In line with our assessment of total foreclosure, the merger could only create such an incentive if we believed that fixed-mobile bundles would become important in the market and mobile would become an important driver of the choice of fixed services.

(b) If the merged entity wished to supply fixed-MVNOs (consistent with our provisional conclusion above), and if harming Virgin Media could damage its reputation as a host and cause it to lose other wholesale contracts, that would restrict its incentive to harm Virgin Media.

(c) Any harm that a strategy of partial foreclosure could cause to Virgin Media would be temporary and its impact on retail competition would likely be limited since the merged entity would face competition from other providers of fixed-mobile bundles that were not affected by the foreclosure strategy.

36. Taking into account all of these factors, our provisional conclusion is that the merger would not be expected to result in an SLC as regards the foreclosure of Virgin Media under its current contract.

37. Finally, we considered partial foreclosure of fixed-MVNOs under hypothetical future contracts with the merged entity. We thought that the incentives would be similar to those discussed for Virgin Media's current contract, but that the merged entity would have less ability to harm than under that contract. This is for two reasons:

- because fixed-MVNOs would likely be affected less than Virgin Media; and

- because fixed-MVNOs would be aware of the merged entity's possible incentives and seek greater contractual protection.

Hence, our provisional view is the same as for Virgin Media's current contract.

38. Therefore, we provisionally find that the merger is not expected to result in an SLC in any market or markets in the UK as a result of a partial foreclosure strategy by the merged entity in the wholesale mobile market.

Competitive assessment: mobile backhaul

Input foreclosure

39. We identified a number of different foreclosure strategies that the merged entity (BT Wholesale, Openreach or the merged entity as a whole) could in principle pursue against operators which it would compete with in the downstream supply of retail mobile services. We considered in each case whether the merged entity would have the ability and incentive to engage in these strategies.

40. We first considered whether the merged entity would have the ability to foreclose MNOs by increasing the price of Openreach Ethernet products. We provisionally find that this is unlikely given the constraints imposed by Ofcom's charge control, the small proportion that backhaul represents of MNOs' costs, and the lack of a clear link in the short-run between the actual price paid by MNOs for backhaul and the prices of the Openreach products.

41. We then considered whether Openreach could discriminate on the quality of Openreach Ethernet leased lines. We noted that Openreach is subject to regulation overseen by Ofcom which is designed to prevent such discrimination. We found no evidence to support third party concerns that BT had, in the past, circumvented this regulation. We therefore provisionally find that it is not likely that the merged entity would, in the future, have the ability to engage in this foreclosure strategy.

42. We considered whether the merged entity could discriminate against rival MNOs through innovation or its investment decisions, focusing on those technologies that would have to be developed by Openreach – specifically looking at the development of small cells, Cloud-RAN, and the development more generally of new Openreach products. We provisionally find that it is unlikely that the merged entity would have the ability to harm rival MNOs by pursuing these foreclosure strategies.

43. We considered whether the merged entity could discriminate against rival MNOs through other strategic decisions taken by Openreach. We provisionally find that, whilst the merged entity might have the ability to pursue this strategy, it would be unlikely to have the incentive to do so.

44. We considered a potential foreclosure strategy that involved the merged entity foreclosing rival MNOs' access to managed backhaul services at contract renewal, considering both total and partial foreclosure. We provisionally find that, while the merged entity might have the ability to engage in a total foreclosure strategy (that is, withdrawal of supply), it was unlikely that it would have the incentive to do so. Our assessment of a partial foreclosure strategy with respect to managed backhaul services suggested that MNOs will have the ability to protect themselves against most material risks through commercial negotiations, and BT Wholesale's ability to impose a service deterioration is in any event limited. We provisionally find therefore that the merged entity would not have the ability to partially foreclose MNOs in the event of new backhaul contracts between them and BT Wholesale.

45. We considered whether BT could follow a strategy of foreclosure by increasing the price or reducing the quality of BT Wholesale's managed backhaul services under the current contracts through, in particular:

- a denial of access by MNOs to innovations; and/or
- through an increase in the price or reduction in quality of the services offered to each MNO.

We provisionally find that the merged entity is unlikely to have the ability to increase the prices or reduce the quality of the managed backhaul products sold to Telefónica and Vodafone under the current contracts between the MNOs and BT Wholesale. We also provisionally find that, in the case of H3G, even if it is possible that the merged entity might delay the delivery of circuit upgrades, it would be unlikely to have an incentive to do so.

46. Lastly, we considered whether the merged entity as a whole could pursue a margin squeeze strategy (setting the difference between the wholesale prices of its backhaul inputs and its retail prices so low that rival MNOs would be unable to make a positive margin in the downstream markets). Our assessment suggested that the efficiencies generated by the merger would be very small as compared with the overall costs that a company such as EE sustains. We therefore provisionally conclude that the reduction in EE's backhaul costs would not be so large as to allow a reduction of retail prices that would give rise to a margin squeeze. We also looked at the possibility of margin squeeze through the deployment of more fibre backhaul, which would

be expensive for MNOs to replicate. We considered that the speed and quality of service that EE currently offered was not strongly influenced by the cost of backhaul. Consequently, we provisionally conclude that any increase in the quality of EE's retail services post-merger following from the reduction in the cost of EE's backhaul would not be so significant to result in margin squeeze.

47. In light of our assessment, we provisionally find that the merger is not expected to result in an SLC in any market or markets in the UK as a result of an input foreclosure strategy by the merged entity in the market for managed fibre mobile backhaul services.

Customer foreclosure

48. MNOs are able to use a number of different suppliers and technologies for mobile backhaul, including third parties supplying dark fibre. We considered whether, as a result of the merger, the merged entity might have an incentive to self supply (ie source EE's and, if it were able to influence Mobile Broadband Network Limited (MBNL)[1] sufficiently, MBNL's mobile backhaul requirements from BT to a greater extent than in the counterfactual), and whether in turn this would impede the rollout of fibre networks competing with BT and thereby lead to less competition. We focused on dark fibre, and assessed the merged entity's incentive and ability to foreclose other actual and potential suppliers of dark fibre.

49. There is significant uncertainty as to how the market for dark fibre will develop both in the counterfactual and post-merger. It is possible that, absent the merger, EE and/or MBNL would have purchased more backhaul from independent fibre networks. However, there was no such commitment, and Ofcom's dark fibre proposal in its Business Connectivity Market Review has created significant uncertainty and reduced the attractiveness of independent dark fibre options for EE and MBNL (and other buyers).

50. Therefore, the scale and timing of any such purchases is uncertain. It is particularly uncertain whether EE or MBNL would have the appetite, absent the merger, to be such a significant customer in the foreseeable future that it would significantly affect the roll-out of fibre networks. We also note that there are other customers available to independent fibre networks which could play the same role.

51. Our provisional view is that, while the merged entity would have the incentive to cease purchasing mobile backhaul from third parties, the merged entity is

[1] MBNL is EE's networking sharing arrangement with H3G.

unlikely to have the ability to foreclose independent fibre networks as a result of the merger. We therefore provisionally conclude that the merger is not expected to result in an SLC in any market or markets in the UK as a result of the foreclosure of dark fibre operators by the merged entity.

Competitive effects: wholesale broadband

52. BT supplies wholesale broadband services to communication providers that supply broadband at the retail level, enabling them to connect their core network with the customers' premises.

53. CPs can do this by using their own access network, unbundling BT's local exchanges and using Openreach's wholesale inputs (local loop unbundling (LLU) for standard broadband (SBB) or virtual unbundled local access (VULA) for superfast broadband (SFBB)), or by using wholesale broadband access (WBA) products sold by BT Wholesale. Ofcom regulates the terms on which LLU and VULA are supplied, and for WBA products in selected areas where there is limited competition.

54. As BT is also a retail broadband supplier, the CPs purchasing inputs from BT also compete with BT at the retail level.

55. We considered a theory of harm by which, as a result of the merger, the merged entity would have both the ability and incentive to increase the price or degrade the quality of the fixed wholesale broadband access that rival communication providers need to provide SBB or SFBB at the retail level.

56. One concern was that the merger could give BT the ability to foreclose SFBB inputs by increasing the price of VULA (or reducing its retail SFBB price while leaving the wholesale price unchanged) which would foreclose competing SFBB providers. BT's pricing of VULA is currently regulated by Ofcom using the VULA margin test, and third parties had suggested that this regulation would not be effective after the merger.

57. When testing the effectiveness of existing and future regulation, we must take account of all aspects of that regulation, including guidance that may accompany the regulation and any flexibility that the regulation and/or the guidance provide to the regulator to amend it.

58. Based on our discussions with and written evidence from Ofcom, our provisional view is that it is unlikely that the VULA margin test was materially ineffective in the counterfactual in preventing BT's ability to foreclose. We looked at the impact that the merger may have on the effectiveness of Ofcom's regulation of VULA. We consider it likely that Ofcom will have to adapt its implementation of the VULA margin test to address new issues that

may arise as a result of the merger. However, our provisional view is that Ofcom has the flexibility to deal with merger-specific effects on the effectiveness of the regulation of VULA and that it is not likely that any such reduction will require a material change to the regulation of VULA.

59. We therefore provisionally find that the merger does not decrease the effectiveness of the regulation of VULA to such an extent that it creates or enhances the merged entity's ability to foreclose its rival CPs.

60. Another potential concern was that the merger could give BT the ability to foreclose SBB inputs by favouring products used by its own downstream division over (different) products used by rival CPs who are active in retail broadband.

61. However, the prices of these products are the subject of well-established charge control regulation. Ofcom told us that the charges for the key rental and connection products are individually charge-controlled to prevent BT from acting on incentives to favour the products it uses. Our provisional view is that it is unlikely that BT has the ability to reallocate costs in a way that would affect prices, or that its incentives would change in a sufficiently material way to affect its actions.

62. Our provisional conclusion is that the merger does not create or enhance an ability or incentive for BT to foreclose SBB inputs, and it therefore would not be expected to result in an SLC in any market or markets in the UK as a result of SBB input foreclosure.

63. We investigated suggestions by third parties that BT already prioritised investment in fibre over copper, and would have a greater incentive to do so post-merger. It was also suggested to us that Openreach, as part of BT, prioritised new products and services to favour BT operations rather than those of its rivals.

64. Our provisional view is that these concerns are not caused or exacerbated by the merger.

Competitive effects: retail fixed broadband

65. We considered two theories of harm concerning retail fixed broadband: loss of competition in the areas defined by Ofcom as Market A (generally rural areas with limited competition to BT) in both SBB and SFBB, and loss of potential competition in SFBB across the UK.

Loss of competition in Market A

66. To investigate this theory of harm, we considered to what extent EE was a constraint on BT in Market A, and the likelihood of new entrants (or expansion) in retail fixed broadband in Market A.

67. Our assessment indicated that EE has a small retail customer base in SBB and SFBB compared to BT and other competitors, and although there are a small number of exchanges where both EE and BT have significant shares of supply, these represent a very small proportion of UK exchanges.

68. EE does not market broadband actively in Market A, nor does it price competitively for SBB, and its SFBB pricing does not appear particularly aggressive compared to its competitors. We saw no evidence that EE is a stronger competitive constraint than its share of supply suggests.

69. While large CPs have little current appetite for providing broadband in off-net areas (that is, where they have not unbundled the exchange), there are no material technical or other obstacles to entry if prices were to rise. Any CP would be able to buy a wholesale product from BT, and provide a broadband service which would be the same as BT's in terms of speed and consistency of service.

70. Our provisional view is therefore that the merger is not expected to result in an SLC in any market or markets in the UK as a result of the loss of competition in the supply of retail broadband (SBB and SFBB) in Market A.

Loss of superfast broadband competition

71. In this theory of harm, we considered whether EE was a significant competitive constraint on BT in the retail supply of SFBB across the UK as a whole, or was likely to be so in the near future, taking into account EE's own strengths and those of other competitors.

72. We note that the SFBB segment has recently been rapidly growing, and is expected to expand further. Competition is strong, particularly for SFBB entry-level products, and those consumers considering switching to SFBB continue to be highly price sensitive.

73. While we observe that EE is one of a few competitors to BT in SFBB, it has a small share of supply and does not achieve a substantial share of customer acquisitions. While EE has a large number of mobile phone customers to which it seeks to cross-sell SFBB, we have not seen evidence that it has translated this into a higher number of SFBB acquisitions than other

competitors, or that this is likely to make it a significant competitive constraint in the future absent the merger.

74. On the evidence provided to us, our provisional conclusion is that the merger is not expected to result in an SLC in any market or markets in the UK as a result of the loss of competition in SFBB.

Competitive effects: other

Coordinated and conglomerate effects

75. We stated in our issues statement of July 2015 that it appeared unlikely to us that the merger would be expected to result in an SLC as regards coordinated or conglomerate effects. We invited interested parties to provide us with evidence of any such effects. We have seen no evidence to suggest that the merger would increase the possibility of coordinated effects in any market we considered.

76. We usually have more concerns about coordinated effects where a merger increases symmetry in an affected market, which in turn may align the interests of competitors to coordinate rather than compete. We consider that, if anything, the merger will increase asymmetry between the rivals in the retail supply of either mobile services or fixed services.

77. Our provisional view is that any conglomerate effects would be closely linked with the issue of fixed mobile bundling. For conglomerate effects to exist, there would need to be an incentive to foreclose in one market to harm a rival primarily active in a different product market, on the basis that an increased propensity for bundling will lead to some additional conversion of sales to the merged entity. To the extent this effect exists, it has been covered by our assessment of the other theories of harm.

Interrelated effects

78. As well as our assessments of the individual theories of harm, we also looked at whether any potential interaction between each theory of harm would give rise to an SLC, or whether the overall effect of the merger on players in the UK telecoms market would give rise to competition concerns. Our provisional view is that all relevant concerns were fully addressed under the approaches we took to individual theories of harm, where we were cognisant of this possibility, and no additional theories of harm apply.

Provisional findings

79. We provisionally find that the merger is not expected to result in an SLC within any market or markets in the UK, including the retail mobile, wholesale mobile, mobile backhaul, wholesale broadband and retail mobile markets which have formed the focus of our inquiry.

80. The group was unanimous in finding no SLC in all but one market. The inquiry group is currently evenly divided over whether there is an SLC in the UK wholesale mobile market. The law states that for an SLC to be found, there must be a two-thirds majority of the group in favour of an SLC. It follows that we have therefore arrived at a provisional decision that there is no SLC in any market or markets in the UK as a result of this merger.

Provisional findings

1. The reference

1.1 On 9 June 2015, the Competition and Markets Authority (CMA), in exercise of its duty under section 33(1) of the Enterprise Act 2002 (the Act), referred the anticipated acquisition by BT Group plc (BT) of EE Limited (EE) for further investigation and report by a group of CMA panel members (the inquiry group).[2]

1.2 The CMA must decide:

(a) whether arrangements are in progress which, if carried into effect, will result in the creation of a relevant merger situation; and

(b) if so, whether the creation of that situation may be expected to result in a substantial lessening of competition (SLC) within any market or markets in the UK for goods or services.[3]

1.3 Our terms of reference, along with information on the conduct of the inquiry, are set out in Appendix A. We are required to publish our final report by 18 January 2016.[4]

1.4 This document, together with its appendices, constitutes our provisional findings, published and notified to BT and EE in accordance with the CMA's rules of procedure.[5] Further information relevant to this inquiry, including non-confidential versions of submissions from BT, EE and third parties, as well as summaries of evidence received in oral hearings, can be found on our webpage.[6]

1.5 Throughout this document, where appropriate, we refer to BT and EE collectively as 'the parties' and the anticipated combined organisation as 'the merged entity'.

1.6 This document is ordered as follows. Chapters 2 to 5 provide a background to the UK telecoms industry, technology, players, regulation and trends relevant to our assessment of the merger. Chapter 6 describes the merger transaction and rationale and explains why the CMA has jurisdiction to investigate it.

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[2] The reference was made under the CMA's fast-track procedure. See *Mergers: Guidance on the CMA's jurisdiction and procedure (CMA2)*, paragraphs 6.61–6.65.
[3] The Enterprise Act 2002 (the Act), section 36(1).
[4] Following the decision by the inquiry group that the reference period should be extended by eight weeks under section 39(3) of the Act. See: Notice of extension of the inquiry statutory period pursuant to section 107(2)(c) of the Act dated 28.10.2015 on the BT/EE merger inquiry case page.
[5] *Rules of procedure for merger, market and special reference groups (CMA17),* Rule 11.
[6] BT/EE merger inquiry case page.

Chapters 7 to 9 describe how we approached our assessment, covering the counterfactual, market definition and our approach to assessing competitive effects. Chapters 10 to 22 cover our competitive assessment, providing an overview of each market investigated, and our detailed assessment of identified theories of harm in these markets. Finally, we conclude with our provisional findings in chapter 23.

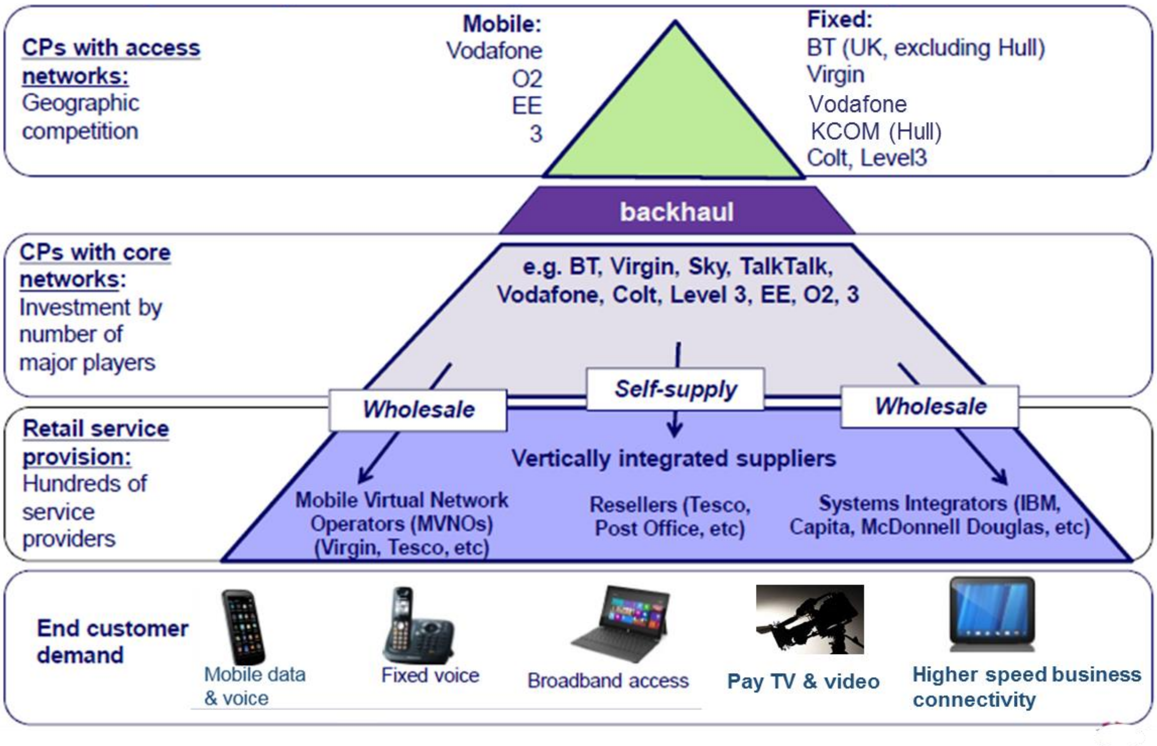
2. Telecoms products, services and infrastructure

2.1 This chapter provides an overview of the UK telecoms industry sectors, focusing on the products, services and infrastructure relevant to the merger.

2.2 BT and EE are active in various telecoms products and services in both the fixed and mobile sectors. The parties are both active at both the retail and wholesale levels within the telecoms industry.

2.3 Figure 2.1 represents a simplified view of the wholesale and retail level of the telecoms market and provides examples of operators present in the fixed and mobile sectors.

Figure 2.1: Simplified structure of the UK telecoms industry, fixed and mobile



Source: CMA (adapted from BT submission).

2.4 We set out below an overview of relevant telecoms products and services, and the wholesale inputs required to provide them. We first consider the supply of fixed telecoms, and then the supply of mobile telecoms. For more details, see Appendix B.

Fixed products and services

2.5 We consider two categories of fixed telecoms products and services: fixed voice and fixed broadband.

Retail fixed voice

2.6 Fixed voice services at the retail level provide domestic and business customers with the facility to make and receive telephone calls at a fixed location. Fixed voice services offered by communication providers (CPs) may include the rental of a fixed line to provide connectivity services. Services frequently provide call allowances, and associated services such as voicemail may also be included.

Retail fixed broadband

2.7 Fixed broadband products and services provide domestic and business customers with the facility to access and transmit electronic data via the internet. At the retail level, fixed broadband can be categorised by the speed at which data can be downloaded, and is typically regarded as falling into the four areas of: basic broadband, standard broadband (SBB), superfast broadband (SFBB) and ultrafast broadband. Broadband access in the SFBB and ultrafast categories is also referred to as 'Next Generation' services.

2.8 The technology and speeds available for fixed broadband vary considerably. basic broadband[7] with download speeds of more than 2 Mbit/s[8] (megabits per second) is available to 97% of premises; 85% can access a SBB service with speeds of 10 Mbit/s or more; and 83% can access SFBB speeds of 30 Mbit/s or more (due to the roll-out of fibre, and cable upgrades).[9] A cable network is a hybrid electronic communications network that uses a combination of optical fibres and coaxial cable. Typically a fibre-optic cable links the telephone exchange to the street cabinet and a coaxial cable connects the cabinet to the premises. The technologies being used to deliver superfast broadband are also capable of delivering speeds of around 100 Mbit/s and consideration is now moving to developing speeds of a gigabit per second (1 Gbit/s), commonly referred to as ultrafast broadband.[10]

Wholesale fixed voice and broadband inputs

2.9 Having described the fixed telecom products and services at a retail level, we now consider the associated wholesale inputs.

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[7] Originally fixed broadband services were required to deliver a speed of 128 kbit/s to qualify as broadband. See *Ofcom Strategic Review of Digital Communications (SRDC)* 2015, paragraph 1.1.
[8] In March 2015, the government announced its intention to raise the Universal Service Obligation (USO) from dial-up speed to 5 Mbit/s.
[9] *Ofcom Infrastructure Report 2014*, paragraph 3.1, except 83% for SFBB from Ofcom SRDC 2015, footnote 1.
[10] *Ofcom Infrastructure Report 2014*, paragraph 1.20.

2.10 Wholesale inputs supporting the provision of fixed retail voice and broadband services vary depending on the type of retail service and the underlying network used to provide connectivity.

2.11 CPs are able to purchase service from parts of BT's network via local loop unbundling (LLU).[11] LLU enables operators to site their own equipment in BT local exchanges and lease the local loop (the twisted copper cable from the exchange to the customer's premises). Having connected the local exchange to their own network, CPs are then able to provide either ADSL[12] broadband or ADSL broadband and fixed voice services to end users.

2.12 We consider three types of wholesale inputs for fixed voice and broadband including wholesale broadband access (WBA); wholesale local access (WLA) and virtual unbundled local access (VULA). The differences between BT's wholesale products for fixed broadband are as follows:

(a) In areas where no LLU has taken place, the wholesale product sold by BT Wholesale which allows CPs to provide fixed broadband access is called WBA.

(b) Where operators have invested in LLU, CPs purchase WLA from Openreach and are able to provide standard broadband.

(c) Where operators are selling a superfast broadband retail product and do not have their own fibre network, this is based on purchase of VULA from Openreach.

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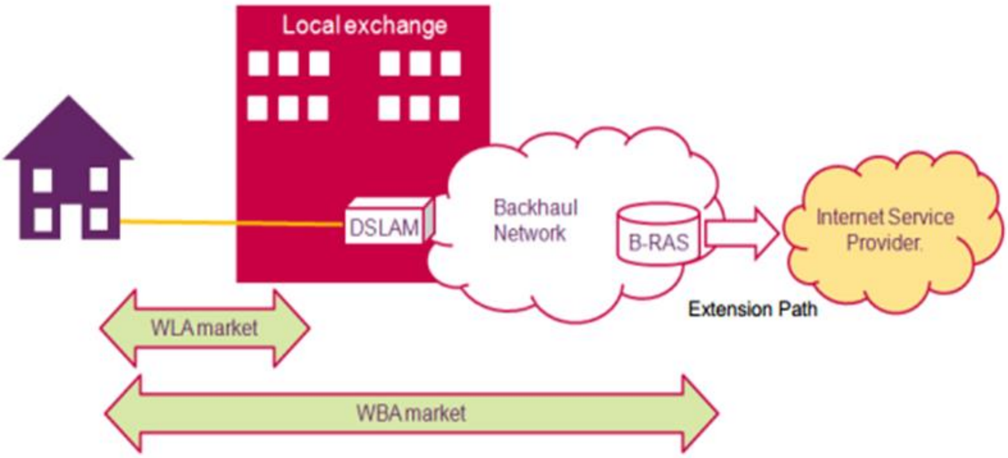
[11] See *Ofcom Communications Market Review (CMR) 2014*, p327.
[12] Asymmetric digital subscriber line (ADSL) refers to a digital technology that allows the use of a standard telephone line to provide high-speed data communications.

Figure 2.2: Wholesale fixed telecom inputs[13]



Source: Ofcom, Review of the broadband access markets, July 2013, figure 2.1.

Mobile telecoms products and services

2.13 Having discussed the relevant products and services in the fixed telecoms sector, this section considers the retail and wholesale products in mobile telecoms.

Retail mobile

2.14 Retail mobile products for domestic and business users are based on services which provide voice calls, messaging services and data access (referred to generally as retail mobile services). Messaging services include both SMS or text messages, and MMS.[14] Services are provided via mobile networks based on 2G, 3G or 4G technology. Data services are provided either as part of a mobile subscription, which includes voice and messaging services, or separately as a distinct 'mobile broadband' service.[15]

2.15 Retail mobile services can be categorised according to the basis on which end users pay for connectivity. With a post-pay contract the user pays a monthly fee for which they typically receive an allowance of bundled calls, messages and data, and any use outside these allowances is billed at the end of the month. With pre-pay services, the user buys credit in advance, and this

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[13] Digital Subscriber Loop Access Multiplexer (DSLAM): apparatus used to combine many local loops into one data path. See Ofcom (January 2014), *Review of the wholesale broadband access markets*, p64.
A Broadband Remote Access Server (B-RAS) provides management of the end-user's internet sessions. See Ofcom (July 2013), *Review of the broadband access markets*, p8.
[14] Short messaging service (SMS) is usually used to refer to mobile text messaging. Multimedia messaging service (MMS) is the next generation of mobile messaging services which includes photos, pictures and audio in addition to text.
[15] Ofcom define mobile broadband as access to a mobile data network via a USB stick or dongle, or built-in connectivity in a laptop/netbook/tablet with a SIM, tethering (via mobile phone internet connection on a laptop/tablet), and MiFi mobile broadband wireless router. See Ofcom CMR 2015, p268.

is used to pay for any service use as it takes place.[16] Ofcom data indicates that, at the end of 2014, the majority (61.8%)[17] of UK mobile connections were post-pay (see Appendix B, Figure 4).

2.16 Retail mobile services may also include the provision of a handset. The provision of handsets can be linked to the duration of contracts between CPs and users. The provision varies such that consumers can also be separated into those who have:

(a) contracts of 12 months and over that include a network-supplied subsidised handset (historically described as post-pay);

(b) contracts of between one and 12 months that:

(i) do not include a subsidised handset (frequently called ‘SIM only’); or

(ii) offer a handset, but under a separate finance agreement; and

(c) contracts that are not limited by duration (historically described as prepay).

Wholesale products and services in mobile telecoms

2.17 We consider wholesale products and services in two areas of the mobile telecoms industry: wholesale mobile and mobile backhaul.

Wholesale mobile

2.18 Mobile Network Operators (MNOs) provide wholesale mobile services to Mobile Virtual Network Operators (MVNOs). For further details of MNOs and MVNOs see paragraphs 2.44– 2.54 and Appendix B. Wholesale access services provided by MNOs allow retail customers of MVNOs to make use of an MNO’s radio access network (RAN). See paragraphs 2.55 to 2.57 for more details of RANs. Wholesale services also include call origination and may include other services (such as use of the MNO’s core network).[18]

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[16] Ofcom CMR 2014, p337.
[17] 55.6 million subscriptions out of 89.9 million subscriptions.
[18] Call origination is the ability for an end user to make a call to the network on which the call will be terminated (call termination), which could be a fixed network in the case of a mobile user calling a landline.

Mobile backhaul

2.19 MNOs purchase mobile backhaul in order to connect their access networks to their core networks. For further details of access networks and core networks see paragraphs 2.33 onwards.

2.20 Mobile backhaul is the network connectivity between an MNO's radio base stations (which make up the RAN) and its core network. Mobile backhaul usually includes a connection from the base station site to a local exchange and additional connectivity from a local exchange to a point of connection (POC) or point of presence (POP) with the MNO's core network.

Telecoms revenue and volume metrics

2.21 This section sets out key revenue and volume metrics for fixed and mobile telecoms products and services. We also look at pay TV metrics, as pay TV is a service which is sometime sold alongside one or more of fixed voice, fixed broadband and mobile services (known as 'quad-play' bundles when all four are sold together). For more details, see Appendix B.

2.22 The UK telecoms sector forms part of the wider communications market analysed by Ofcom in its annual Communications Market Review (Ofcom CMR). The 2015 CMR indicates that UK telecoms revenues declined in 2014, falling by 2% to £37.4 billion.[19] The fall in overall telecoms revenue in 2014 was the result of declining revenues in the areas of wholesale services, retail mobile and corporate data services, with growth in retail fixed revenues[20] insufficient to offset these reductions.[21]

2.23 The reduction in revenue from wholesale services during the year was largely due to falling mobile call termination revenue. The reduction in revenue from retail mobile in 2014 was mainly as a result of falling use of out-of-bundle calls and messaging.[22]

2.24 The rise in retail fixed revenue was driven by higher fixed internet revenues as a result of increasing SFBB take-up. This increase was more than sufficient to offset a decline in fixed voice revenues. SFBB prices are higher than those of SBB. Ofcom states that SFBB services typically cost between £5 and £10 per

[19] *Ofcom (August 2015), The Communications Market Review 2015 (Ofcom CMR 2015),* p255.
[20] Including fixed access and call revenues and fixed internet revenue.
[21] Within total retail fixed revenue there was a decline in fixed access and call revenue.
[22] Ofcom CMR 2015, p292.

month more than SBB services.[23] For further information on price levels and trends see Appendix B and Appendix M.

2.25 Fixed voice revenue continued to decline in 2014 due to falling traditional fixed telephony call volumes. Call volumes from fixed lines fell by 12.6% in 2014, a higher rate of decline than the 10.6% fall in 2013. This suggests that the rate at which consumers are substituting mobile calls and other forms of communication – such as email, instant messaging (IM) and communication via social networking sites – for fixed voice calls is increasing.[24] We note that a shift towards line rental services that include bundled calls and broadband means that the distinction between fixed voice revenue and fixed broadband revenue in recent years may be less clear than was historically the case.

2.26 Over the period 2009 to 2014, total telecoms revenue declined by a compound annual growth rate (CAGR) of –2% (see Table 2.1).

[23] ibid, p287.
[24] ibid, p280.

Table 2.1: UK telecoms and Pay TV industry key statistics

	2009	*2010*	*2011*	*2012*	*2013*	*2014*	*2014 growth (%)*	*5 year CAGR*
Total operator-reported revenue (£bn)	41.3	40.4	39.9	39.4	38.1†	37.4	–2.0	–2.0
Operator-reported retail revenue, excluding CDS (£bn)	27.9	27.8	28.0	28.5	28.4	28.5	0.4	0.4
Operator-reported wholesale revenue (£bn)	10.6	9.9	9.2	8.2	7.0	6.2	–11.5	–10.2
Average monthly household telecoms spend* (£)	87.20	86.50	84.63	84.00	81.40	81.30	–0.1	–1.4
Fixed access and call revenue (£bn)	9.6	9.3	9.0	8.8	8.7	8.5	–2.6	–2.6
Fixed internet revenue (£bn)	3.2	3.3	3.5	3.8	4.2	4.8	15.0	8.8
Fixed lines (millions)	33.5	33.4	33.3	33.2	33.3	33.2	-0.2	–0.2
Fixed lines residential (millions)	23.4	23.8	23.9	24.5	25.0	25.5	2.1	1.8
Fixed lines business (millions)	10.2	9.7	9.4	8.8	8.3	7.7	–7.2	–5.3
Fixed broadband connections (millions)	18.4	19.6	20.7	21.8	22.8	23.7	4.0	5.3
Superfast broadband connections (millions)	0.0	0.2	1.0	3.1	5.3	7.1	34.0	n/a
Fixed voice call minutes (billions)	128	123	111	103	92	80	–12.6	–8.9
Mobile retail revenues (£bn)	15.0	15.1	15.4	15.9	15.5	15.3	–1.5	0.3
Mobile voice calls minutes (billions)	127	131	131	132	135	137	2.0	1.6
SMS and MMS messages sent (billions)	106	129	150	151	129	110	–14.7	3.8
Active mobile subscriptions – handsets (millions)	76.5	76.7	77.0	78.1	77.8	78.5	0.9	0.5
Active mobile subscriptions – handsets and dedicated mobile broadband, excluding M2M (millions)	80.6	81.6	82.2	83.2	82.7	83.7	1.2	0.8
Corporate data services revenue (£bn)	2.8	2.7	2.8	2.7	2.7	2.6	–1.0	–1.0
Pay TV subscription revenue (£bn)	4.7	5.0	5.4	5.5	5.9	6.0	1.9	5.2

Source: Ofcom CMR 2015 Figure 4.1; wholesale services revenue and CDS revenue Figure 4.27; fixed CAGR Figure 4.33; mobile handset subscriptions Figure 4.49.
*2014 prices.
†Restated in CMR 2015 from £38.6 billion.
Notes:
1. CDS refers to corporate data services, sourced from IDS (see Ofcom CMR 2015, Figure 4.27). CDS revenue comprises spend on services that connect business sites to each other including Ethernet, IP VPN, digital leased line, corporate VoIP, frame relay/ATM services, and web hosting (see Ofcom CMR 2015, Figure 5.27). CDS revenue figures relate to connectivity only (that is, they exclude revenue relating to managed services); see Ofcom CMR 2015, p301.
2. Connection figures are at year end.
3. Fixed broadband connections represent residential and small and medium-sized enterprise (SME) lines.
4. Pay TV subscription revenue includes Ofcom's estimates of Sky TV, Virgin Media, BT TV, TalkTalk TV, Channel 4, Setanta Sports, ESPN, and Top Up TV in the UK.
5. Some growth rates calculated by CMA.

2.27 Considering the different growth rates of the constituent parts of retail mobile revenue there was a marked difference in the rates of change between data and messaging. Revenue from mobile data in 2014 grew by 3.1% year-on-year, which helped to offset a 28.2% fall in revenue generated by mobile messaging. Over the longer period of 2009 to 2014, revenue from mobile data has grown at a CAGR of 11.7%.

Mobile connections

2.28 At the end of 2014 there was a total of 89.9 million mobile connections comprising active mobile handsets, dedicated mobile data connections, and machine-to-machine (M2M) connections.[25] In 2014 the number of mobile handset connections increased by 702,000 (0.9%) to 78.5 million.

2.29 During 2014 total 4G mobile subscriber numbers increased from 2.7 million to 23.6 million, taking the proportion of total mobile subscriptions (including M2M)[26] that were 4G to 28% in Q4 2014.[27]

Pay TV

2.30 The UK pay TV industry generated almost £6 billion in subscription revenue during 2014 representing a 1.9% increase year-on-year and a CAGR of 5.2% over the last five years.[28]

Business telecoms

2.31 Total UK telecoms revenue from businesses generated £9.2 billion in 2014, including £2.4 billion from fixed voice and £3.4 billion from mobile services (see Appendix B, Figure 5). Overall business retail telecoms revenues accounted for 29.7% of total UK retail telecoms revenue in 2014, a 0.6 percentage point decrease since 2013.[29]

2.32 The proportion of business calls that originated on mobile networks was 57% in 2014, up from 52.6% in 2013, which was the first year in which more than half of business call volumes were made from mobile phones. At the end of 2014 there was a total of 11.6 million business mobile connections, equivalent to 14% of total mobile connections.

Overview of the UK telecoms infrastructure

2.33 Having considered some of the key telecoms industry metrics, this section provides a general, simplified overview of the UK telecoms infrastructure, for both the fixed and mobile segments.

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[25] Total active mobile subscriptions include active mobile handset, dedicated mobile data subscriptions (such as mobile broadband dongles and data-only SIMs), and M2M connections. Ofcom's definition of M2M refers to generally to a connection, often wireless, in which human input is not necessarily required. Examples of its usage include smart electricity meters (where the meter reports energy usage back to a central billing database) and burglar alarms (which may contain a SIM card to enable communication with monitoring offices). Vending machines are another common example of its use – as some use M2M technology to keep a central computer up-to-date with stock levels. See Ofcom CMR 2015, p295.

[26] Ofcom figures indicate that at the end of 2014 there were 89.9 million mobile subscriptions including 6.3 million M2M connections.

[27] Ofcom CMR 2015, paragraph 4.1.2 & Figure 4.2. Includes all consumers (business and residential) whose tariff allows them to access 4G mobile services, even those without a 4G-enabled device or in areas where their provider has no 4G coverage.

[28] Ofcom CMR 2015, p163 & p145.

[29] ibid, p297.

2.34 In broad terms, the structure of the fixed and mobile infrastructure in the UK can be viewed as follows:

(a) Stage 1 – access networks;

(b) Stage 2 – backhaul (the connection between access and core networks);

(c) Stage 3 – aggregation;

(d) Stage 4 – core networks;

(e) Stage 5 – retail service provision; and

(f) Stage 6 – end users.

2.35 Various structures are evident within the industry. CPs may operate with end-to-end integrated operations which span all areas of supply including the access network, core network and the sale of products and services to end users. Alternatively CPs may adopt an approach based on providing services at the access/core level only (that is, not offering products to consumers at the retail level). Other providers compete as resellers at the retail level only by offering services such as marketing, billing, pricing and some service design, but using another operator to provide the underlying network infrastructure.

2.36 Vertically integrated providers include BT, Virgin Media Limited (Virgin Media), EE, Vodafone Group plc (Vodafone), Telefónica UK Limited (Telefónica or O2) and Hutchison 3G UK Limited (H3G) which deploy business models based on using end-to-end networks across all stages of the value chain. The extent to which operators are involved in self-supply within networks varies. End-to-end models can be constructed by operators using various combinations of their own infrastructure and another providers' infrastructure purchased on a commercial basis. End to end combinations are present in both the fixed telecoms and mobile sectors, for example, some MVNOs combine their own core network with an MNO's RAN (which forms the access network).

Fixed infrastructure

2.37 There are two significant fixed access network providers operating substantive owned infrastructure in the UK (Openreach[30] and Virgin Media). Vodafone owns and operates a sizeable fixed network having purchased Cable and Wireless Worldwide plc (CWW) in 2012. KCOM owns and operates the fixed network in the Hull area. In addition to these fixed access operators

[30] Part of BT Group.

that own and operate end-to-end physical networks, a further two CPs (Sky plc (Sky) and TalkTalk Telecoms Group (TalkTalk)) operate networks which combine the purchase of wholesale fixed access from BT (via LLU and VULA) and their own infrastructure with wholesale fixed leased lines from BT and other providers.[31]

2.38 BT's fixed network is ubiquitous in the UK and BT can supply fixed infrastructure, such as leased lines, to almost everywhere in the country except the Hull area, where KCOM is the main provider of the physical network. BT's significant network presence means that it can use this network to self-supply downstream retail services as well as selling services to other CPs that do not have the same level of network coverage.[32] BT provides wholesale leased line services either on a commercial basis or on a regulated basis. Regulated inputs are provided by BT's Openreach division.

2.39 Virgin Media owns and operates a cable network which, as at 31 December 2014, passed approximately 12.6 million addressable homes in the UK and provided services to approximately 4.5 million broadband cable customers.[33] Virgin Media's sizeable physical network covers around 50% of residential premises. [✂]. Virgin Media recently announced plans to invest a further £3 billion in network expansion.[34] It estimates this investment should increase the number of households and businesses to which it can offer services by one third over the next five years.

2.40 Other providers with fixed networks that can provide wholesale leased lines include Cityfibre Infrastructure Holdings plc (CityFibre), Colt, Gigaclear, Level 3, Verizon and Zayo Group UK Limited (Zayo). CityFibre has plans to deploy fibre-based networks in a number of what CityFibre terms 'second-tier' UK towns and cities.[35] In recent months Gigaclear has also begun deploying its own localised fibre network in selected rural areas.[36] Zayo's UK fibre optic network is based on routes alongside the national gas pipeline and London's sewer network.

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[31] Other fixed providers also purchase/are able to purchase these wholesale services from BT.
[32] Ofcom Business Connectivity Market Review (BCMR) (May 2015) consultation document, paragraph 3.18.
[33] Virgin Media Initial Submission, paragraph 2.1, refers to approximately 5 million cable customers.
[34] See Virgin Media press release (February 2015): Virgin Media and Liberty Global announce largest investment in UK's internet infrastructure for more than a decade.
[35] See the CityFibre Network webpage, and plans for further investment within these areas and across the UK on the CityFibre Gigabit Cities webpage.
[36] See the Gigaclear website.

Fixed broadband network topology

2.41 Fixed broadband is provided as Current Generation Access (CGA); Next Generation Access (NGA); or by cable services from Virgin Media (also referred to as NGA in some contexts). CGA uses the copper access network from the local exchange to the end user premises combined with technology known as ADSL or ADSL2+, which allows the use of a standard copper telephone line to provide high speed bandwidth asymmetric data communications.[37] The bandwidths available to end users are dependent both on the equipment at the local exchange (for example the type of ADSL technology deployed) and on the distance of the customer from the local exchange.[38]

2.42 Fixed broadband provided using NGA technologies rely on an upgrade to the access connection in one of two ways:

(a) Fibre to the cabinet (FTTC) where the connection to the cabinet is replaced by fibre, and active equipment is deployed in the cabinet. The current copper access network connection from the cabinet to the end user remains in place; and

(b) Fibre to the premises (FTTP) where fibre is used all the way from the exchange to the end user.

2.43 The architecture used to provide CGA and NGA fixed broadband services (excluding those of Virgin Media) is shown below in Figure 2.3. Note that the reference to a business user applies equally to a residential user.

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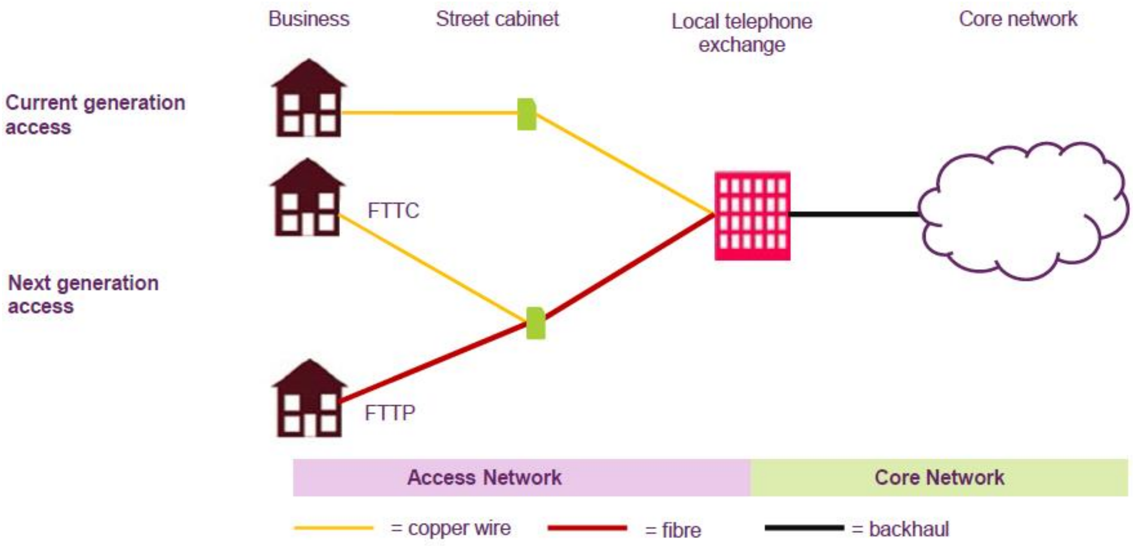
[37] Asymmetric digital subscriber lines (ADSL) and ADSL2+.

[38] Ofcom BCMR consultation document (May 2015), paragraph 3.28.

Figure 2.3: Fixed broadband architecture



Source: Ofcom BMCR consultation document (May 2015), Figure 3.4.

Mobile network infrastructure

2.44 This section considers the mobile network infrastructure.

2.45 There are two distinct types of operator in the UK mobile telecoms sector, which are:

(a) mobile network operators (MNOs) and

(b) mobile virtual network operators (MVNOs).

2.46 MNO services are also resold by:

(a) mobile virtual network enablers (MVNEs) and

(b) mobile virtual network aggregators (MVNAs).

MNOs and MVNOs

2.47 MNOs supply retail mobile services to customers subscribing directly to their networks. MNOs also have direct wholesale relationships with MVNOs; and indirect wholesale relationships with smaller MVNOs. Relationships between MNOs and smaller MVNOs are often managed through arrangements with MVNEs or MVNAs that on-sell the host MNO’s wholesale services and provide some of the infrastructure solutions to MVNOs. MVNE/MVNA arrangements reduce MVNOs’ upfront capital/investment costs and the need to develop bespoke infrastructure solutions (for example, billing and operations support).

2.48 In broad terms, to operate as an MNO requires a mobile network and a licence(s) to operate services on relevant sections of electromagnetic spectrum (see below). A mobile network comprises radio sites configured into a RAN, together with backhaul and a core network.

2.49 At present there are four MNOs, all operating nationally: EE, O2 (owned by Telefónica), Vodafone and H3G (under the brand name Three). There are numerous MVNOs operating in the UK, though the total figure varies depending on how MVNOs are categorised.[39] The parties, for example, told us that there were more than 100 MVNOs. Conversely, the MNOs reported to Ofcom a total of 41 'direct' MVNO customers.[40] Figure 2.4 shows selected MVNOs, together with their host MNOs. MVNOs typically use existing brand recognition and/or distribution to operate in the retail mobile market (for example, Tesco and Virgin Media), while others target niche market segments (for example, Lycamobile which offers cheap international calls).

Figure 2.4: MNOs and MVNOs

Mobile Network Operators (MNOs)	Mobile Virtual Network Operators (MVNOs)			
	Fixed CPs	Major retail brands	Value challenger brands	International focus
EE	Virgin media BT	ASDA Mobile POST OFFICE Mobile	thePhoneCo-op it's your call LIFE MOBILE	Vectone Mobile
O2	TalkTalk sky	TESCO mobile	giffgaff	Lyca mobile
vodafone		mobile by Sainsbury's	Talk mobile	Lebara mobile
3		iD	FreedomPop	afri mobile

Source: CMA analysis.
Notes:
1. iD is the mobile brand offered by Dixons Carphone.
2. Sky plans to launch its mobile service in 2016 and is therefore shown in dotted lines.
3. Sainsbury announced on 14 October 2015 that their mobile service will no longer be available after 15 January 2016.

[39] For the purposes of this inquiry, we refer to MVNOs generally in an inclusive sense unless otherwise specified.
[40] Ofcom initial submission, paragraph 4.3. See also, for example, Ofcom SRDC 2015, paragraph 1.44.

Light and full MVNOs

2.50 There is a broad range of different MVNO approaches that fall approximately into the two categories of ‘full MVNO’ and ‘light MVNO’.[41] Full-service MVNOs control all or most of their own network aspects. Customers of light MVNOs are managed as if they were customers of the host MNO. In terms of the number of operators, the light category dominates in the MVNO sector. Under Ofcom’s definition, there are currently 21 full MVNOs and numerous light MVNOs.[42]

2.51 Ofcom distinguishes between ‘retail only’ full MVNOs and ‘retail and core’ full MVNOs. The distinction is that, whilst both types of full MVNO use their own branding and manage most business systems, the ‘retail and core’ full MVNOs also own core networks and may hold licences to a limited amount of spectrum.[43]

2.52 We note that the definition of full MVNO used by EE covers MVNOs which maintain their own core network infrastructure and use the wholesale service provider only for access to the host MNO’s radio access network. EE told us that on the definition of full MVNO which excludes ‘retail only’ full MVNOs (as defined by Ofcom), there are likely to be fewer than 21 full MVNOs. For further details of the differences between light and full MVNO models, see Appendix B, Table 9.

MNO network coverage and topology

2.53 All four mobile network providers operate 3G and 4G networks, and all except H3G operate a 2G network. The most widely available 4G service is EE’s, with 87% coverage by population. In May 2015, 89.5% of premises had outdoor 4G coverage from at least one operator, and 42.5% had outdoor coverage from all operators.[44] All MNOs are subject to an obligation to provide 90% outdoor coverage for voice services by 2017.[45]

2.54 Regarding indoor coverage, Telefónica’s 4G licence requires it to offer 98% indoor premises coverage by the end of 2017, with reception for 95% of the population in each of England, Wales, Scotland and Northern Ireland. Ofcom

[41] These are sometimes referred to in the telecoms industry as ’thick’ and ’thin’ MVNOs.
[42] Ofcom SRDC 2015, paragraph 1.44. Full MVNOs are MVNOs with own SIM cards and own mobile network codes. Operators that fulfil these two conditions, but are majority owned (more than 50%) by any of the MNOs in the same national market are not included.
[43] See Ofcom SRDC 2015, Figure 21.
[44] Ofcom SRDC 2015, paragraph 4.6.
[45] See Ofcom (January 2015), *Voice Coverage Obligation Notice of Compliance Methodology*. The coverage obligation does not specify which mobile technology is used to provide voice service coverage.

notes that the other operators expect to match this commitment and that, in aggregate, future 4G outdoor coverage is likely to exceed 99% of UK premises.[46]

Mobile network topology

2.55 As set out above at paragraph 2.34 the structure of a mobile network can be viewed as comprising an access network, backhaul, aggregation and a core network.

2.56 The mobile access network includes base stations where antenna, mast head radio equipment and electronic systems:

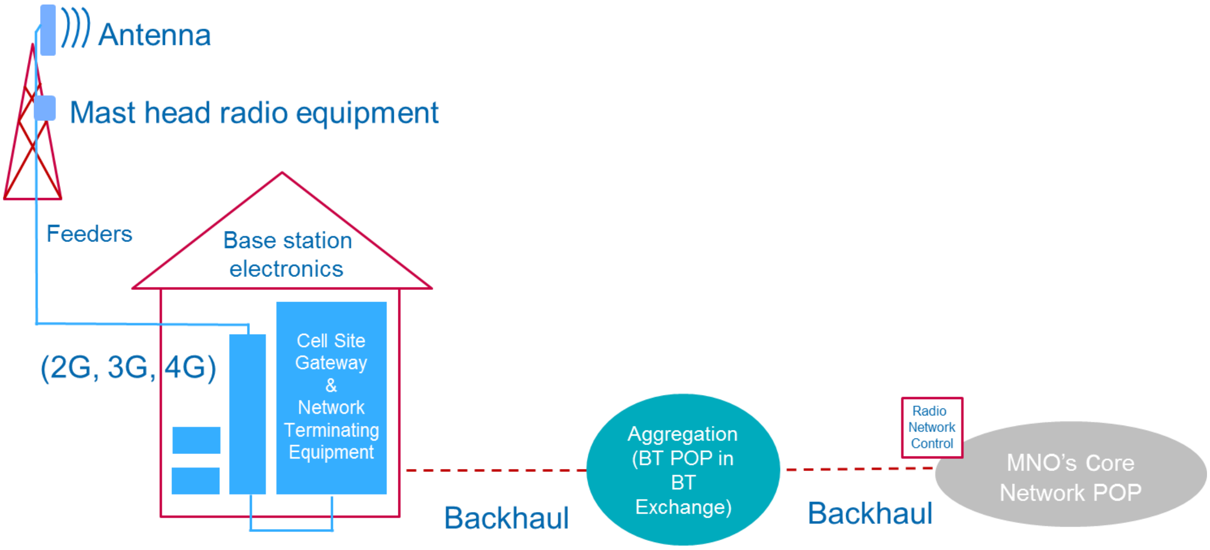
(a) provide the mobile signal accessed by end users; and

(b) convert the 'on air' radio signal (which is understood by mobile network elements) into a digital signal (which is understood by the core network).

Mobile backhaul provides the connection between the base station and an MNO's core network.

2.57 Figure 2.5 shows the relationship of the mobile network elements described above.

Figure 2.5: Mobile network infrastructure



Source: CMA analysis.

2.58 As discussed in Appendix C, MNOs share networks to varying degrees.

[46] Ofcom CMR 2015, p258.

Spectrum

2.59 The radio waves that provide the connection for the final link between the end user and the MNO's radio base form part of the wider electromagnetic spectrum, which includes all forms of electro-magnetic waves (such as visible light, infrared and X-rays).

2.60 Within the radio spectrum, different frequencies have different physical properties, broadly speaking:

(a) At lower frequencies, signals travel further and are generally better at going round hills and at penetrating objects such as buildings. This is referred to as having better 'propagation', but the amount of spectrum available at these is relatively limited.

(b) At higher frequencies, signals may only travel a short distance from a transmitter and may not be able to penetrate obstacles such as buildings, trees, or even, in some cases, rain, but higher frequency spectrum is relatively abundant.

2.61 The varying propagation characteristics of different spectrum bands means that MNOs seek to build a mix of different frequencies to maximise network coverage.

2.62 At present MNOs hold licences to use spectrum bands to provide voice and data services using GSM (2G), UMTS (3G) and LTE (4G) technology.[47]

2.63 The UK has various bands allocated for 2G, 3G and/or 4G mobile services. The allocation of bands to technologies is related to historical allocation approaches and there is no specific characteristic that makes particular bands of spectrum more, or less, suitable for operating 2G, 3G or 4G services. Additionally some spectrum is licence-exempt and used for wireless fidelity (Wi-Fi), notably the 2.4 GHz and 5 GHz bands.

2.64 Spectrum can be used in two different modes as either paired spectrum or unpaired spectrum. Spectrum can also be aggregated. For further details, see Appendix G.

2.65 In general, if the amount of spectrum and network configuration is not changed, the addition of customers simultaneously trying to access a mobile cell will affect download and upload speeds (although a number of parameters

[47] GSM (Global System for Mobile Communications), UMTS (Universal Mobile Telecommunications System), and LTE (Long Term Evolution) are acronyms used to describe respectively 2G, 3G and 4G cellular technology.

affect the speeds experienced by end users such as the handset, applications beings used, and other measures MNOs might take to enhance the performance of services.)[48] Ofcom has measured mobile network speeds of the four national MNOs including average download speeds per operator on 3G and 4G as well as the distribution of speeds.[49] Rootmetrics' recent comparison of 4G networks (shown in Table 2.2) provides a comparison of real world speeds for the different networks.[50]

Table 2.2: MNO network speeds, May 2015

				Mbit/s
			MNO	
	EE	*O2*	*Three/H3G*	*Vodafone*
Fastest 4G median download speed	32.1	22.2	14.2	21.7
Location	Belfast	Nottingham	Nottingham	Nottingham
Maximum download speed	94.1	64.7	50.0	64.5
Location of maximum speed	Belfast	London	Sheffield	Belfast & London

Source: Rootmetrics.

2.66 Developments in the ownership of spectrum are considered in more detail in Chapter 5 and the implications are considered in the relevant theory of harm assessments.

[48] For example video streaming demands high bandwidth (which requires fast data rates) and MNOs undertake a variety of activities to improve the service they offer their customers. This includes re-encoding video to reduce the bit rate, caching popular videos at the edge of the network to deliver faster response times and optimising content for device screen size and resolution.
[49] *Ofcom Infrastructure Report 2014.*
[50] Rootmetrics (May 2015), *4G in the UK: Fast Speeds and Expanding Footprints*.

3. The companies and competitors

3.1 This chapter provides overviews of the parties and third parties that are relevant to the assessment of the merger. It describes the activities, organisation and key financial metrics of each company. For more details, see Appendix C.

BT

Activities

3.2 The principal activities of BT comprise: the sale of telecommunications products and services; the provision of managed networked IT services to large multinational corporations, domestic businesses and the public sector; and the wholesale of telecommunications services to other communications providers.[51]

3.3 BT is the largest provider of fixed network services in the UK. With the exception of Hull, BT has a Universal Service Obligation on its physical network in the UK.[52]

3.4 BT re-launched its consumer mobile services in March 2015, as an MVNO on EE's network. It offers SIM-only deals with bundles of 4G data, minutes and texts to all consumers, with a discount on BT's mobile services offered to existing BT broadband home customers. BT has been active in the business segment of the retail mobile market since it spun-off mmO2 (previously BT's own mobile business, now O2) in 2001.

3.5 BT describes itself as 'one of the world's leading communications services companies'.

Organisation

3.6 BT has five distinct lines of business; three retail divisions (BT Consumer, BT Business, and BT Global Services) and two wholesale divisions (BT Wholesale and Openreach). For more information on Openreach, refer to chapter 4.

3.7 BT Wholesale sells voice, broadband, and data communications products and services, including backhaul, to fixed and mobile network operators. It

[51] BT Annual Report & Form 20-F 2015, p55.
[52] Oftel, Designation of BT and Kingston as universal service providers, p5, para 1.1. The Universal Service Obligation '…means that basic telephone services should be available to everybody upon a reasonable request and at an affordable price'.

combines these products and its own services with third-party components to offer managed solutions.

3.8 Openreach provides local loop or local access network services and regulated backhaul and leased line services to fixed and mobile operators. It offers various products including: Ethernet access; optical services; superfast fibre access; copper access via LLU and wholesale line rental; and physical infrastructure access (PIA), also known as 'Duct and Pole sharing'.[53]

Financial performance

3.9 For the year ending 31 March 2015, BT Group plc reported external adjusted revenue of £17,851 million (£18,287 million in 2014), adjusted earnings before interest, tax, depreciation and amortisation (EBITDA) of £6,271 million (£6,116 million in 2014), and adjusted earnings per share of 31.5 pence (28.2 pence in 2014).[54]

3.10 BT Global Services is the largest line of business by revenue, generating 38% of the group's external revenue. BT Consumer is the next largest contributing 24%.[55]

3.11 Around 60% of Openreach's revenue is generated from other BT lines of business so its contribution to the group's external revenue is the smallest, at 11%. Total Openreach revenue is equivalent to 28% of group revenue and it is the group's largest EBITDA contributor, generating 41% of the total.[56]

3.12 Since some of the revenue produced in BT is through internal supply between lines of business, it is necessary to remove those revenues generated by self-supply in order to assess external revenue (that is revenue to all non-BT parties, including other telecommunications providers, other businesses and end consumers). Table 3.1 sets out BT's segmental revenue identifying the elements of self-supply.

[53] See the Openreach webpages. The operational, engineering, and systems capabilities of Openreach are functionally separate from those of the rest of the BT Group.
[54] BT Group plc Annual Report and Form 20-F 2015, p7.
[55] ibid, p54.
[56] ibid.

Table 3.1: BT's segmental revenue for the year to 31 March 2015, identifying self-supply

£m

	BT Global Services	*BT Business*	*BT Consumer*	*BT Wholesale*	*Openreach*	*Other*	*Total*
Internal revenue							
BT Global Services	0	241	20	0	187	0	448
BT Business	29	0	22	0	306	0	357
BT Consumer	0	62	0	0	939	0	1,001
BT Wholesale	0	94	2	0	242	0	338
Openreach	0	1	0	0	0	46	47
Other*	0	1	18	0	1,390	0	1,409
Total internal revenue	29	399	62	0	3,064	46	3,600
Total external revenue	6,750	2,746	4,223	2,158	1,947	28	17,852
Total segmental revenue	6,779	3,145	4,285	2,158	5,011	74	21,452

Source: BT Annual Report & Form 20-F 2015, p74.
*The majority of internal trading relates to Openreach and arises on rentals, and any associated connection or migration charges, of the UK access lines and other network products to the customer-facing lines of business. This occurs both directly, and also indirectly, through the BT Technology, Service and Operations (TSO) division, which is included within the 'Other' segment.

3.13 The external adjusted revenue reported by BT can be split out across its product and service lines as follows:

Table 3.2: BT's revenue for the years to 31 March 2015 and 2014, categorised by products and services

£m

Products and services	*2015*	*2014*
ICT and managed networks	6,493	6,608
Broadband, TV and convergence	3,540	3,205
Calls and lines and connectivity	5,969	6,064
Transit	555	697
Other products and services	1,294	1,713
Total revenue	17,851	18,287

Source: BT Annual Report & Form 20-F 2015, p75.

3.14 As at 31 March 2015, BT had total assets of £25,710 million (£23,517 million in 2014) and total liabilities of £24,902 million (£24,109 million in 2014).[57]

3.15 BT's capital structure consists of net debt and shareholders' equity. At 31 March 2015, BT held net debt of £5,119 million and total parent shareholders' equity of £796 million.[58]

EE

Activities

3.16 The principal activities of EE comprise the provision of telecommunications products and services. As an MNO, EE delivers mobile and fixed

[57] BT Group plc Annual Report and Form 20-F 2015, p88.
[58] ibid, p183.

communications services to retail customers and wholesale mobile services to MVNOs. EE operates exclusively in the UK and runs the EE, Orange and T-Mobile brands.[59]

3.17 EE's consumer products include devices and accessories, mobile services, fixed voice and broadband, superfast broadband and pay TV (as a retailer only).

3.18 EE provides wholesale mobile services by making its network available to MVNOs, currently hosting more than 30 MVNO brands on its 2G, 3G and 4G networks.[60] It should be noted that access to the 4G network is limited; not all MVNOs have access to the 4G service.

3.19 EE describes itself as the 'UK's largest mobile communications provider'.[61]

3.20 EE was the first of the UK MNOs to launch its 4G mobile service in October 2012; its service coverage is shown in table 3.3 below.[62]

Table 3.3: EE's UK mobile service coverage by technology as at January 2015

	%
Technology	*Coverage of UK population*
2G	99
3G	98
4G	80
Superfast fibre broadband	54
ADSL broadband	98.7

Source: EE's 'A bit about us' webpage.

3.21 EE has approximately 13,000 full-time employees and 580 retail stores (58 stores were added due to the acquisition of Phones4U in October 2014).[63] It serves more than 30 million customers across its mobile, fixed and wholesale businesses.[64]

Organisation

3.22 EE was formed on 1 April 2010 when Orange SA (Orange) and Deutsche Telekom AG (DT) (together the Sellers) combined their respective UK mobile businesses as a joint venture. For more information about EE's group structure, see Appendix C, Annex 1, Figure 1.

[59] EE Limited Annual Report – year ended 31 December 2014, p4–5.
[60] EE initial submission, p3. One of the MVNOs hosted by EE is Virgin Media, which the submission states is the second largest MVNO in the UK.
[61] EE Limited Annual Report – year ended 31 December 2014, p4.
[62] See EE's 'A bit about us' webpage.
[63] EE Limited Annual Report – year ended 31 December 2014, p5.
[64] See EE's 'A bit about us' webpage – 'A little bit more about us'.

Financial performance

3.23 For the year ending 31 December 2014, EE reported adjusted revenue of £6.3 billion (£6.5 billion in 2013), adjusted EBITDA (excluding restructuring, one-off costs, brand and management fees) of £1,589 million (£1,574 million in 2013) and a loss after tax for the year of £217 million (£76 million in 2013).[65]

3.24 EE's revenue from mobile services was £5,619 million for the year ending 31 December 2014 (£5,734 million in 2013). The remaining £708 million revenue for the year (£748 million in 2013) was earned on equipment, fixed broadband and wholesale revenues.[66]

3.25 EE considers its provision of communication products and services to be 'a single group of services and products provided by an inter-dependent asset infrastructure, to one geographical area'. It produces all operating results, forecasts and budgets on a consolidated level for the purposes of allocating resources, and does not consider there to be separable identifiable operating segments for which financial information can be presented.[67]

3.26 EE has a 50% share in Mobile Broadband Network Limited (MBNL), a network sharing joint venture with H3G (see Appendix C for more details). As at 31 December 2014, EE's share of the MBNL joint arrangement's capital commitments was £31 million (2013: £26 million).

3.27 As at 31 December 2014, EE had total assets of £13,859 million (2013: £14,612 million), and total liabilities of £4,938 million (2013: £4,879 million).[68] Included in EE's total assets is £182 million (2013: £172 million), which is EE's share of MBNL network assets.[69]

3.28 At the end of 2014, EE's leverage ratio was 1.64x Net Debt to EBITDA.[70]

Competitors

3.29 This section outlines the UK activities and high-level financial positions of a selection of third parties, which are relevant to the merger given the segments we are considering and the theories of harm. They comprise three MNOs

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[65] *EE Limited Annual Report – Year ended 31 December 2014*, p6.
[66] ibid, p40.
[67] ibid, p38, section 5.
[68] ibid, p17.
[69] ibid, p52, paragraph 2.
[70] ibid, p6, paragraph 12.

(Telefónica, Vodafone, H3G), three MVNOs[71] (Sky, TalkTalk, Virgin Media), and two backhaul providers (CityFibre, Zayo).

Telefónica

3.30 Telefónica UK Limited (Telefónica) is an indirect wholly owned subsidiary of Telefónica S.A., a multinational telecommunications company based in Spain. As at December 2014, Telefónica S.A. operated in 21 countries and generated annual global revenue of €50 billion.[72]

3.31 Telefónica primarily operates in the UK under the O2 brand and provides a range of mobile communications services including voice, text and data connections via its 2G, 3G, 4G and Wi-Fi networks.

3.32 Telefónica also provides mobile communication services through its online-only sub-brand giffgaff. In addition, Telefónica and Tesco Mobile Services Limited operate a 50:50 joint venture, Tesco Mobile Limited (Tesco Mobile) – an MVNO that offers a range of mobile communication services on Telefónica's network under the Tesco Mobile brand.

3.33 Telefónica has over 450 retail stores and sponsors The O2 Arena in London, O2 Academy venues and the England rugby team.

3.34 For the year ending 31 December 2014, Telefónica reported revenue of £5,691 million, including revenue from mobile services of £4,350 million[73], and EBITDA of £1,405 million.

3.35 Telefónica is part of a network sharing joint venture with Vodafone UK, the passive sharing elements of which are operated by Cornerstone Telecommunications Infrastructure Limited (CTIL). See paragraph 3.62 for further information.

Vodafone

3.36 Vodafone Group plc (Vodafone) is a UK-based publicly listed company. Its primary activities comprise the operation of mobile telecommunication networks and the provision of mobile telecommunication services, including voice telephony, messaging, data and content services. Some of its operating companies also provide fixed-line telephony, broadband internet access and

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[71] These companies are primarily BT's competitors in fixed services, and only secondarily in mobile services. In several instances BT's competitors are also customers of the BT Group.
[72] See Telefónica's website.
[73] Telefónica's revenue for financial years 2013 and 2014 has been broken down by retail and wholesale, and further by retail consumer and retail business revenue streams. This breakdown can be found in Appendix C.

internet protocol TV services. Group global revenue in the year ending 31 March 2015 was £42.2 billion.[74]

3.37 For the year ending 31 March 2015, Vodafone reported UK revenue of £6,414 million[75] and EBITDA of £1,360 million. The breakdown of revenue by line of business can be found in table 3.4 below.

Table 3.4: Summary of Vodafone's financial information for UK activity, for the year to 31 March 2015

	£m
Line of business	*Revenue*
Mobile	4,472
Fixed	1,637
Other	305
Total	6,414

Source: Vodafone results for the year ended 31 March 2015.

H3G

3.38 Hutchison 3G UK Ltd (H3G) is a wholly owned indirect subsidiary of CK Hutchison Holdings Limited (CKHH). CKHH is a multinational conglomerate listed on the Hong Kong stock exchange and generated group global turnover of HK$31.2 billion in 2014.[76]

3.39 H3G entered the UK market as an MNO when it launched its commercial operations in March 2003 under the brand name 'Three'. In 2014, H3G had a customer base of approximately 8.54 million subscribers in the UK and carried 45% of all mobile data traffic in the UK.

3.40 H3G offers mobile services including voice, SMS, MMS, mobile internet and mobile broadband, but does not have any fixed-line, Wi-Fi or TV offerings. H3G also provides wholesale access and call origination services to MVNOs, and currently operates 3G and 4G networks.

3.41 For the year ending 31 December 2013,[77] H3G reported UK revenue of £2,049 million[78] and UK EBITDA of £391 million.

[74] See Preliminary results statement.
[75] Vodafone's revenue for financial years 2014 and 2015 has been broken down by retail and wholesale, and further by retail consumer and retail business revenue streams. This breakdown can be found in Appendix C.
[76] CKHH Annual Report 2014.
[77] 2014 accounts not yet available.
[78] H3G's revenue for financial years 2014 and 2015 has been broken down by retail and wholesale, and further by retail consumer and retail business revenue streams. This can be found in Appendix C.

Sky

3.42 Sky plc (Sky) is a home entertainment and communications provider. Sky's main activities include the retail of pay TV and communication services and the creation and assembly of TV content for retail and wholesale. Group global revenue for the year ending June 2015 was £9,989 million.[79]

3.43 Sky's retail business in the UK and Ireland is engaged in the provision of pay TV services to residential and commercial premises, and communications services to residential premises. Sky owns and broadcasts the Sky Channels, which it retails together with many other broadcasters' channels, and operates a number of businesses in adjacent sectors including Sky Media and Sky Vision.[80]

3.44 Sky's communications services include Sky Broadband and its fixed telephony services, which operate under the brand name of Sky Talk. Sky offers Wi-Fi internet access through Sky Wi-Fi and operates over 20,000 public access hotspots across the UK.[81]

3.45 For the year ending 30 June 2015, Sky reported UK revenue of £7,820 million.[82]

TalkTalk

3.46 TalkTalk Telecom Group (TalkTalk) is a UK-based broadband and voice provider.

3.47 The company currently serves around 4 million residential and business customers under the brand names, TalkTalk and TalkTalk Business.[83] TalkTalk's residential packages offer broadband, phone, TV and mobile services. TalkTalk Business supplies voice and data services to the small and medium-sized enterprise (SME) market and serves over 180,000 customers and 350 partners.

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[79] Sky is active in the UK & Ireland, Austria, Germany and Italy.
[80] Sky wholesales its channels to third-party pay TV platforms, as well as selling a wide range of programming internationally through Sky Vision.
[81] MarketLine Industry Profile (February 2015), Telecommunications services in the United Kingdom, p25.
[82] See Sky Annual Report 2015, p95. Sky's revenue for financial years 2014 and 2015 has been broken down by retail and wholesale, and further by retail consumer and retail business revenue streams. This can be found in Appendix C.
[83] TalkTalk Telecom Group company profile, MarketLine, October 2014.

3.48 For the year ending 31 March 2015, TalkTalk reported UK revenue of £1,795 million[84] and UK EBITDA of £245 million.

Virgin Media

3.49 Virgin Media Limited (Virgin Media) is a wholly owned subsidiary of Liberty Global plc (Liberty Global). Liberty Global is a multinational telecommunications company and generated Group global turnover of $18.2 billion in the year to June 2015.[85] Virgin Media is an entertainment and communications business which provides fixed-line telephony, mobile telephony, broadband and TV services to residential and (in relation to some services) business customers in the UK.

3.50 Virgin Media owns and operates a cable network that, as of 31 December 2014, passed approximately 12.6 million addressable homes in the UK and provides services to approximately 4.5 million cable broadband customers.[86]

3.51 For the year ending 31 December 2014, Virgin Media inc reported revenue of £4,214 million[87] and EBITDA equivalent[88] of £1,776 million.

CityFibre

3.52 CityFibre Infrastructure Holdings plc (CityFibre) is an investor, builder and operator of fibre-optic local access networks in towns and cities outside London. CityFibre is a wholesale only operator. Communications providers and MNOs use CityFibre's open access fibre infrastructure to deliver digital communications to their customers.

3.53 On 13 November 2014, CityFibre entered into a national framework agreement with MBNL and its MNO shareholders, EE and H3G.[89] CityFibre told us this agreement was established to enable mobile backhaul delivery via dark fibre connections to EE and H3G sites in many urban locations, starting with Hull.

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[84] TalkTalk's revenue for financial years 2014 and 2015 has been broken down by retail and wholesale revenue streams. This can be found in Appendix C.
[85] Liberty Global website.
[86] Virgin Media submission, p2.
[87] Virgin Media's UK revenue for financial years 2013 and 2014 has been broken down by retail and wholesale, and further by consumer retail mobile and fixed revenue streams.
[88] This is operating income before depreciation and amortisation. Virgin Media Inc operates under US GAAP rather than IFRS, this is the closest measure to EBITDA as Virgin Media could provide.
[89] CityFibre_submission, p6, paragraph 9.

3.54 For the year ending 31 December 2014, CityFibre reported revenue of £3.8 million and EBITDA of –£5.9 million.[90]

Zayo

3.55 Zayo Group UK Limited (Zayo) is a provider of bandwidth infrastructure services, including dark fibre. Zayo's UK fibre optic network spans more than 450,000km and connects over 130 data centres via unique routes alongside the national gas pipeline and within London's sewer system.

3.56 Zayo leases fibre and services from other telecommunication providers in order to provide services to its customers. These contracts tend to be long term, which limits the company's exposure to unfavourable increases in price.[91]

3.57 For the year ending 30 June 2014, Zayo reported revenue of £38.1 million and EBITDA of £6.6 million.[92]

Network sharing agreements

3.58 There are two network sharing agreements in the UK – MBNL and CTIL. Network sharing agreements enable MNOs to achieve economies of scale in the access network.[93]

MBNL

3.59 MBNL is responsible for operationally managing the RAN (2G, 3G, LTE) and other shared site infrastructure supporting the networks of its two shareholders, EE and H3G. It acquires certain assets relevant to the shared network, and manages network and operational services in respect of both the shared network and unilateral deployment (ie network assets or services specific to either EE or H3G).

3.60 MBNL purchases backhaul services for the shared EE/H3G RAN. These backhaul services link radio base station sites to EE/H3G's respective core networks through:

(a) microwave (radio) backhaul circuits; and

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[90] CityFibre Annual Report 2014.
[91] Zayo Group UK Limited statutory accounts for year ended 30 June 2014, p2.
[92]Zayo Group UK Limited statutory accounts for the year ended 30 June 2014.
[93] See *Ofcom Consultation on assessment of future mobile competition and proposals for the award of 800MHz and 2.6GHz spectrum and related issues*, p68.

(b) fixed leased line backhaul circuits from fixed network providers.

3.61 Outside MBNL, EE and H3G operate their own core networks, retain their own spectrum licences and compete at a retail level.[94]

CTIL[95]

3.62 [✄]

3.63 [✄]

3.64 [✄]

[94] See *Ofcom BCMR responses, EE, H3G and MBNL combined response.*

[95] Also referred to as ‘Project Beacon’.

4. Regulation

4.1 This chapter outlines the regulatory framework relevant to the anticipated acquisition by the parties. It provides a brief overview of the regulation that is pertinent to the issues identified in this inquiry in accordance with the issues statement and relevant theories of harm.[96] It is not intended to describe every piece of regulation which applies to the parties. A fuller description of the applicable regulation is set out in Appendix D.

Overall regulatory framework

4.2 Communications networks and services are regulated in the UK by Ofcom. Its powers to do so derive from a number of different legal instruments, notably the Communications Act 2003 (CA03) and the European regulatory framework that underpins many of the provisions of the CA03. Ofcom therefore exercises its various functions within the framework harmonised across the EU for the regulation of electronic communications by the member states, known as the Common Regulatory Framework (CRF), as transposed by the CA03. The applicable rules are contained in a package of Directives.[97]

4.3 Ofcom also has concurrent competition powers with the CMA under the Competition Act 1998 and the Enterprise Act 2002 (the Act).[98]

4.4 Section 3(1) of CA03 outlines that Ofcom's principal duty in carrying out its functions is to 'further the interests of citizens in relation to communications matters [and] ... to further the interests of consumers in relevant markets, where appropriate by promoting competition'.

[96] Issues statement (17 July 2015).
[97] Directive (2002/21/EC) on a common regulatory framework for electronic communications networks and services (Framework Directive); Directive (2002/19/EC) on access to and interconnection of electronic communications networks and associated facilities (Access Directive); Directive (2002/20/EC) on the authorisation of electronic communications networks and services (Authorisation Directive). The Directives were subsequently amended on 19 December 2009. The amendments have been transposed into the national legislation and applied with effect from 26 May 2011 and any references in this document to the CA03 should be read accordingly. See BCMR 2013, Annex 2, regulatory framework; see FAMR 2014, Annex 1, regulatory framework.
[98] See Memorandum of Understanding between the Competition and Markets Authority and Ofcom, (17 June 2014).

4.5 In doing so, Ofcom is required to secure a number of specific objectives[99] and to have regard to certain matters, such as, transparency, accountability and proportionality[100] also outlined in section 3 CA03.

4.6 Ofcom also has functions in relation to the licensing of spectrum under the Wireless Telegraphy Act 2006.

4.7 The legal instruments and regulatory powers most relevant to the merger are those that relate to Ofcom's market review functions, the regulatory conditions it imposes through the exercise of those functions and the undertakings that were given by BT to Ofcom under section 154 of the Enterprise Act 2002 and that apply to BT's Openreach business.[101]

Market review obligations

4.8 Ofcom's market review process involves three analytical stages. First, it defines each relevant market in terms of its product and geographic scope.[102] Then it assesses whether any CP has a position of SMP (significant market power – broadly equivalent to dominance) in any of the relevant markets. Finally, where it finds SMP, it imposes regulatory conditions (known as SMP conditions) on the CP concerned to address the competition concerns arising from such SMP.[103]

4.9 Article 16 of the Framework Directive and sections 84 and 84A CA03 require Ofcom to review competition in certain communications markets every three years. The purpose of a market review is to determine whether or not the market in question is effectively competitive and, where it is not, for Ofcom to impose appropriate remedies.[104] Where remedies are already in place, Ofcom is required to consider whether they remain appropriate and proportionate in the light of changing market conditions.[105] The Access Directive specifies a number of SMP obligations, including transparency, non-discrimination,

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[99] Section 3(2), (including 'the optimal use for wireless telegraphy of the electro-magnetic spectrum' (section 3(2)(a)) and 'the availability throughout the United Kingdom of a wide range of electronic communications services' (section (3)(2)(b)).
[100] S3(3)–(5) CA03; Ofcom is required to have regard to regulatory principles including transparency, accountability and proportionality and to a list of considerations to be taken into account when relevant, including the desirability of 'promoting competition in relevant markets', 'promoting and facilitating the development and use of effective forms of self-regulation', 'encouraging investment and innovation in relevant markets', 'encouraging the availability and use of high speed data transfer services throughout the United Kingdom' and 'the different needs and interests of [all users]… of the electro-magnetic spectrum'. It is also required to have regard, in particular, to the interests of consumers in respect of choice, price, quality of service and value for money.
[101] Ofcom initial submission, paragraph 2.3.
[102] See BCMR 2013, Annex 2, regulatory framework; see FAMR 2014, Annex 1, regulatory framework.
[103] Ofcom initial submission, paragraph 2.5. See section 87 CA03.
[104] See BCMR 2013, Annex 2, regulatory framework; see FAMR 2014, Annex 1, regulatory framework.
[105] Ofcom initial submission, paragraph 2.4. See also BCMR 2013, Annex 2, regulatory framework; see FAMR 2014, Annex 1, regulatory framework.

accounting separation, access to and use of specific network elements and facilities, price control and cost accounting. When imposing a specific obligation, Ofcom is required to demonstrate that the obligation satisfied certain tests (including proportionality, transparency and objective justifiability).

4.10 Before making a market power determination, Ofcom must identify the market which is, in its opinion, the one which (in the circumstances of the UK) it is appropriate to consider making such a determination. It must then analyse that market. The Framework Directive requires that National Regulatory Authorities (NRAs) define the market in accordance with the principles of competition law and taking the utmost account of the European Commission's (Commission) Relevant Markets Recommendation[106] and the EC SMP Guidelines.[107] The Relevant Markets Recommendation identifies a set of product and services markets within the electronic communications sector in which ex ante regulation may be warranted.[108]

4.11 When identifying markets other than those set out in the Recommendation, Ofcom would have to ensure the Commission does not raise any objections[109] and that three specific criteria are cumulatively met.[110]

4.12 SMP is currently found in the following UK markets:[111]

(a) Business connectivity markets (leased lines).

(b) Wholesale mobile call termination market.

(c) Fixed access markets: WLA, wholesale fixed analogue exchange lines, ISDN2, and ISDN30.

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[106] EC, Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector susceptible to ex ante regulation in accordance with Directive 2002/21/EC of the European Parliament and of the Council on a common regulatory framework for electronic communications networks and services.
[107] Official Journal of the European Communities (11 July 2002), *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services*, 2002/C 165/03.
[108] See BCMR 2013, Annex 2, regulatory framework; see FAMR 2014, Annex 1, regulatory framework.
[109] See BCMR 2013, Annex 2, regulatory framework; see FAMR 2014, Annex 1, regulatory framework. Also, *Commission guidelines on market analysis and the assessment of significant market power under the Community regulatory framework for electronic communications networks and services* , and EC Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector.
[110] EC Commission Recommendation of 9 October 2014 on relevant product and service markets within the electronic communications sector; Ofcom initial submission, paragraph 2.6.
[111] These are further expanded upon below. Note that each 'market' in this list may include multiple smaller markets and SMP findings can vary across them, for example the business connectivity market consists of multiple smaller markets, some of which are competitive.

(d) Fixed narrowband services markets.

(e) WBA.

4.13 With regard to the enforcement of SMP conditions, Ofcom's enforcement powers are set out in sections 94 to 104 CA03.[112]

4.14 Ofcom also has powers and duties under sections 185 to 191 of CA03 to resolve disputes in relation to the provision of network access, and certain disputes in relation to (among other things) rights or obligations conferred or imposed by or under SMP conditions. Dispute resolution undertaken by Ofcom is subject to appeal to the Competition Appeal Tribunal (CAT) under section 192 CA03. A person affected by a decision to impose or vary an SMP condition may therefore appeal to the CAT.

The 2005 BT Undertakings

4.15 In 2004/05, Ofcom undertook a Strategic Review of Telecommunications[113] with a wide-ranging scope, considering competition and consumer protection issues in fixed telecoms and mobile networks. As part of that process, BT gave legally binding undertakings under the Act in lieu of a reference to the Competition Commission (the Undertakings), effective from 22 September 2005.[114] The Undertakings have been varied on a number of occasions.[115]

4.16 The Undertakings imposed functional separation on BT so that it is required to operate its infrastructure business, Openreach, as if it were a separate organisation.[116] The Undertakings also require Openreach to provide its products and services (a defined set of access and backhaul services) on an Equivalence of Inputs (EOI) basis.[117] Ofcom recognised that BT's previous vertically integrated structure gave it both the incentive and ability to discriminate against competitors.[118]

Equivalence of Inputs

4.17 Under the Undertakings, BT is obliged to provide equal access to its network. Such access must be provided on EOI terms. The EOI obligation is defined in the Undertakings as meaning that, when providing access, all products and

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[112] See Appendix D, paragraphs 24(a)–(f).
[113] Original publication: Ofcom (September 2005): Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference.
[114] Original undertakings, Annex A.
[115] Undertakings given to Ofcom by BT pursuant to the Enterprise Act 2002 (19 June 2014).
[116] For a summary of the Undertakings see: BEREC (February 2011), *Guidance on Functional Separation*, Annex I and Ofcom intial submission, paragraph 2.7.
[117] ibid.
[118] Ofcom (July 2015), *Strategic Review of Digital Communications: Discussion document*, paragraph 11.8.

services must be delivered equivalently to all CPs, and (subject to the possibility of providing different service levels at different prices and Service Level Guarantees (SLG)) all CPs (including BT's downstream divisions) must enjoy the:

(a) same availability of products and services;

(b) same timescales, terms and conditions, including the same prices;

(c) same systems and processes;

(d) same reliability and performance; and

(e) same commercial information.[119]

Statement of Requirements/new products

4.18 The Undertakings require that BT operate a Statement of Requirements (SOR) process (ie a new product development process) subject to oversight by the Equality of Access Board (EAB) established as part of the Undertakings. BT processes all requests for new product developments and the SOR process enables Openreach customers to formally request the introduction of a new product or change to an existing one. Such requests must be determined by Openreach and provided to all CPs on equal terms.[120]

Monitoring and enforcement

4.19 Should the Undertakings fail to deliver a solution, Ofcom can open an investigation with a view to making a market investigation reference to the CMA.[121] Furthermore, the EAB, alongside BT, is obliged to identify and report on as well as investigate, complaints about BT's compliance with the Undertakings[122] and to conduct and publish an annual review.[123] The EAB is obliged to inform Ofcom of non-trivial breaches.[124] The EAB and Ofcom also

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[119] See the definitions section of the Final statements on the Strategic Review of Telecommunications, and undertakings in lieu of a reference under the Enterprise Act 2002, p61; also Ofcom initial submission, paragraph 2.7.
[120] Strategic Review of Digital Communications: Discussion document, paragraph 11.19. As such, Openreach must evaluate each request on the basis of its impact on Openreach only, not taking into account implications for the BT Group.
[121] Paragraph 8.43 of the statement accompanying the Undertakings.
[122] Section 10.11 of the Undertakings. Complaints may also be made by BT and the Equality of Access Office.
[123] Section 10.27 of the Undertakings. See paragraphs 10.9 onwards of the Undertakings.
[124] Section 10.17 of the Undertakings. The Undertakings require that the EAB has five members: three independent members, one BT Group plc non-executive director and one BT senior manager.

monitor the SOR process (product development requests) for compliance with the Undertakings.[125]

4.20 The Undertakings are legally binding. Where Ofcom has reasonable grounds for believing that there has been a breach of the Undertakings, it may direct BT as to the specific steps to be taken to remedy the breach.[126] If BT accepts the direction, failure to comply with the direction is also itself a breach of the Undertakings.[127] Ofcom does not have 'the powers to impose financial penalties on BT' and it is considering whether having in the future the ability to levy fines would provide 'a stronger incentive effect on BT's behaviour'.[128] The EAB can additionally suggest remedial action to BT to ensure compliance with the Undertakings and BT must take 'due account'.[129] The Undertakings are also enforceable under the Act.

Strategic Review of Digital Communications

4.21 Ofcom consulted (until 8 October 2015) on a discussion document in respect of the UK's digital communications markets as part of its Strategic Review of Digital Communications. It is Ofcom's first strategic assessment of the telecommunications sector in ten years and only the second since Ofcom was established.[130] The assessment will consider future policy challenges across fixed, mobile and content sectors.[131] As part of its review, Ofcom is consulting on the regulation of vertically integrated firms (such as BT) and whether there is a need to update or evolve the current model of fixed access network functional separation.[132]

4.22 Ofcom outlines four courses of possible action that it should consider for its overarching fixed telecoms regulatory strategy, including considering structural separation of Openreach.[133]

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[125] See BT undertakings;
[126] See section 10.15.1 of the Undertakings.
[127] See section 15.1(b) of the Undertakings.
[128] Strategic Review of Digital Communications: Discussion document, paragraph 11.58.
[129] See section 10.15.1 of the Undertakings. Also, answer to question 4,
[130] Strategic Review of Digital Communications: Discussion document, 'About this document'.
[131] ibid.
[132] Strategic Review of Digital Communications: Discussion document, paragraph 11.6.
[133] ibid, paragraphs 1.37 & 1.38 and section 11.

Ofcom's dispute resolution powers

4.23 The right for CPs to bring a regulatory dispute to Ofcom and Ofcom's powers and duties in resolving regulatory disputes are set out in sections 185 to 191 CA03.

4.24 The process for bringing a dispute to Ofcom and the procedure that Ofcom follows in dealing with it are set out in Ofcom's Dispute Resolution Guidelines 2011.[134]

4.25 Where Ofcom decides it is appropriate to handle a dispute referred to it, it must determine the dispute within four months of doing so, unless exceptional circumstances apply.[135] It has a number of powers in resolving disputes (other than those relating to spectrum disputes), for instance: make a declaration setting out the rights and obligations of the parties to the dispute; give a direction fixing the terms or conditions of transactions between the parties; or give a direction imposing an obligation, enforceable by the parties to the dispute, to enter into a transaction between themselves on the terms and conditions fixed by Ofcom.[136]

4.26 A determination made by Ofcom for resolving a dispute binds all parties to the dispute.[137] Ofcom may additionally choose to exercise its powers to set, modify or revoke regulatory conditions (including SMP conditions and general conditions) as a result of its consideration of a dispute.[138]

Regulation of spectrum

4.27 Ofcom is responsible for managing civilian use of radio spectrum and auctions mobile spectrum.[139] Ofcom is tasked with ensuring the appropriate allocation and assignment of spectrum through licensing and undertakes competition assessments and designs auction rules with the aim of ensuring that the allocation meets market needs and would not have a negative impact on competition on the retail and wholesale mobile markets.[140]

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[134] ibid.
[135] The right to bring a regulatory dispute to Ofcom and Ofcom's powers and duties in resolving regulatory disputes are set out in sections 185–191 of CA03.
[136] See Ofcom's Dispute Regulation Guidelines 2011.
[137] ibid.
[138] ibid.
[139] See spectrum information pages on Ofcom's website.
[140] Ofcom initial submission, paragraph 3.8.

Regulation of mobile backhaul (business connectivity)

4.28 Openreach offers copper and fibre leased lines which are used for mobile backhaul. Ofcom found BT to have SMP in most of the UK and Openreach products are provided on a regulated basis 'almost nationally'.[141] CPs source mobile backhaul either from Openreach, or from BT Wholesale which itself sources mobile backhaul from Openreach.[142] Accordingly, the Undertakings and SMP conditions imposed under the Business Connectivity Market Review (BCMR) 2013 are of relevance to this area.

4.29 The Undertakings require Openreach to provide its products and services on an EOI basis so as to limit the ability of Openreach to engage in discriminatory behaviour.[143] In 2013, Ofcom imposed a number of SMP conditions on Openreach in order to address competition problems identified in its assessment of wholesale leased lines in the BCMR 2013. The SMP conditions require Openreach to supply Ethernet products on an EOI basis.[144]

4.30 Ofcom is in the process of consulting on the next BCMR review in 2016.[145]

Regulation of Wholesale Local Access and Wholesale Broadband Access

4.31 In 2014, in its Fixed Access Market review (FAMR),[146] Ofcom concluded that BT had SMP in the supply of WLA in the UK excluding the Hull area.[147] Historically, Ofcom's approach has been to intervene upstream in order to facilitate competitive downstream markets.[148]

4.32 In order to promote effective competition in the broadband and voice markets, Ofcom requires BT to provide various WLA[149] services on regulated terms such as LLU for copper-based CGA services, and VULA[150] for fibre-based

[141] Ofcom intial submission, paragraph 5.8.
[142] Openreach products are just leased lines, whereas the BT Wholesale product is a wider managed service that uses leased lines as an input.
[143] Ofcom initial submission, paragraph 5.12. BT Wholesale also supplies mobile backhaul products (such as MEAS), which use EOI inputs, but is not subject itself to EOI. Rather Ethernet products must be supplied by Openreach on an EOI basis. See Ofcom's submission dated 30 July 2015 in response to RFI, paragraph 8.
[144] Answer to question 8, Ofcom response to Regulatory Framework RFI dated 30 July 2015. Also Ofcom initial submission, paragraph 5.12. See Ofcom, Business connectivity market review – final statement. BCMR 2013, Annex 7, Schedule 2, sets out the full list of SMP conditions.
[145] Ofcom, Business Connectivity Market Review – May 2015; Ofcom initial submission, paragraph 5.19.
[146] Ofcom (26 June 2014), Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30.
[147] As above; Ofcom initial submission, paragraph 6.10.
[148] Ofcom initial submission, paragraph 6.3.
[149] Wholesale local access refers to the fixed connection from the local exchange or access node to the end user.
[150] Virtual unbundled local access provides access to BT's NGA network in a way that is similar to how LLU provides access on the CGA network. However, rather than providing a physical line, VULA provides a virtual connection that gives CPs a direct link to their customers and provides flexibility over how this link is integrated into their network and over product offerings. The product that BT supplies in order to meet this obligation is called Generic Ethernet Access (GEA).

NGA services. This allows other CPs to use BT's access network to provide competing voice and broadband services in the downstream markets.

4.33 Ofcom has defined a number of markets that are downstream from the provision of WLA. One such intermediate market is referred to as the WBA market.[151] No further remedies were imposed in the geographic areas where LLU had been effective in promoting broadband competition (referred to as Market B).[152]

4.34 However, in some areas (referred to as Market A), Ofcom submitted that WLA remedies have not been as effective at promoting entry.[153] This is largely in rural areas where WLA remedies are less viable due to the limited number of premises in the area, which reduces CPs' opportunities to recover the costs of installing LLU equipment. In such areas, Ofcom imposes regulation further down the supply chain at the WBA level.

4.35 Other markets that are downstream from the provision of WLA include the provision of wholesale fixed analogue exchange lines (WFAEL). Ofcom found that BT possessed SMP in the provision of WFAEL in the UK excluding the Hull area. To address that SMP Ofcom imposed regulation including an obligation to supply wholesale line rental (WLR) and a charge control.[154]

Current WLA regulation

4.36 Ofcom found BT had SMP in the WLA market in the UK excluding the Hull Area. Ofcom therefore imposed a number of SMP conditions on BT. As part of the FAMR, for some services charge controls were deemed necessary by Ofcom as a remedy to address BT's 'ability and incentive to set or maintain prices at an excessively high level'.[155] Other SMP remedies were also imposed by Ofcom. These remedies remain in place until 31 March 2017.[156]

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[151] The WBA market sits between the retail broadband market, which relates to the products that consumers buy, and the WLA market, which relates to the access connection between the consumer and the network. The WBA market concerns the wholesale broadband products that CPs provide for themselves and sell to each other.
[152] Ofcom initial submission, paragraph 6.5.
[153] Ofcom initial submission, paragraph 6.6.
[154] See FAMR 2014, Volume 2.
[155] FAMR 2014, Volume 2, paragraphs 1.1 & 1.2.
[156] FAMR 2014, Volume 2, paragraph 1.4. Further details are set out in Section 10, FAMR Statement 2014. Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30 Volume 1: Statement on the markets, market power determinations and remedies; Ofcom initial submission, paragraph 6.13.

LLU

4.37 Ofcom determined in its FAMR that BT be obliged to continue to provide LLU services, including ancillary services necessary to enable and support the provision of LLU. For CGA, Ofcom imposed cost-based charge controls for LLU and WLR and a basis of charges obligation for electricity charges for LLU services.[157] LLU products must also be provided by BT on an EOI basis.[158]

Virtual unbundled local access (VULA)

4.38 In respect of NGA, Ofcom decided to continue regulating VULA, sub-loop unbundling (SLU) and Physical Infrastructure Access (PIA). In respect of VULA, Ofcom chose not to apply a cost-based charge control on VULA in the market review period.[159] Instead, Ofcom imposed an SMP condition requiring BT to maintain a minimum margin between the wholesale price of VULA and the retail price of broadband packages that use VULA as an input.[160]

4.39 Ofcom requires BT to supply a VULA product providing access to its NGA network. This provides a form of non-physical (virtual) access, which, as far as possible, replicates many of the features of a physical access remedy such as LLU.[161] The requirement to offer VULA is in addition to and supplemented by the general remedies, which include, among other requirements, the provision of VULA on fair and reasonable terms, conditions and charges.[162]

4.40 Ofcom's approach in its VULA Margin Statement has been appealed to the CAT by both BT[163] and by TalkTalk.[164]

4.41 On 29 July 2015, Ofcom published a statement[165] indicating that, having carried out a high level assessment, Ofcom had no reasonable grounds for believing that BT is contravening, or has contravened, the SMP condition requiring BT to maintain a minimum VULA margin for the period 1 to 30 April 2015.

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157 Full details are set out in Section 13, 15, 16 and 18 of 2014 FAMR Statement. Details of the LLU and WLR charge controls are set out in Volume 2 of the statement.
158 Ofcom (26 June 2014), Fixed access market reviews: wholesale local access, wholesale fixed analogue exchange lines, ISDN2 and ISDN30.
159 With the exception of GEA migration charges. FAMR 2014, Volume 1, paragraphs 12.210–12.212.
160 Further details are set out in Ofcom's statement of 19 March 2015 (the 'VULA Margin Statement').
161 FAMR 2014, paragraph 12.54.
162 FAMR 2014, paragraph 12.97.
163 British Telecommunications Plc v Office of Communications (case number: 1238/3/3/15).
164 TalkTalk Telecom Group Plc v Office of Communications (case number: 1237/3/3/15).
165 Ofcom, BT's compliance with the VULA margin control.

Current WBA regulation

4.42 Ofcom's most recent review of the WBA market was completed in June 2014 and covers the period until 31 March 2017. It found that BT had SMP in the supply of WBA in Market A, which covers 9.5% of premises. In order to address this, Ofcom told us it imposed a number of conditions on BT in Market A.[166] This included a charge control on WBA services offered in Market A. This was supported by a number of other general conditions regarding transparency, non-discrimination, accounting separation, obligations for access to and use of specific network facilities, cost accounting obligations and further price controls.[167] Further details are set out in the 2014 WBA market review.[168]

4.43 In its 2014 Review of the Wholesale Broadband Access Markets, Ofcom defined the product market for wholesale broadband as including asymmetric broadband access and any backhaul necessary to allow interconnection with other CPs. Broadband access provided via mobile, wireless and satellite networks are outside the market.[169]

Regulation of wholesale and retail mobile markets

4.44 There is currently no regulation of retail mobile markets related to a finding of SMP.[170] However, Ofcom does regulate upstream wholesale mobile voice call termination services (ie the service needed by a CP to connect a voice call to the network of a mobile operator).[171] There is also no obligation for MNOs to provide wholesale mobile services.

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[166] Ofcom initial submission, paragraph 6.18.
[167] Ofcom initial submission, paragraph 6.18.
[168] Ofcom (26 June 2014), Review of the wholesale broadband access markets: Statement on market definition, market power determinations and remedies.
[169] Ofcom *Review of the Wholesale Broadband Access Markets (Statement on market definition, market power determinations and remedies),* 2014, paragraphs 3.3 & 3.4.
[170] Ofcom initial submission, paragraph 3.7.
[171] Ofcom initial submission, paragraphs 3.7 & 3.8.

5. Trends in the industry

5.1 An introduction to the telecoms industry and infrastructure was provided in chapter 2 (Telecoms products, services and infrastructure).

5.2 The industry is changing rapidly with frequent technological developments. These trends need to be considered in our assessment on the impact of the merger on current and future competition. This chapter discusses the trends which are most relevant to our competitive assessment.

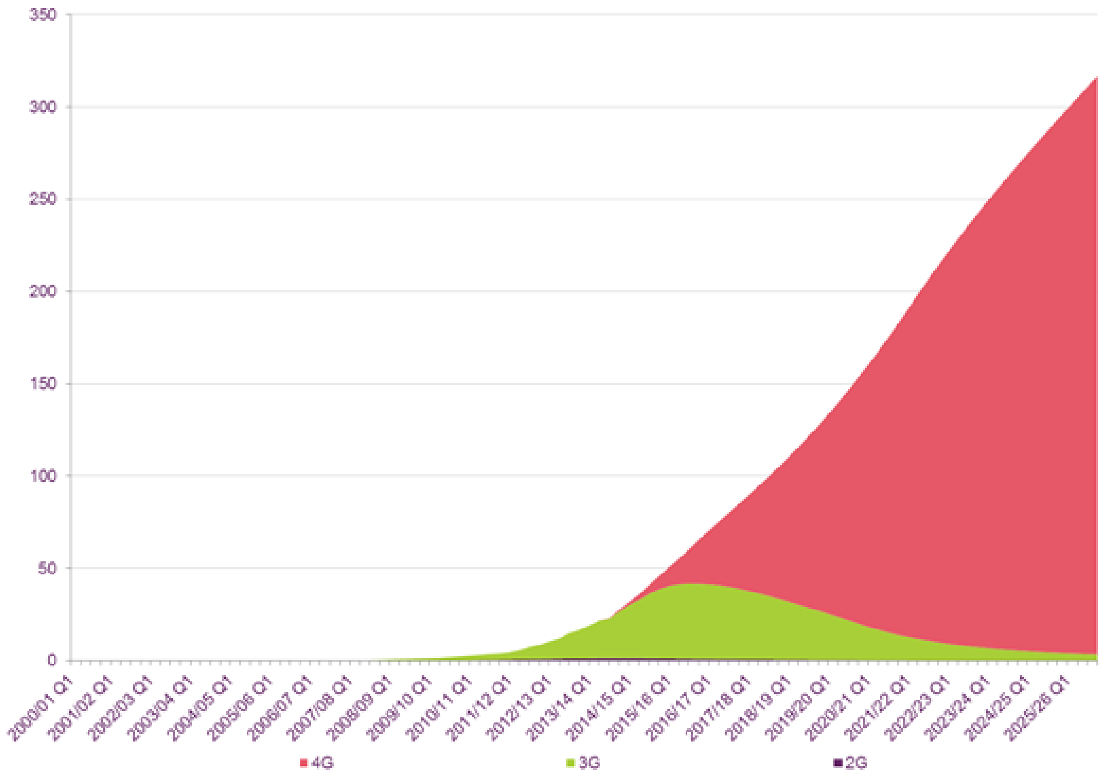
Demand for data

5.3 The evidence we have seen shows it is widely accepted amongst operators that the key trend, and challenge, facing the industry is the rapid growth in end user demand of data.[172] Clearly, the likely level of future data demand is unknown, but there is general agreement that demand for data will increase, subject to factors which may limit demand growth such as the affordability of data and the geographic coverage/capacity of networks. This implies that network capacity may become an increasingly important factor in the competitive dynamic among MNOs and fixed CPs.

5.4 In recent years there has been a significant increase in the amount of mobile data downloaded and uploaded. Industry estimates indicate that overall levels of mobile data traffic could grow by a factor of 45 between 2014 and 2030, as consumers move to 4G with its faster speeds (see Figure 5.1: Total monthly data traffic split by technology, petabytes).[173]

[172] Several third party hearings.
[173] A petabyte is a unit of digital information storage used to denote the size of data. It is equivalent to 1,000 terabytes or 1,000,000,000,000,000 bytes.

Figure 5.1: Total monthly data traffic split by technology, petabytes



Source: Ofcom Mobile Call Termination Review statement (March 2015), Figure A7.18.

5.5 It should be noted that although the percentage of growth in mobile data is large, absolute levels of use are still much lower than for fixed broadband. Ofcom figures for 2014 indicate that mobile users used an average of 0.5 GB of data per month, compared with an average of 58 GB over fixed broadband connections.

Fixed/mobile convergence and bundling

5.6 The second trend we consider below is that of ‘convergence’, both in general terms, and the commonly referenced concept of ‘fixed-mobile convergence’ (FMC). In our view, convergence takes a number of forms and each has different implications for the development of competition in communications markets. We characterise three forms of convergence:

(a) **Service convergence** – when services that have previously been seen as distinct are increasingly seen as interchangeable, for example voice calls on mobile and/or internet voice services may be substitutes for fixed calls.

(b) **Network convergence** – when networks that used to be distinct increasingly adopt common characteristics (and may start to share parts of the network infrastructure), for example Wi-Fi at home that is used for mobile data consumption.

(c) **Retail convergence/content bundling** – where different services that used to be sold separately to consumers are sold together as part of a retail bundle, for example fixed services and mobile services. In this context a converged retail offer is one in which there is some form of integration between the services offered in a bundle (whether through, for example, converged billing, or through converged services such as combined voicemails).

5.7 Ofcom notes that convergence is a growing phenomenon whereby a range of content types (audio, video, text, pictures) and services are distributed over different digital networks (fixed broadband, mobile, satellite, cable, digital terrestrial) to a variety of consumer devices (desktop computers, tablets, TVs and mobiles).[174] For example, TV and video content may be accessed using satellite, cable and digital terrestrial TV, or via a fixed broadband connection or mobile network. Service convergence, where a mobile handset receives voice calls, data, pictures, audio, video and text, may be delivered by a mobile network, or facilitated by the convergence of parts of and fixed networks which interact to provide a service to the end user.

5.8 There have been several waves of increased bundling, starting with voice and broadband services being delivered over the same connection ('dual-play'); followed by the addition of TV content ('triple-play'); and with mobile increasingly being added to retail offers ('quad-play').

5.9 Details of the bundles offered by the main suppliers can be found in Appendices B and H.

Fixed-mobile bundling

5.10 The previous section identified a trend towards retail convergence/bundling where services are sold together as part of a retail bundle.

5.11 In our competitive assessment, we have used 'fixed-mobile bundling' to describe any situation where a customer buys from the same provider both mobile services and fixed services such as broadband, fixed phone, or pay TV. The services may be, but are not necessarily, packaged together into a retail bundle, as described above or they may be offered as a result of cross-selling to an existing customer base.

5.12 The trend for operators to be present in both the fixed and mobile sectors has important implications for assessing incentives of the merged entity to harm

[174] Ofcom (December 2014), *Infrastructure Report 2014,* paragraph 8.1.

its rivals, and so are considered in assessments of several of the theories of harm.

5.13 The issue of fixed-mobile bundling is described in more detail in Appendix H, and in particular in the competitive assessment of wholesale mobile.

Over the top services

5.14 Another trend is the increasing presence of over the top (OTT) services. OTT services are those for which data and/or content is provided over the internet (that is infrastructure which is open access) rather than through a network provided by a CP. OTT services do not generate additional revenue for network providers beyond data access revenues. Examples of OTT services are WhatsApp (a messaging service which announced in March 2015 that it was adding VoIP to its messaging app[175]), Netflix and Amazon Prime Instant Video (formerly LoveFilm).[176]

Spectrum and capacity constraints

5.15 Chapter 2 described the use of spectrum to provide mobile telecoms services. Here we examine the trend towards increasing spectrum availability, and factors that may affect how quickly new spectrum will be useful for providing network capacity.

5.16 There is a relationship between spectrum and the capacity of mobile networks to support users and the speed at which operators can transmit data. The capacity and speed of mobile networks is affected by the amount of spectrum available to an operator; and for a given amount of spectrum, transmission speed is affected by the number and location of users within a particular mobile cell site and their demand for access. Additional spectrum can be used to serve more simultaneous users at a certain level of data transfer speed, or provide a set number of users with higher speeds. For further details see Appendix G.

5.17 The ownership of spectrum has recently changed. In September 2015 Ofcom approved the trading of 1.4GHz spectrum from Qualcomm to Vodafone and H3G.[177]

5.18 Figure 5.2 shows the ownership of spectrum by MNOs post the recent Qualcomm sale.

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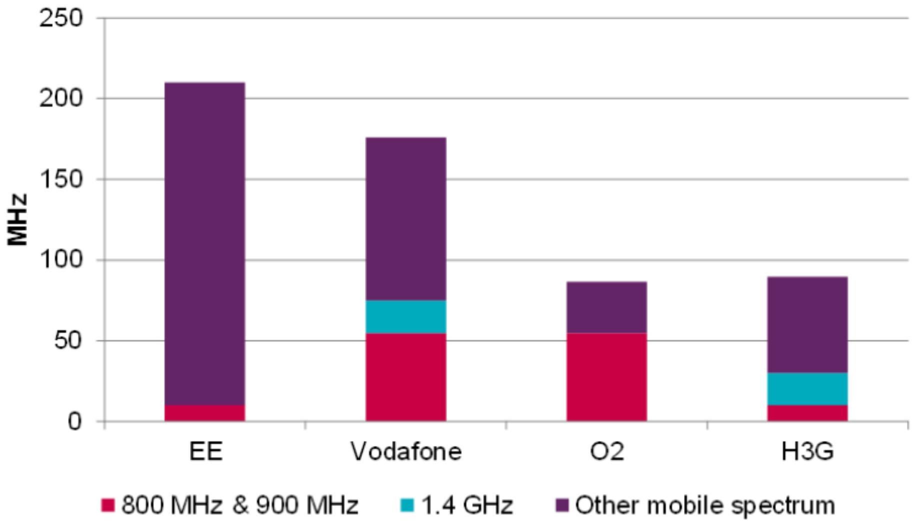
[175] *The Guardian* (February 2014), WhatsApp adding voice calls is a logical move.
[176] Ofcom SRDC (2015), p9; and *BARB Establishment Survey*, Q1 2015.
[177] See Ofcom website Spectrum trade announcement, 22 September 2015.

Figure 5.2: Holdings of spectrum after 1452–1492 MHz spectrum trades, September 2015



Source: Ofcom website Trade of frequencies statement.

5.19 Further changes in spectrum ownership will depend on the result of the planned Public Sector Spectrum Release (PSSR) auction, and allocation of spectrum in the 700MHz band. The PSSR auction will include spectrum in the 2.3GHz and 3.4GHz frequencies and is expected to take place in late 2015 or early 2016.[178] In November 2014 Ofcom published a statement[179] setting out plans to release the 700MHz band for mobile broadband and said on 26 October 2015 that its objective was to make this happen by the start of 2022 and possibly up to two years sooner.[180]

5.20 The speed at which new spectrum is deployed and can begin to carry substantial traffic depends on the existence and prevalence of compatible mobile handsets. This in turn may depend in part on the extent to which the band is already used or due to be used in other countries, which will influence device manufacturers' decisions about when to incorporate the spectrum band in question into their devices.

5.21 Factors other than the amount of spectrum available, however, can influence the capacity of mobile networks. For example, speeds can be increased (and service quality improved) by:

(a) deploying more efficient (4G) technology (by refarming spectrum used for 2G or 3G); and

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[178] See Ofcom website Public Sector Spectrum Release.
[179] http://stakeholders.ofcom.org.uk/binaries/consultations/2.3-3.4-ghz-auction-design/information-memorandum/info-memorandum.pdf paragraph 9.22.
[180] See Ofcom website 700MHz statement.

(b) using methods that reduce the number of simultaneous users of each spectrum band at each cell, such as sectorisation/cell-sectoring, adding additional macro or small sites, or encouraging offload to Wi-Fi (to the extent this is possible).

Small cells and offload

5.22 This subsection discusses the trend towards increasing use of small cells.

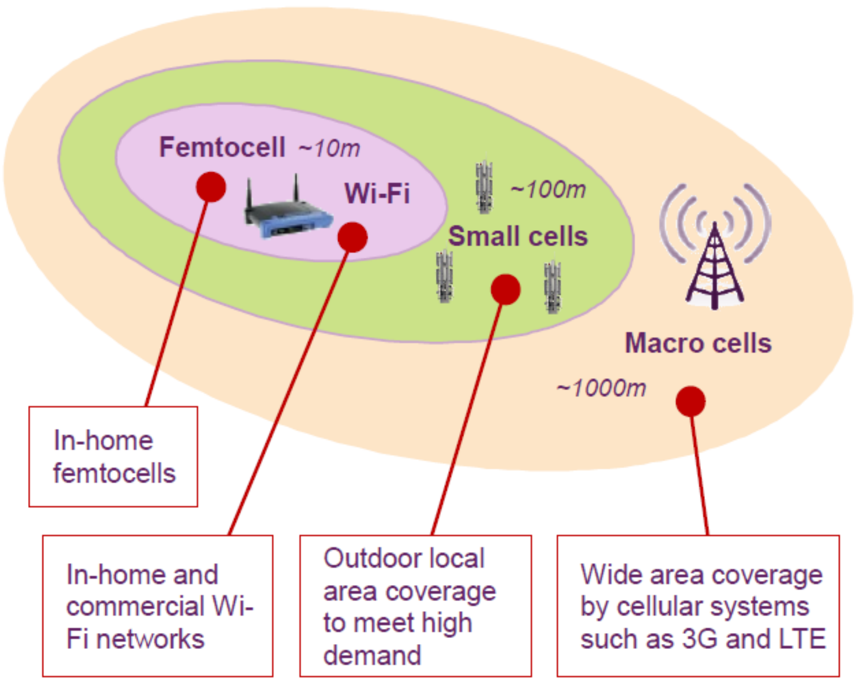
5.23 Small cells are used by CPs in their RANs to extend or enhance network coverage, often in areas of high end user demand. MNOs use base stations to provide mobile network coverage over an area surrounding the base station of up to around 1,000 metres. MNOs' base stations are referred to as the 'macro cells' and make up the 'macro network'.[181] Small cells are used to provide coverage over smaller areas, and are referred to as the 'micro' network. Types of small cells include picocells and femtocells.

5.24 Small cells include those which provide coverage over areas of up to around 100 metres, and those which are deployed within buildings where these cells provide a signal over a distance of up to around 10 metres.

5.25 Figure 5.3 shows the difference in coverage of base stations and small cells.

[181] We note that the geographic area covered by a macro cell can vary depending on the need in that particular area. In a low population area, for example, a cell would be larger than in a busy city, where it could be around 100 metres wide.

Figure 5.3: Mobile delivery technologies



Source: Ofcom.

5.26 The use of small cells requires access to licensed spectrum and a suitable location for installation. In-home cells, which are typically known as femtocells, can be included in broadband routers or provided as separate units.[182] Small cells can also be installed on the outside of buildings or using existing street furniture. Arqiva and Virgin Mobile, for example, announced in February 2015 that they will be working with MNOs to help them deploy small cells on lampposts and CCTV cameras in several UK cities.[183]

5.27 As well as providing a mobile signal inside buildings and in areas not covered by the macro network, small cells also allow CPs to link mobile devices to the fixed telecoms network.[184] This link uses licensed spectrum held by the CP concerned, and allows mobile calls and data to be backhauled over the customer's broadband access line. Backhauling traffic in this way reduces network costs.

5.28 The use of small cells varies by operator. Small cells are currently used by all four MNOs, and also by BT, which provides picocells to businesses as part of its 'One Phone' service. TalkTalk plans to begin deploying femtocells through

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[182] See, for example, Vodafone SureSignal.
[183] ISPreview (19 February 2015), Virgin Media Business and Arqiva to Improve 4G Mobile in UK Cities.
[184] A Wi-Fi signal can also be used to link a mobile device and the fixed network. Wi-Fi uses licence-exempt spectrum, whereas small cells use licensed spectrum.

a router upgrade programme.[185] In addition Vodafone has a programme to provide rural mobile coverage using femtocells.[186]

5.29 At present small cell usage is mainly restricted to 3G services including 3G voice calls, SMS and data. Small cells that can support 4G services are, however, becoming available.

5.30 In its 2014 Mobile Data Strategy Ofcom said that there was a general trend towards deployment of small cells.[187] Ofcom expected the number of small cells to grow at 10% a year, and at a faster rate than macro sites.[188] According to Ofcom, it is becoming more difficult to find suitable macro sites and small cells could provide a more 'targeted answer to capacity'.[189] Greater deployment of small cells is aimed at boosting capacity in traffic hotspots in what Ofcom described as 'easier to serve environments (outdoors and more densely populated areas)'.[190]

5.31 Ofcom also outlined a number of potential implications arising from the move to increased usage of small cells. These included:

(a) the need to provide high-performance backhaul (between base station and core network) and interconnection (between base stations);

(b) increased demand for higher frequency spectrum, which could be used to support small cells operating at lower powers;

(c) increased demand for higher frequency spectrum for wireless backhaul use; and

(d) the increased use of small cells may increase the demand, or may be dependent on, widespread availability of fibre connections for high-performance backhaul.[191]

Consolidation

5.32 Over the last ten years, there has been considerable mergers and acquisitions activity in the UK telecoms industry, much of which represents an

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[185] See Preliminary results announcement, p10.
[186] See Vodafone website.
[187] See Ofcom Consultation p33.
[188] ibid, p109.
[189] ibid, p109.
[190] ibid, p35.
[191] ibid, p91.

element of consolidation. Mergers, acquisitions and network-sharing agreements include:

(a) O2 purchased by Telefónica (2005);

(b) Virgin Mobile merged with NTL:Telewest (2006) and was rebranded (2007) to form Virgin Media;[192]

(c) network-sharing agreement created between T-Mobile and H3G (2007);

(d) passive network sharing agreements created between Vodafone and O2 (2008 and 2009);[193]

(e) Orange and T-Mobile merged to form Everything Everywhere (2010),[194] which was later rebranded as EE (2012);

(f) active network sharing (Beacon) agreements created between Vodafone and O2 (2012);[195]

(g) Vodafone purchased Cable & Wireless Worldwide plc (CWW), (2012).[196]

(h) Sky purchased Telefónica's (O2 and BE brand) consumer fixed telephony and consumer fixed broadband business (2013);[197]

(i) Virgin Media purchased by Liberty Global (2013);[198]

(j) BT announced merger with EE (2015) (being considered by the CMA, and subject of this report); and

(k) H3G announced merger with O2 (2015) (currently being considered by the Commission).[199]

5.33 This trend of consolidation has also been taking place in other European countries, resulting in several mergers of MNOs being referred to the

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[192] See Virgin Mobile UK/Virgin Media webpage.
[193] These agreements were terminated and replaced by the Beacon agreements in 2012.
[194] France Telecom and Deutsche Telekom committed that by 30 September 2013 at the latest 2x10 MHz of 1800MHz spectrum would be cleared and available for use by someone other than EE, and that by 30 September 2015 a further 2x5 MHz of 1800MHz spectrum would be similarly cleared and made available to the same party.
[195] See Vodafone press release (June 2012): Telefónica UK and Vodafone UK to Strengthen their Network Collaboration.
[196] See Vodafone press release (July 2012): Vodafone's Recommended Offer for Cable & Wireless Worldwide.
[197] See O2 press release (March 2013): Sky to Acquire Telefónica UK's Broadband and Fixed-Line Telephony Business.
[198] See Liberty Global press release (June 2013): Liberty Global Completes Acquisition of Virgin Media.
[199] A time of writing, the CMA had issued an Article 9(2) request for the merger to be referred to the CMA for consideration.

Commission. Three (in Germany, Austria and Ireland) have recently been approved subject to commitments. The latest, TeliaSonera and Telenor's joint venture in Denmark, was abandoned as effective commitments could not be agreed.

5.34 There have been several recent public comments by competition and regulatory authorities on the implications of this consolidation.

5.35 At a recent conference, EU Competition Commissioner Margrethe Vestager spoke about consolidation and said that research seems to suggest that a reduction of the number of players from four to three in a national mobile market in the EU can lead to higher prices for consumers.[200] Vestager stated that the Commission had been on the road to prohibit the merger of TeliaSonera and Telenor's joint venture in Denmark and considered the remedies offered by the parties to be insufficient to address competition concerns.[201]

5.36 In a recent speech, Ofcom CEO Sharon White noted that 'there are signs that we are entering a period of profound, structural change in communications' and that 'we are witnessing a shift towards fewer, bigger players offering a "one-stop-shop" for television and telecoms'.[202] On the implications of this consolidation White said that:

> Consolidation can in theory have benefits - improving economies of scale and making it easier to finance investment. However, Ofcom's experience is that *competition,* not consolidation, drives investment and delivers low prices. Our analysis of a dozen countries, inside the EU and beyond, shows no relationship between consolidation and investment. And specifically in the UK, we can see competition between BT, Virgin and a combination of Sky, TalkTalk and City Fibre to drive investment in ultrafast broadband – speeds of 300 Mbit/s or higher. Only when companies *cannot* make an adequate return – because competitive pressure is so intense – might we expect investment to suffer. The evidence suggests this is not the situation in the UK mobile market, which last year generated £15 billion of revenue. Even at a time when UK operators are investing billions to roll-out 4G, they are maintaining a healthy average cashflow margin of more than 12%. We continue to believe that four operators is a

[200] 42nd Annual Conference on International Antitrust Law and Policy Fordham University, 2 October 2015. See Competition and Telecoms speech.
[201] ibid paragraph 3.1.1.
[202] See Ofcom website (7 October 2015), Consumers and consolidation speech.

competitive number that has delivered good results for consumers and sustainable returns for companies.

6. The merger and relevant merger situation

Outline of the transaction

6.1 On 15 December 2014 BT announced that further to its statement on 24 November 2014,[203] it had entered into an exclusivity agreement with DT and Orange (the Sellers) in relation to BT's possible acquisition of all of their UK mobile business, EE.[204] On 5 February 2015, BT signed a sale and purchase agreement (the SPA) with the Sellers for the entire issued share capital of EE[205] for a total purchase price of £12.5 billion on a cash and debt-free basis and announced the transaction.

6.2 In view of its size, the transaction constitutes a Class 1 transaction for the purposes of the Listing Rules, and therefore requires shareholder approval.[206] On 1 April 2015 BT issued a Circular (BT Circular) to holders of BT's Ordinary Shares recommending that shareholders vote in favour of the transaction.[207] BT held a general meeting of shareholders on 30 April 2015, and announced on 7 May 2015 that shareholders had approved the transaction.[208]

6.3 Completion of the transaction is conditional upon satisfaction, or where capable of being waived, waiver of several conditions prior to the long stop date of 5 August 2016 (or such later date as the parties may agree).[209] The SPA includes a condition that completion of the transaction is subject to clearance by the CMA under the Act.[210] The SPA will terminate (and completion will not occur) if, in BT's view, any remedies required by the CMA in order to obtain merger clearance are not reasonable (unless BT, DT and Orange agree to waive this condition).[211] For details of other conditions precedent see Appendix E.

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[203] On 24 November 2014 BT stated that it noted the recent press speculation relating to a potential transaction involving Telefónica UK (O2) in the UK. BT said it continued to develop its own plans for providing enhanced mobile services to business and consumer customers, in line with previous announcements and that it remained confident of delivering on these plans and had also been exploring ways of accelerating them, including assessing the merits of an acquisition of a mobile network operator in the UK. BT stated that it had received expressions of interest from shareholders in two UK mobile network operators, of which one was O2, about a possible transaction in which BT would acquire their UK mobile business. BT stated that all discussions were at a highly preliminary stage and there could be no certainty that any transaction will occur. See BT press release (24 November 2014), Response to recent press speculation.

[204] See BT statement (15 November 2015): BT enters into exclusive negotiations to acquire EE.

[205] BT press release (5 February 2015), BT agrees definitive terms to acquire EE for £12.5bn to create the UK's leading communications provider.

[206] BT Circular (1 April 2015), p4.

[207] BT Circular, p4.

[208] BT press release (7 May 2015), Results for the fourth quarter and year to 31 March 2015.

[209] BT Circular, p25, paragraph 2.

[210] See [✄].

[211] BT Circular, p6. The merger is conditional upon there having been no material adverse change (as defined in the SPA) in relation to BT and EE. See BT Circular, p25, paragraph 2(f) and 2(g).

The CMA's investigation at phase 1

6.4 On 15 May 2015, the parties submitted a request for a fast track reference of the merger to a phase 2 investigation and gave their consent to the use of the fast track procedure. The CMA launched its initial phase 1 assessment of the merger[212] and invitation to comment on 18 May 2015. On 9 June 2015, the CMA decided, in accordance with section 33(1) of the Act that the merger may be expected to result in an SLC within a market or markets in the United Kingdom.[213]

6.5 The CMA therefore considered it was under a duty to refer the merger for further investigation and report by the inquiry group and therefore referred the merger pursuant to sections 33(1) and 34ZA(2) of the Act.[214]

Strategic rationale for the merger

BT rationale

6.6 BT has informed us that its rationale for the merger was as follows.

Acceleration of BT's mobility strategy[215]

6.7 BT told us that its diversification strategy to expand its traditional fixed line model to include mobile services would enable it to broaden its relationships with consumers, businesses and public sector clients. BT considered that the transaction would allow it to accelerate its mobile strategy (which is currently premised on organic growth as an MVNO) by [✂].[216] [✂] the likelihood that users will enjoy an improved quality of connectivity provided by femtocells.[217]

Greater control over investment and product innovation

6.8 BT told us that it considered that the combination of EE's advanced 4G network with BT's existing fixed infrastructure would give BT greater end-to-end control over future investment and product innovation to satisfy customer needs. BT submitted that it would also have increased investment capacity to develop and deploy new networks and services, particularly converged fixed-mobile services.[218] BT stated that the transaction would

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[212] *CMA2*.
[213] https://www.gov.uk/cma-cases/bt-ee-merger-inquiry#reference-decision
[214] See Appendix A for further details.
[215] BT initial submission, paragraph 4.2(a).
[216] BT initial submission, paragraph 4.2(a).
[217] BT initial submission, paragraph 4.2(a).
[218] BT initial submission, paragraph 1.4.

allow the companies to share best practice and knowhow in order to improve the services they offer and develop new services using both BT and EE's product portfolios, skills and networks.[219]

Cost synergies

6.9 BT told us it expected to achieve significant operating cost and capex synergies mainly by eliminating duplicative fixed costs currently incurred by EE. BT expected savings to arise from:

(a) consolidating sales and marketing operations;

(b) procurement savings;

(c) IT and network savings through consolidation of IT and network development and operations, and phased migration away from duplicate customer support systems;

(d) customer service savings from insourcing overseas and third party contact centre resources and expanding online/self-service facilities; and

(e) other savings from not duplicating head office functions and property.[220]

BT also told us that it expected cost savings to arise from reviewing digital platforms and the brand portfolio.

Revenue synergies

6.10 BT told us that it hoped to generate additional revenues from a full range of communications services to the combined BT and EE customer base. This included BT cross-selling its broadband, fixed telephony and pay TV services to those EE customers who do not currently take a service from BT; offering new bundled offers of fixed, mobile and pay TV products; and by accelerating the development and sale of innovative new converged fixed-mobile services to existing and new consumer and business customers. This was underpinned by the conference call on the acquisition of EE to BT investors and analysts presented by Gavin Patterson (BT's Chief Executive Officer) on 5 February 2015.[221] Gavin Patterson highlighted that a key reason for the transaction was greater scale from combining the fixed and mobile market leaders. He stated that there were few overlaps between the

[219] ibid, paragraph 1.4.
[220] Ibid, paragraph 4.3(a).
[221] Conference call on the acquisition of EE to BT investors and analysts presented by Gavin Patterson, (February 2015).

parties and therefore the merger would bring about significant cross-selling opportunities and ensure BT was well placed to meet customer demand for compelling fixed-mobile converged products. He also stated that BT expected significant demand in the market for fixed-mobile converged products and that the merged entity would be better equipped than anyone else to offer those services.

6.11 BT told us [✂].[222]

DT rationale

6.12 Our review of an internal DT presentation indicates that its strategic rationale for the transaction includes the five areas below.

Core belief of attractive UK telecoms market

6.13 First, DT has been present in the UK market since 1999 and sees solid fundamentals in the fixed-line and mobile segments of the industry. DT regards a presence in Europe's second largest economy to be a requirement for a leading European telecoms company.

[✂]

6.14 [✂]

[✂]

6.15 [✂]

[✂]

6.16 [✂]

6.17 [✂]

[✂]

6.18 [✂] transaction [✂]. DT stated that it will be the largest individual shareholder in BT and that it is laying the foundations for the two companies to be able to work together in the future.[223]

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[222] BT initial submission, paragraph 4.4.
[223] See DT announcement (February 2015): Deutsche Telekom and Orange sell their mobile Joint Venture EE to BT for GBP 12.5 billion.

Orange rationale

6.19 [✂]

EE rationale

6.20 EE told us that it believes the merger will deliver substantial benefits and specific efficiencies including, among others:

(a) Establishing a combined organisation that will develop innovative converged services across fixed and mobile networks that deliver cost and experience benefits for consumers and enterprises alike.

(b) Creating a world-leading ‘infrastructure of innovation’ that can deliver major productivity benefits through stimulating the development of rapidly digitising adjacent industries and ecosystems (eg media, gaming).

(c) Forming a new challenger in enterprise and business markets which will drive innovation and enhanced competition.

(d) Creating a UK leader in the ‘Internet of Things’ space, leveraging the best of both organisations to drive the development of this nascent opportunity and accelerate adoption of new technologies.

(e) Creating the UK's third largest corporate investor in research and development (R&D) which will lead investment in the development and deployment for 5G, accelerating its introduction into the UK and Europe.[224]

Jurisdiction

6.21 The merger is not subject to the EU Merger Regulation because both of the undertakings concerned (BT and EE) generate two-thirds of their EU turnover within the UK. The Commission, therefore, does not have jurisdiction to investigate the merger.[225]

6.22 In accordance with section 36(1) of the Act and pursuant to our terms of reference, we are required to decide first whether arrangements are in progress or in contemplation which, if carried into effect, will result in the

[224] EE initial submission, p3.
[225] Article 2, Council Regulation 139/2004 on the control of concentrations between undertakings of 20 January 2004 (EU Merger Regulation).

creation of a relevant merger situation (RMS). Section 23 of the Act states that an RMS will have been created where:

(a) two or more enterprises have ceased to be distinct enterprises; and

(b) the value of the turnover in the United Kingdom of the enterprise being taken over exceeds £70 million.[226]

Enterprises ceasing to be distinct

6.23 The Act defines an 'enterprise' as 'the activities or part of the activities of a business'. A 'business' is defined as including 'a professional practice and includes any other undertaking…in the course of which goods are supplied other than free of charge'.[227]

6.24 BT and EE would clearly satisfy the definition of an enterprise for the purposes of the Act[228] as, in accordance with section 129 of the Act, they carry out the activities of a business for gain or reward and operate as a going concern with the necessary assets, employees and customer contracts.[229]

6.25 The Act provides that two enterprises 'cease to be distinct' if they are brought under common ownership or control.[230] The merger will result in BT having legal control over EE by virtue of the acquisition of 100% of EE's shares. Therefore, the two enterprises will be brought under common ownership or control for the purposes of the Act if the merger is carried into effect.

6.26 We are therefore satisfied that two enterprises have ceased to be distinct.

Turnover test

6.27 The turnover test is satisfied if the value of the turnover in the UK of the enterprise being taken over exceeds £70 million.[231] EE is the enterprise being taken over and had a UK turnover of £6.5 billion for its most recent financial year (year ended 31 December 2014), which significantly exceeds the £70m threshold set out in the Act. We are therefore satisfied that the turnover test is met.

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[226] As the turnover test in section 23(1) of the Act is triggered in this case, it is not necessary to consider the application of the share of supply test in section 23(2).
[227] The Act, section 129(1).
[228] The Act, section 129(1) and (3).
[229] *CMA2*, paragraph 4.6.
[230] The Act, section 26.
[231] The Act, section 23(1)(b).

Provisional conclusions on relevant merger situation

6.28 Therefore, we provisionally conclude that the merger constitutes an RMS. As a result, we must consider whether the creation of that RMS may be expected to result in an SLC within any market or markets in the United Kingdom for goods or services.[232]

[232] The Act, section 36; *CMA2*, paragraph 3.5.

7. The counterfactual

7.1 We have assessed the possible effects of the merger on competition compared with the competitive conditions in the counterfactual situation (that is, the competitive situation absent the merger).

7.2 The counterfactual is an analytical tool used in answering the question of whether the merger gives rise to an SLC. While based on evidence obtained by the CMA in its investigation, it is generally not comparable in detail to its analysis of the competitive effects of the merger.[233]

7.3 We have considered what would have been likely to happen in the foreseeable future if the merger had not taken place. In line with our *Merger Assessment Guidelines*, where there was more than one possible alternative scenario, we ultimately chose the counterfactual situation that was most likely to have existed absent the merger, based on the facts available to us and the extent of foreseeable future events. We sought to avoid importing into our assessment any spurious claims to accurate prediction or foresight.[234]

H3G/O2 merger

7.4 On 11 September 2015, Hutchison 3G UK Investments Limited notified to the Commission its intention to acquire 100% of the shares of Telefónica Europe Plc from Telefónica S.A (H3G/O2 merger).[235]

7.5 The H3G/O2 merger would bring together two of the four current MNOs in the UK. It falls within the jurisdiction of the EU merger control regime (and not the UK regime) and is conditional on merger control clearance by the Commission. The Commission is assessing whether the H3G/O2 merger results in a significant impediment to effective competition (SIEC) in all relevant markets. It is not being reviewed by any other competition authority (although it is possible that it could be referred to another national competition authority and the CMA has made a request[236] to the Commission to review the merger under Article 9 of the EU Merger Regulation).

7.6 For the purpose of our assessment of the BT/EE merger, there are three possible outcomes for the H3G/O2 merger:

[233] *Merger Assessment Guidelines (CC2 (Revised)/OFT1254)*, which have been adopted by the CMA Board, paragraph 4.3.1.
[234] *Merger Assessment Guidelines*, paragraph 4.3.6.
[235] Case M.7612 – Hutchison 3G UK/Telefónica UK.
[236] CK Hutchison/Telefonica Europe (O2 UK) merger case page.

- the transaction does not proceed, due to prohibition by the Commission or for any other reason;
- the transaction proceeds as currently proposed, with the Commission's investigation not resulting in any competition remedies (that is, unconditional clearance); or
- the transaction proceeds subject to such remedies, with a wide range of possible remedies (that is, conditional clearance).

7.7 It is not possible at this stage to predict the outcome of the Commission's investigation into this parallel transaction or the precise impact that this outcome will have on competition in markets relevant to BT/EE in the UK.

7.8 We need to adopt a workable counterfactual as the basis on which to carry out our assessment. The outcome of the Commission's review of the H3G/O2 merger has remained uncertain and unpredictable throughout our investigation to date. Pending the Commission's review, it can however be noted that the H3G/O2 deal gives rise to *prima facie* competition concerns.

7.9 Against that background, whilst a potential outcome is for the H3G/O2 merger to complete as currently proposed following unconditional clearance by the Commission, we have no specific evidence to suggest this is likely. Conditional clearance is clearly a plausible outcome, given the Commission's previous decisions in the sector.[237] However, it is neither possible nor appropriate for us to predict what the conditions might be, nor to say that clearance on any specific or defined basis is the most likely outcome. It is also plausible that the H3G/O2 merger will not proceed, on the basis that the transaction raises prima facie competition concerns, and noting the recent withdrawal of the TeliaSonera/Telenor notification[238] and the Commission's recent public statements.[239]

7.10 Given that it is difficult to characterise any one of the three outcomes listed in paragraph 7.6 by itself as resulting in the 'most likely' scenario, we have considered to what extent there would be foreseeable similarities and differences between the conditions of competition resulting from the different scenarios.

[237] See Case M.6992 Hutchison 3G/Telefónica Ireland, Case M.7018 Telefónica Deutschland/E-Plus, and Case M.6497 Hutchison 3G Austria/Orange Austria.
[238] See Commission press release: Statement by Commissioner Vestager on announcement by Telenor and TeliaSonera to withdraw from proposed merger. This was a merger between two of the four MNOs in Denmark.
[239] See, for example, Competition Commissioner Margrethe Vestager's speeches, 'The State of the Union: Antitrust in the EU in 2015–2016' (15 June 2015) and 'Competition in Telecom Markets' (2 October 2015).

7.11 Although the conditions of competition would not be identical as between the scenarios of prohibition and conditional clearance, the intended basis of any commitments that the Commission might accept to remedy any concerns it found in relation to the H3G/O2 merger would be to restore the level of effective competition in the markets to which the commitments relate. Thus, competitive conditions in any market to which the commitments relate should to any material degree be equivalent to those absent the H3G/O2 merger. In any other affected market, it would also follow from the Commission's assessment that there would be no significant impediment to effective competition. It is not possible to say which markets would be the subject of remedies and which would not.

7.12 There is accordingly a significant overlap in the conditions of competition in two of the three possible H3G/O2 outcomes, being prohibition and conditional clearance. We have carried out our assessment of the merger up to these provisional findings broadly against the level of competition currently existing prior to the H3G/O2 merger. We will need to keep developments under review as we move towards our final decision.

BT presence in retail mobile services

7.13 BT has been present as an MVNO in the business segment since it sold its MNO business in 2001. It launched a new consumer offering as an MVNO in March 2015 and BT submits that absent the merger it would continue with its organic growth plans in retail mobile services using femtocell technology and the spectrum it purchased in Ofcom's 800MHz/2.6GHz auction in 2013.

7.14 Our counterfactual therefore reflects the fact that BT has entered the consumer segment of the retail mobile market. We have considered the details of BT's future competitive strength in retail mobile services as part of the competitive assessment.

Other factors and trends

7.15 Third parties have suggested other factors and trends that we should consider when determining the appropriate counterfactual. These include (but are not limited to):

- future entry by industry players into new markets;
- future capacity constraints;
- future consolidation in the industry;
- fixed-mobile convergence; and

- future changes in Ofcom regulation.

7.16 We have taken the above issues into account, where relevant, as part of our competitive assessment rather than as part of the counterfactual.[240]

[240] See *Merger Assessment Guidelines*, paragraph 4.3.2.

8. Market definition

8.1 The purpose of market definition is to provide a framework for our analysis of the competitive effects of the merger. The relevant market (or markets) is the market within which the merger may give rise to an SLC and contains the most significant competitive alternatives available to the customers of the merged companies. Defining relevant markets is therefore useful in identifying, in a systematic way, the immediate competitive constraints facing the merger entity. Market definition is a useful analytical tool, but not an end in itself, and identifying the relevant market involves an element of judgment. The boundaries of the market do not determine the outcome of our analysis of the competitive effects of the merger in a mechanistic way. We may also take into account constraints outside the relevant market (or markets).[241]

8.2 We consider market definition to be an important starting point for our analysis of the competitive effects of the merger. We therefore start by assessing the relevant product and geographic markets. We examine demand-side and supply-side substitutability and also, where appropriate, whether markets can be segmented, for example, on the basis of the type of customer, data speeds, product, etc.

8.3 Given the theories of harm that have been considered in this inquiry, we have investigated market definition in relation to five areas of the parties' operations:

(a) retail mobile,

(b) wholesale mobile,

(c) mobile backhaul,

(d) wholesale broadband, and

(e) retail broadband.

Our assessment of market definition in respect of those areas is set out in the relevant chapters.

[241] *Merger Assessment Guidelines,* paragraphs 5.2.1 & 5.2.2.

9. Assessment of competitive effects – overview

9.1 We now turn to our assessment of the competitive effects of the merger. In this section we:

- outline the ten theories of harm we have considered;
- outline our general approach to assessing the theories of harm; and
- describe our approach to assessing any interrelationships between individual theories of harm and the overall impact on competition of the merger.

Outline of theories of harm considered

9.2 Theories of harm describe the possible ways in which an SLC could arise as a result of the merger and provide the framework for our analysis of the competitive effects of the merger. In our issues statement[242] we identified eight theories of harm related to specific markets, which we have grouped into four areas.

(a) Retail mobile:

 – Unilateral effects arising from loss of potential competition (theory of harm 1).

 – Dynamic loss of competition (theory of harm 2).

(b) Wholesale mobile:

 – Input foreclosure (theory of harm 3).

(c) Mobile backhaul:

 – Input foreclosure (theory of harm 4).

 – Customer foreclosure (theory of harm 5).

(d) Fixed broadband:

 – Wholesale broadband – input foreclosure (theory of harm 6).

[242] BT/EE issues statement.

- Retail broadband – unilateral effects arising from loss of competition in ‘rural’[243] areas (theory of harm 7).
- Retail broadband – unilateral effects arising from potential loss of competition in SFBB (theory of harm 8).

9.3 Of the above theories of harm, four are horizontal (1, 2, 7 and 8) and four are non-horizontal (3, 4, 5 and 6).

9.4 In addition, we considered two other theories of harm:

- Coordinated effects (theory of harm 9).
- Conglomerate effects (theory of harm 10).

9.5 These theories of harm are described in more detail in the later sections of this report. We now explain in general terms how we have approached our competitive assessment.

Approach to assessing theories of harm

9.6 As discussed above, the theories of harm identified in our issues statement include four unilateral horizontal theories of harm and four non-horizontal theories of harm (including input and customer foreclosure). In this section we briefly describe our approach to assessing these. Further details can be found in the *Merger Assessment Guidelines*.[244]

Horizontal theories of harm

9.7 Horizontal unilateral effects can arise when one firm merges with a competitor that previously provided a competitive constraint – allowing the merged entity profitably to increase prices, lower quality, reduce the range of their services and/or reduce innovation – all relative to the counterfactual. After the merger, it is less costly for the merged entity to raise prices (or lower quality) because it will recoup the profit on recaptured sales from those customers who would have switched to the offer of the other merging company.

9.8 We assess these horizontal theories by considering how important a competitor one of the merging parties was to the other, or was likely to become in the foreseeable future, relative to other competitive constraints in

[243] Defined as Market A, using Ofcom definition.
[244] *Merger Assessment Guidelines.*

the market; and whether the removal of that constraint is likely to lead to substantially less competition and thus worse outcomes.

Non-horizontal theories of harm

9.9 Non-horizontal mergers relate to a situation where one merging party (an 'upstream firm') supplies an input to a good or service provided by the other merging party (a 'downstream firm'). The *Merger Assessment Guidelines*[245] give three examples of types of non-horizontal mergers:

- vertical merger between an upstream supplier and a downstream customer which purchases the supplier's goods, either as an input into its own production or for resale;
- diagonal merger between an upstream supplier and a downstream competitor of the customers that purchase the supplier's goods; and
- conglomerate merger of two suppliers of goods which do not lie within the same market, but which are nevertheless related in some way.

9.10 A merger may have aspects of more than one of the above. For example, in relation to wholesale mobile services, EE currently supplies BT – which would make this a 'vertical merger' – and BT's rivals such as Virgin Media – which would make this a 'diagonal merger'. Mobile backhaul and wholesale broadband inputs also have both vertical and diagonal aspects. For simplicity, in these provisional findings we refer to the issues raised by both vertical and diagonal elements as 'vertical issues' or 'vertical theories of harm', to denote that we are considering two different levels of supply; but in our analysis we also consider the implications of the diagonal aspect of the merger.

9.11 The concern under a vertical theory of harm is that bringing together the merging parties creates or exacerbates the incentive or ability of the merged firm to harm competition at one level of the supply chain through its behaviour at another level of the supply chain.[246] This could take the form of input foreclosure, where the merger is likely to raise the costs or downgrade the quality of downstream rivals by restricting their access to an important input, or customer foreclosure, where the merger is likely to foreclose upstream rivals by restricting their access to a sufficient customer base.[247]

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[245] *Merger Assessment Guidelines*.
[246] Ibid.
[247] Other vertical theories harm may arise as well in a vertical merger, see paragraph 5.6.13 of *Merger Assessment Guidelines*. We have focused in these provisional findings on the theories of harm that could arise from the merger at issue.

9.12 In this document we use the term ‘partial input foreclosure’ to indicate a situation where the merged firm could increase the price it charges for, or reduce the quality it offers for, an important input that rival downstream firms require to be active on the downstream market. This in turn would increase the costs or reduce the quality of rival downstream firms, making them less competitive against the merged firm’s downstream product or service.

9.13 We use the term ‘total input foreclosure’ to describe a situation where the merged firm stops supplying its downstream rivals altogether. This has the effect of reducing the set of suppliers available to rival downstream firms (or even eliminating supplies where the merged entity is the only supplier of the relevant input), which might in turn effectively reduce (or eliminate) competition in the input market leading to higher input prices for rivals and potentially other harmful effects.

9.14 In mergers where the downstream merging firm also buys inputs from other upstream firms, the merged firm might seek to reduce downstream sales of rivals’ products to its own downstream arm (partial customer foreclosure), or stop buying from upstream rivals altogether (total customer foreclosure). The latter situation may arise with this merger when considering the supply of dark fibre by upstream rivals, which competes with the BT network for backhaul purchased by the CPs including EE.

9.15 For a vertical theory of harm to be established, we will typically frame our analysis by reference to the following three questions:[248]

(a) Ability: Would the merged entity have the ability to harm its rivals by engaging in the foreclosure strategy?

(b) Incentive: Would it have the incentive to engage in that strategy?

(c) Effect: To the extent that the merger creates or enhances the merged entity’s ability or incentive to engage in the strategy, would the effect of any action by the merged entity be sufficient to reduce competition in the affected market to the extent that, in the context of the market in question, it gives rise to an SLC?

9.16 Whilst these questions are to an extent interrelated, **all** three must be answered in the affirmative for the theory of harm to hold and must be of an order of magnitude likely to give rise to an SLC (that is, the legal test at phase 2). Therefore, if in our analysis we do not find, for example, an ability to harm

[248] *Merger Assessment Guidelines*, paragraph 5.6.6. Note that the Commission uses broadly the same framework, see *Guidelines on the assessment of non-horizontal mergers under the Council Regulation on the control of concentrations between undertakings*, OJ C 265 (18 October 2008), p6, paragraph 36.

rivals, the theory of harm can be dismissed without further assessing incentive and effect. The SLC must be expected to be caused by the merger, that is, the merger must create or strengthen at least one of the factors of ability, incentive and effect.

9.17 An assessment of the ability of the merged entity may involve factors such as whether regulation prevents or restricts this ability, the importance of the input and the merged entity's market power upstream (in case of input foreclosure), or the importance of the merged entity as a purchaser (in case of customer foreclosure). The threat of foreclosure may also be reduced or eliminated where rivals are able to resort to timely and effective counter-strategies.

9.18 An assessment of the incentive of the merged entity may involve qualitative and quantitative evidence. Evidence does not have specific probity according to its characteristics so that, for example, quantitative evidence is not necessarily better evidence than qualitative evidence.[249] A quantitative approach may involve 'vertical arithmetic', involving a calculation of the likely margin foregone through sales lost due to foreclosure and the likely margin gained by the merged entity though sales acquired elsewhere in the value chain. This may take into account both direct changes (for example from refusing to supply or purchase) or broader effects (for example effects on related products through bundling/cross-selling or through reputations). A qualitative approach may in particular be important where there is considerable uncertainty over the quantitative assumptions made in the vertical arithmetic (for example, because assumptions require speculation about future market developments, and the results of the vertical arithmetic are particularly sensitive to those assumptions).

Interrelationships between theories of harm and approach to considering overall effect of the transaction on competition

9.19 As we stated in our issues statement, in addition to considering each theory of harm separately, we also considered how the theories interact, assessing the effect of the merger in the round.

9.20 The consideration of several theories of harm must not detract from the essential proposition that we must determine whether, overall, we believe that an SLC is expected in any market or markets in the UK. Therefore, we also

[249] See, for example, *Aberdeen Journals Limited v the Office of Fair Trading* (2003) CAT 11 at paragraph 258 – which stated that quantitative evidence is not higher than qualitative evidence. This case was in the context of a Competition Act 1998 case and it referred to European Union law, but the principle would apply equally to merger investigations.

considered whether an overall expectation of an SLC may be based upon our composite view of multiple alternative theories.

10. Retail mobile: overview

Introduction

10.1 In relation to retail mobile, we investigated the following possibilities:

- unilateral effects arising from loss of existing and potential competition; and

- dynamic loss of competition.

10.2 Before we assess these two theories of harm, this chapter provides an overview of the retail mobile sector, including market definition and the nature of pre-merger competition within the retail mobile sector.

Description of retail mobile

10.3 Retail mobile services are supplied to customers in the UK by MNOs and MVNOs. For further descriptions of MNOs and MVNOs, see Chapter 2 of this report (Telecoms products, services and infrastructure).

10.4 There are four MNOs active in the UK, which hold mobile spectrum and have radio access networks: EE, Telefónica (operating under the brand name O2), Vodafone, and H3G (operating under the brand name Three). These MNOs provide both wholesale and retail mobile services (the wholesale mobile market is considered in more detail later in this report in Chapters 13 and 14). Together, the MNOs supply around [✂] of subscribers in the retail mobile market. Including Tesco Mobile, a 50:50 joint venture with Telefónica, they supply around [✂]

10.5 The remainder of retail mobile is supplied by MVNOs. There are over 100 MVNOs in the UK that purchase wholesale mobile services from MNOs (directly or through intermediaries), and compete with them at the retail level (see Chapter 2 and Appendix F). MVNOs include:

(a) CPs such as BT, TalkTalk and Virgin Media, which together currently represent approximately [✂]% of total UK MVNO retail revenues (of which Virgin Media accounts for [✂]).

(b) Joint ventures between an MNO and a separate company. Tesco Mobile is a joint venture between Tesco and Telefónica, and accounts for

approximately [✂]% of total UK MVNO revenues. Sainsbury's Mobile [✂].[250]

(c) Other independent providers, including retailers (such as Asda), those that focus on low-cost international calling (for example, Lyca Mobile and Lebara), business services (eg Abica), data-only services, or other niche offers, which make up the remainder of the market.[251]

10.6 In the business sector, which makes up roughly 12% of mobile subscriptions,[252] only three of the MNOs – Vodafone, Telefónica and EE - have substantial shares (with over 25% each). H3G has a share of [✂]. Of the MVNOs competing in this sector, BT has the largest presence of [✂]. Virgin Media has a share of [✂], [✂]. A number of smaller MVNOs are also present.

Market definition

10.7 To determine the appropriate market definition within which carry to out our assessment in relation to retail mobile, we investigated the provision of retail mobile services by MNOs and MVNOs to the business and consumer sectors as well as any relevant subsegments or downstream markets.

Parties' views

10.8 The parties submitted that the appropriate market definition in this case was a national market for the supply of retail mobile telecommunications services. They referred to decisions by the Commission and submitted that from a supply-side perspective there was substitutability of different segments of retail mobile services.

Previous Commission decisions on market definition

10.9 There are no recent UK merger decisions in the retail mobile sector. The Commission's decisions are a useful reference. The Commission has consistently found that mobile telecommunications services (including voice, SMS and data) constitute a separate market from fixed telecommunications services.[253]

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[250] And is potentially ceasing its mobile operations. See the press release on the mobile news website.
[251] For example, charity-focused providers such as The People's Operator, which is hosted on EE's network and has pledged to donate a fixed percentage of earnings to charity.
[252] Ofcom, Communications Market Report 2015, figure 4.57[✂]
[253] Case M.7018 Telefónica Deutschland/E-Plus, recital 64.

10.10 In respect of retail mobile services, in past reviews the Commission has consistently defined national markets for the supply of retail mobile services to end customers.[254] It has in previous cases considered whether, and not found it necessary, to define narrower markets, largely on the basis of supply side factors, including because the conditions of competition are similar across subsegments (see *(a)* to *(d)* below).[255] However, it has noted that within the market for the supply of retail mobile services the following segmentations may nonetheless be relevant for the competitive assessment:[256]

(a) by customer (business customer as distinct from private customers);

(b) by tariff (pre-paid as distinct from post-paid services);

(c) by voice as distinct from SMS and data services; and

(d) by type of technology (2G, 3G and 4G).

Ofcom's past reviews

10.11 Ofcom's most recent review of the retail mobile market was contained within its mobile call termination market review 2015-18.[257] In it, Ofcom concluded that the mobile call termination prices charged[258] for calls to mobile numbers were not constrained by over the top (OTT) services such as Skype or WhatsApp, which provide voice and text services over customers' data connection (where the latter do not use mobile numbers). In its analysis of the retail mobile market in 2011, Ofcom stated that it may be reasonable to assume there was a single product market for retail mobile services,[259] though it noted that possible technological developments could mean different retail markets related to different technologies in the future.[260]

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[254] See for example Case M.7018 Telefónica Deutschland/E-Plus, recitals 31–55; Case M.6992 Hutchison 3G UK/Telefónica Ireland, recital 141; Case M.6497 Hutchison 3G Austria/Orange Austria, recital 58.
[255] See for example Case M.7018 Telefónica Deutschland/E-Plus, recital 30; Case M.5650 T-Mobile/Orange, recital 24; Case M.6497 Hutchison 3G Austria/Orange Austria, recital 58.
[256] See for example Case M.6992 Hutchison 3G UK/Telefónica Ireland [141] and [163]. Case M.6497 Hutchison 3G Austria/Orange Austria [30] and [73].
[257] Mobile call termination market review 2015-18, published on 17 March 2015.
[258] Charge made by the 'terminating' provider (of the customer receiving a call) to the provider whose customer originates the call.
[259] Ofcom (2011), *Consultation on assessment of future mobile competition and proposals for the award of 800MHz and 2.6GHz spectrum and related issues. Annex 6: Competition Assessment*, paragraph 3.20. See also of the main consultation document, paragraph 5.29.
[260] Ofcom CMR 2014, p3.

Our assessment

Product scope

10.12 We first considered whether it was appropriate to define a market wider than the supply of retail mobile telecommunications services.

10.13 The parties submitted that they faced a strong constraint from OTT services.

10.14 While we note that these services may place a constraint on the pricing of mobile voice and SMS services, we are not currently persuaded that they place a constraint on the pricing or quality of data services provided by mobile operators. We therefore do not propose to widen the market to include these services.

10.15 We also considered competition between fixed and mobile broadband services. This is most relevant to our competitive assessment of retail broadband and our conclusions are set out in that context in Chapters 16 to 18.

10.16 We received no evidence that it is important for our assessment that we segment the market according to prepaid vs postpaid services, SIM-only vs handset post-paid services, or voice and data vs data only or machine to machine services, and so here discuss them further in relation to market definition.

10.17 We also considered whether there are separate markets for the following subsegments:

(a) Business customers, and subsegments within business customers (for example large companies vs SMEs).

(b) Mobile services sold in a bundle or converged product with, or by the same operator as, fixed (voice, broadband and/or TV) services.

(c) Businesses and consumers requiring high data allowances (and/or high speed). For example, where 4G services may be relevant for high speeds and data allowances.

10.18 These subsegments are relevant to our competitive assessment because they are those in which third parties have submitted either that a stand-alone BT may be particularly strong, or that other constraints in the market are currently, or likely to become, weaker.

- *Consumer vs business services*

  - *Parties' view*

10.19 The parties submitted that the conditions of competition for the supply of mobile services to business and consumers, particularly given supply-side considerations, were not sufficiently different as to form distinct markets.[261]

10.20 They also told us that there was demand-side substitution between business and consumer products, because business customers often purchased consumer tariffs for mobile services, particularly if the business in question was small. This made it difficult for MNOs to identify exactly who were business customers and who were consumers. In this respect, the parties were unable to quantify the number of their customers who took 'consumer' mobile propositions for business purposes.[262]

  - *Commission's views in recent cases*

10.21 The Commission has previously found that from the supply side although MNOs consider business customers as a distinct group from private customers (that is, consumers), services to these two groups do not constitute separate product markets, because of supply-side substitutability.[263] This was on the basis that the two services provided to each customer group are essentially the same and that MNOs serving one group of customers could easily switch to serving the other.[264]

  - *Third parties' views*

10.22 We have been told by third parties that from the demand-side, business and consumer mobile services may be substitutable, in particular for SMEs.

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[261] Parties' response to the issues statement, paragraph 3.6.
[262] Parties' response to the issues statement, paragraph 3.7.
[263] See for example Case M.6992 Hutchison 3G UK/Telefónica Ireland (2014); Case M.7018 Telefónica Deutschland/E-Plus (2014); Case M.6497 Hutchison 3 G Austria/Orange Austria (2012); Case M.5650 T-Mobile/Orange (2010).
[264] Case M.6992 Hutchison 3G UK/Telefónica Ireland [150]. Though in mergers between fixed telephony and broadband service providers, where both parties involved were more active in the business segment, the Commission either identified a separate market for (large) business customers or left the market definition open. See for example, Commission decision of 29 June 2009, Case M.5532 Carphone Warehouse/Tiscali UK, recitals 22–27; Commission decision of 14 April 2014, Case M.7109 Deutsche Telekom/GTS, paragraphs 50–53; Commission decision of 2 July 2014, Case M.7231 Vodafone/ONO, paragraph 18.

- *Our provisional view on consumer vs business services*

10.23 We considered the extent of substitution between retail mobile services for businesses and consumers, from both a demand-side and supply-side perspective in the UK.

10.24 From the demand side, we note from the submissions received that there is some substitution between business and consumer products (particularly for SMEs).

10.25 However, we recognise that there may be some demand-side features that are different for the larger business segment (particularly large multinational companies), [✂] Telefónica provided data showing that businesses buy fixed and mobile products together more often than consumers, and we understand that businesses often purchase a range of other services along with fixed telephony.[265]

10.26 In relation to the supply side, we considered whether the same firms compete to supply these different products and the conditions of competition between the firms are the same for business and consumer mobile, such that the segments could be aggregated without affecting our competitive assessment.[266]

10.27 Market share data suggests that the current conditions of competition vary to an extent across the business and consumer segments, with the operators having different shares and strength across each segment. In particular, [✂].

10.28 In respect of supply-side substitution, we note that the same core production assets are used to supply both businesses and consumers. We considered whether firms have the ability and incentive quickly to shift capacity supplying business and consumer customers. We received evidence that it is possible to do so, but not necessarily quickly. For example:

(a) Having been present in business mobile [✂].[267]

(b) Virgin Media business estimates that its current market share of business mobile is [✂] its consumer share [✂]). At present, [✂].

(c) [✂]

10.29 We did not, however, find it necessary for the purposes of this merger assessment to provisionally conclude on whether business and consumer

[265] For more detail see our later competitive assessment, and Appendix H.
[266] *Merger Assessment Guidelines*, Sections 5.2.17–5.2.19.
[267] See BT One Phone.

segments constituted separate downstream markets within the retail mobile market in the UK, because it did not make a difference to the outcome of our competitive assessment. We have therefore taken account of differences between business and consumer customers where appropriate within our competitive assessment.

10.30 As set out later in Chapter 13 (our assessment of wholesale mobile), we have also considered whether a market exists for fixed and mobile products sold to the same customer (ie fixed-mobile bundles), which is separate from the markets for the stand-alone fixed and mobile products. Given the weakness of the evidence that bundles will not be constrained by unbundling, we did not define a separate market for fixed-mobile bundles in the UK. However, we received evidence that such sales may grow in importance and for that reason we have taken the issue into account within our competitive assessment where appropriate.

- *High data users (and/or high speed) vs low data users (and/or low speed)*

10.31 We considered whether it was appropriate to define markets for subsegments of consumers that desire generous data packages and/or high speed data services.[268]

  - *Parties' views*

10.32 The parties submitted that in respect of customers that wanted high speeds or high data allowances, there was significant competition in the market. The parties also told us that there wasn't a submarket for 4G mobile services, which was in line with EU and UK precedents.[269]

  - *Commission's view in recent cases*

10.33 The Commission has previously considered whether the market should be segmented by type of network technology (ie 2G, 3G, or 4G),[270] but has concluded that the different technologies for retail mobile telecommunication services do not constitute separate markets.[271] For example, in Hutchison 3G Austria/Orange Austria (2013), the Commission found this was because of limited customer differentiation between different types of technology (the vast majority of market participants said a change to 4G was not important to them

[268] *Merger Assessment Guidelines*, 5.2.5 (c).
[269] Parties' response to the issues statement, paragraphs 3.8–3.17, p4–7.
[270] See for example Case M.6497 Hutchison 3G Austria/Orange Austria (2013), Case M.5650 T-Mobile/Orange (2010)
[271] Case M.7018 Telefónica Deutschland/E-Plus (2014), paragraph 50.

and they were not willing to pay a premium for it). Furthermore, 4G was expected to be complemented by 3G.[272]

10.34 The Commission has, however, noted that there are clear performance differences between the technology levels and that the importance of this would vary based on the end user's pattern of use.[273]

- *Third party views*

10.35 We received a number of submissions that data speeds and the ability to offer generous data allowances were important for competition, and some that customers may be segmented according to their desire for high speeds or high data allowances (that is, that there were demand-side differences between customer segments). We also received some submissions that over time certain MNOs may become less able to compete for customers that want high speeds or data allowances, suggesting supply-side distinctions across customer subsegments.

- *Our provisional view on high data users vs low data users*

10.36 From a demand-side perspective, we did not receive evidence to support a finding that consumers would not switch between high and lower data allowances or speeds in response to a price rise.

10.37 From a supply-side perspective, we note that all the MNOs offer 4G and 3G services,[274] and the extent of their 4G coverage is rapidly converging.[275] [✂]. [✂]. Given this, we consider that the conditions of competition do not vary significantly across 2G, 3G and 4G services, and the segments can be aggregated on that basis.[276] We note that further new technologies are likely to develop, but consider that for a substantial period there is likely to continue to be demand-side substitution between these and earlier technologies.

10.38 Additionally, from a supply-side perspective, Appendix G sets out the evidence we received on the importance of data allowances and speed, and the ability of each provider to offer high data allowances and speeds at levels that are important for competition. It appears that all MNOs currently offer generous data packages on competitive terms. [✂]. However, we considered that because of the options available to operators for improving the speeds they can offer – including purchasing more spectrum as it is released - this

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272 Case M.6497 Hutchison 3G Austria/Orange Austria [44, 45, 46].
273 Case M.6497 Hutchison 3G Austria/Orange Austria [45].
274 H3G does not provide 2G services, but all services offered over 2G can be provided over 3G.
275 Ofcom Infrastructure Market Report 2014 paragraph 1.44
276 *Merger Assessment Guidelines* paragraph 5.2.17

effect would be time limited (as well as having an uncertain effect on competition for subsegments of consumers).

10.39 Based on the evidence we have seen, we have not found it necessary to provisionally conclude that a separate market exists for customers with specific types of demands for data allowances, data speeds or that the market should be segmented by types of network technology given the degree of supply-side substitutability. We have, however, taken these factors into account in our competitive assessment where appropriate.

Geographic scope

10.40 Given the parties' activities overlap in the UK, we considered whether or not competition takes place in the supply of retail mobile telecommunication services in the UK (or a narrower or wider geographic market). We received no evidence to support a different geographic market that would be wider or narrower than the UK. We set out some of the key considerations below.

- *Parties' views*

10.41 [✂]

- *Third parties' views*

10.42 [✂]

10.43 [✂]

10.44 The MNOs told us that they had a range of options which they pursued to lessen possible congestion at particular sites, [✂].

- *Our provisional view on geographic scope*

10.45 Our provisional view is that it is not appropriate to define narrow geographic markets on the basis that the quality of operators' service varies by geography. This is because:

(a) pricing is national; and

(b) there are local variations in network quality, but there are supply-side steps available to MNOs for improving service in particular local geographies (suggesting that local geographies may be aggregated on the basis of supply-side substitution).

10.46 However, within the competitive assessment we take account of temporary local quality variations (such as slower speeds caused by site congestion) and how this may affect the closeness of competition between operators at the national level.

Our provisional conclusion on market definition

10.47 Our provisional conclusion is that there is a national (UK) market for the supply of retail mobile telecommunication services. We note that competitive constraints may vary within certain market subsegments, including fixed-mobile bundles, business customers and packages including high speeds and generous data allowances, and have therefore considered those factors in the competitive assessment, where appropriate.

Nature of competition

10.48 To inform our assessment of the competitive effects of the merger in respect of retail mobile services under the first two theories of harm, we considered pre-merger competition in the retail mobile services market by assessing, in particular, shares of supply, the nature of competition and market outcomes within that market.

Parties' view

10.49 The parties submitted that the retail mobile services market is competitive. They told us that in addition to the four MNOs, there were over 100 MVNOs active in the UK including powerful brands like Asda, Tesco, TalkTalk, Virgin Media and the Post Office. The parties also highlighted that Sky was to launch an MVNO service next year, and that there was frequent new entry by MVNOs.

Ofcom and other third parties' views

10.50 Ofcom submitted that it believes that end to end competition (ie between national MNOs) has been important in delivering good outcomes in terms of investment, innovation and prices.[277]

10.51 Other third parties also told us that the UK retail mobile market is competitive. For example, H3G told us, in respect of BT's entry into consumer mobile, that the overall market dynamic is still going to be very competitive. H3G

[277].Ofcom's initial submission, paragraph 3.16.

submitted that the market was competitive before BT's entry and that it was confident it would continue to be competitive without BT being a stand-alone competitor.[278]

Shares of supply

10.52 Shares of supply provide a starting point for the assessment of competition pre-merger. They are shown in Table 10.1 below for major operators both as aggregate figures, and separately for business and consumer segments.

Table 10.1: Shares of subscribers in retail mobile

%

Operator	*2012 (overall)*	*2013 (overall)*	*2014 (overall)*	*2014 (business including M2M)*	*2014 (consumer)*
EE	[✂]	[✂]	[✂]	[✂]	[✂]
BT	[✂]	[✂]	[✂]	[✂]	[✂]
BT (with EE)	[✂]	[✂]	[✂]	[✂]	[✂]
Telefónica	[✂]	[✂]	[✂]	[✂]	[✂]
Vodafone	[✂]	[✂]	[✂]	[✂]	[✂]
H3G	[✂]	[✂]	[✂]	[✂]	[✂]
Tesco (50:50 joint venture with Telefónica)	[✂]	[✂]	[✂]	[✂]	[✂]
All MVNOs excluding Tesco	[✂]	[✂]	[✂]	[✂]	[✂]
Virgin Media	[✂]	[✂]	[✂]	[✂]	[✂]
Others	[✂]	[✂]	[✂]	[✂]	[✂]

Source: Parties' initial submission, Annex J, Parties' estimates based on internal BT and EE data, operators' reported KPIs, GfK reports, Kantar reports, Ovum and data available at Companies House.[279]

10.53 Table 10.1 shows that in the consumer segment, EE has the largest share of supply with [✂]%, followed by Telefónica with [✂]%, Vodafone with [✂]% and H3G with [✂]%. Note that the figures do not include BT consumer mobile, as this only launched in 2015 (or indeed Sky which has not yet launched its mobile services).

10.54 In the business segment, Vodafone is the largest player with [✂]% share of supply, followed by Telefónica with [✂]% and EE with [✂]%, with other players (including BT and H3G) having much lower shares ([✂]).

Nature of competition

10.55 To assess the nature of competition in retail mobile, we considered the parameters of retail competition, competitive interactions between operators, customer switching and market outcomes.

[278] H3G hearing summary, paragraph 106.
[279] The parties submitted that shares for other MVNOs active in the business segment could not be estimated and that the figure of [✂]% used understated their position. They submitted that the small overlap between the parties even on this basis meant it was not necessary to determine the exact shares of such providers in the business segment.

- *Parameters of retail competition*

10.56 As set out in the appendices on retail mobile and on spectrum and capacity constraints (Appendices F and G) we received evidence from the parties and third parties which indicated the importance for competition of:

(a) price;

(b) network quality; and

(c) other factors including the handsets offered, and branding.

10.57 In relation to network quality, a range of related factors are relevant including coverage, reliability and speed. In relation to speed, we received mixed evidence on the role of speeds above the minimum necessary for activities such as streaming high definition video. We provisionally concluded that while operators can make marketing claims about offering very high speeds, a more important driver of competition may be the avoidance of low speeds that damage consumers' experience of, for example, web browsing, gaming or video. One cause of slow speeds can be congestion.

10.58 We also received evidence that sales through physical retail stores are important,[280] whether owned by the operator or by companies that make indirect sales such as Carphone Warehouse.[281] The four MNOs, Virgin Media, and retailers such as Asda and Tesco are all able to sell through their own retail stores, whereas BT, Sky and TalkTalk do not have stores.

- *Competitive interactions between operators*

10.59 We considered data on operators' shares of subscribers, data and calls over time, and reviewed operators' internal documents.

10.60 Internal documents showed that [✂].

10.61 H3G has grown its share of the market over time [✂], and H3G appears to be very strong in competing for customers that have high levels of data use.[282] Although MVNOs as a whole have increased their share of revenue over time, individual MVNOs do not appear to be exerting very strong constraints (for example, [✂]).

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280 Eg Ofcom submission.
281 Carphone Warehouse (now Dixons Carphone Warehouse) has recently announced it is launching a new retail mobile service as an MVNO.
282 See Appendix G.

- *Switching*

10.62 Rates of switching are one indicator of the extent of competition in a market, because they indicate whether consumers are willing and able to change supplier.

10.63 The parties submitted data from an independent analyst showing that each year 10 to 18% of customers switch provider, depending on the operator.[283] In comparison with other industries, these switching rates are moderate – they are lower than for car insurance (36%), similar to electricity and gas (12%) and higher than for bank accounts (5%) and broadband (9%).[284] A more recent survey, which was commissioned by the CMA as part of the retail banking market investigation, found that in 2014 only 3% of personal current account (PCA) customers had switched their PCA to a different bank in the last year.[285]

10.64 These annual switching rates are set in the context that in contrast with car insurance – which has an annual cycle; current accounts where there are no contracts; and energy markets where approximately 70% of customers don't have contracts – many customers of mobile services have two-year contracts.[286]

10.65 The parties submitted data showing that 23% of customers switched within a 24-month period. A further 60% upgraded within a 24-month period without switching, and the parties submitted that this indicated a threat of consumer switching which exerted a competitive constraint.[287]

10.66 We also noted evidence that the perceived cost of switching in the retail mobile market is quite low with 90% of mobile customers who had switched at least once considering the process to be very or fairly easy.[288]

10.67 On the basis of the evidence we have seen, we provisionally consider that the switching evidence is broadly supportive of the view that the mobile market is competitive.

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[283] Parties' initial submission, Annex J, reporting Enders Analysis *UK mobile market Q3 2014: Growth maintained, but uncertainty ahead,* p5. O2 appears to have the lowest churn and H3G the highest.
[284] See UKRN (2014), *Consumer engagement and switching.*
[285] See CMA (2015), *Retail market banking investigation: summary of provisional findings report*.
[286] In 2013 65% of consumers had contracts and two-thirds of new contracts had a term of two years. See UKRN (2014), *Consumer engagement and switching*.
[287] Parties' initial submission, Annex J.
[288] See UKRN (2014), *Consumer engagement and switching*.

- *Market outcomes*

10.68 We also considered direct evidence on the mobile prices and quality that customers receive, as well as the profits that operators earn.

10.69 Evidence provided to us suggested that mobile prices in the UK are decreasing, and that UK prices and operators' margins are lower than in most European countries.

10.70 For instance, evidence from Ofcom indicates that the industry average revenue per mobile subscription has declined over time. Average revenue from prepay customers has declined by 6.8% a year on average over the period 2009 to 2014; average revenue from post-pay (contract) customers has also declined (by 5.0% a year), although the overall (blended) revenue per user has declined more modestly (0.8% a year), reflecting the migration of higher-use prepay users onto post-pay services.[289]

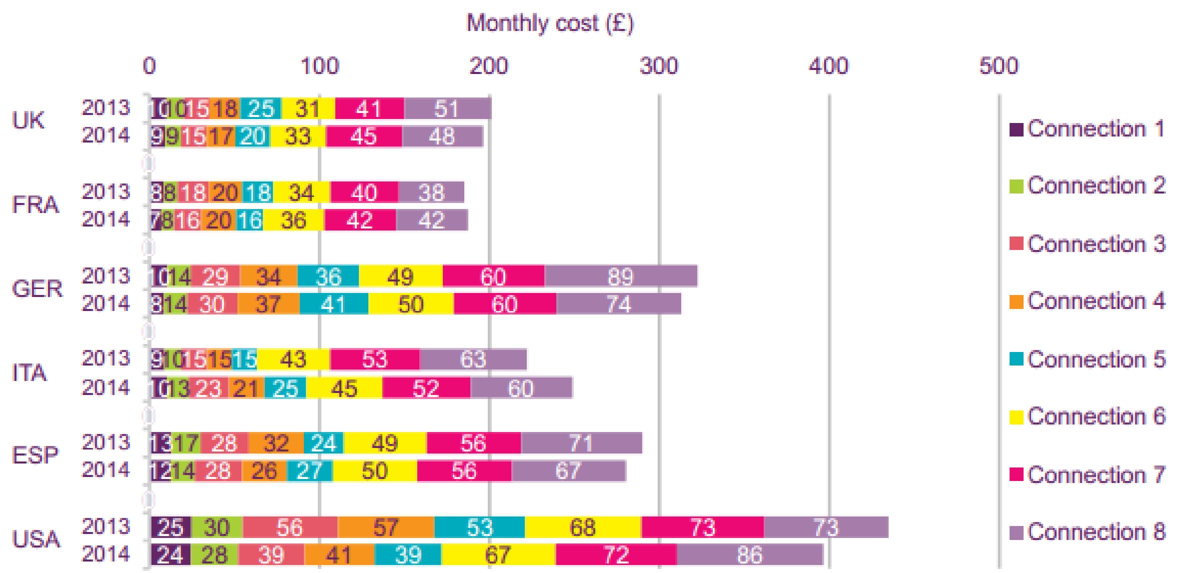
10.71 In relation to customer service, Ofcom research indicates that 91% of end users are either fairly satisfied or very satisfied with their mobile communications services.[290] Levels of satisfaction in the UK about the overall service, price, ability to access the network, and reliability and speed of internet connection compare favourably to other large European countries (namely France, Germany, Italy and Spain).[291]

10.72 The parties submitted that the UK market is more competitive than other countries, and supported this with evidence showing that both prices (see Figure 10.1) and EBITDA margins (see Figure 10.2) are lower in the UK than in many other EU countries.

10.73 They submitted that these low prices and revenues were the result of vibrant retail competition, which did not in any way rely on BT's presence.

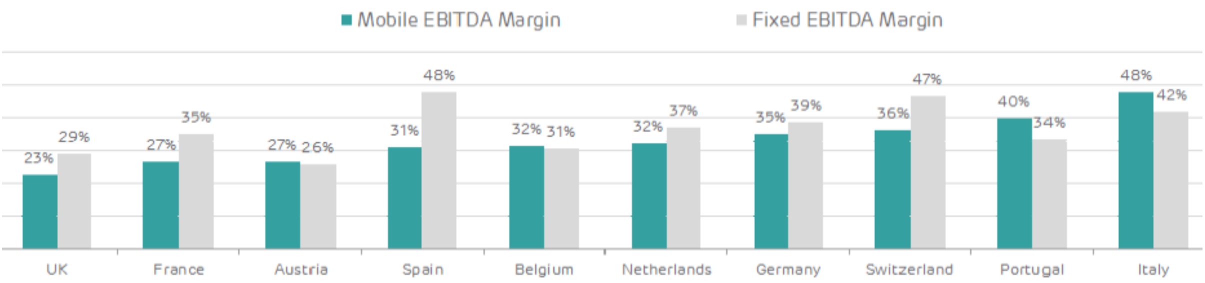
[289] Ofcom CMR 2015, Figure 4.46.
[290] Ofcom SRDC discussion document (2015), Figure 2.
[291] See Ofcom (2014), *International Communications Market Report*, p293, Figure 6.65.

Figure 10.1: Comparative stand-alone weighted average mobile pricing



Source: Ofcom, using data supplied by Teligen.[292]
Note: The eight connections reflect different combinations of handset and data, voice and text message usage, to reflect a range of typical households. This sets out the weighted average of best-value tariff from each of the three largest operators by market share in each country from any of the three largest operators by market share in each country, July 2013 and July 2014; PPP adjusted.

Figure 10.2: EBITDA margin comparison across European markets in 2013



Source: Credit Suisse.[293]

Our provisional view on the nature of pre-merger competition

10.74 Based on the evidence set out above, our provisional view is that the retail mobile market is currently competitive. In this respect, we noted that:

(a) each of the four MNOs has a substantial market share, including H3G which has been increasing its share. Some additional constraint is also provided by MVNOs. [✄] .

(b) the operators compete on a range of parameters, including price and network quality;

[292] Ofcom (2014), *International Communications Market Report*, Figure 2.5.
[293] Credit Suisse, *European Telecoms Factsheet, Q1 2014*.

(c) customers appear engaged, with levels of switching between suppliers that compare favourably with some other sectors on a ‘like for like’ basis (energy and, in particular, banking); and

(d) prices and profits are lower in the UK than elsewhere in Europe.

11. Retail mobile competitive assessment: unilateral effects arising from loss of existing and potential competition

11.1 Having examined the pre-merger competition in the retail mobile services market and provisionally found the market to be currently competitive, this section assesses how competition would differ over time in the counterfactual and the effect arising from the loss of existing and potential competition as a result of the removal of BT from the market.

11.2 BT and EE overlap horizontally in the supply of retail mobile services. EE is active as an MNO selling to businesses and consumers. BT has been present as an MVNO in the business segment since 2001 and entered consumer mobile in March 2015 with plans to grow. Moreover, it purchased high-powered licensed spectrum in 2013, which is unique amongst MVNOs.

11.3 The concern under this theory of harm is that the merger would remove the constraint on mobile operators (including EE) that BT would have exercised in the counterfactual. The loss of BT as a competitive constraint could allow the merged entity to degrade its service to businesses and consumers, for example by raising prices or reducing quality or innovation (or both) relative to the counterfactual, because the merger could reduce the number of customers that would switch away from them as a result of such measures.

Parties' views

11.4 The parties submitted that there was a limited current and prospective overlap between BT and EE in retail mobile, and that post-merger there would remain effective competitive constraints, such that there was no realistic prospect of an SLC. BT submitted that it had ambitions to gain a modest market share in retail mobile (of around [✄]% by 2019/20), [✄], while evidence of low prices and profits in the market today, before any growth of BT's mobile presence, showed that the market was competitive and would remain so in the absence of BT.

Third parties' views

11.5 Virgin Media submitted that the merger would remove competition from BT in retail mobile both as an independent MVNO and, in the medium term, as an MNO utilising its spectrum (and therefore also as a potential supplier of wholesale MVNO services in the future).[294] It told us that the proposed merger

[294] Virgin Media initial submission paragraph 6.8.

would remove BT as an independent and powerful new entrant into the UK retail mobile market with access to spectrum.[295]

11.6 Vodafone submitted that the merger would result in an SLC in the retail mobile market for a number of reasons, including because of the combination of spectrum holdings which would lead to a hoarding of some or all of BT's spectrum, compared to BT using its full spectrum capacity to provide a competing retail offering in the counterfactual.

11.7 Sky submitted that the merger would lead to a loss of current and potential competition between BT and EE in retail mobile, and it would remove potentially significant competition (for example in terms of the technical innovations that would have been brought to consumers) between BT and EE in the provision of hybrid network mobility solutions.[296] Sky also submitted that BT's incentives to invest in innovation would be dulled by the merger, and that the efficiencies from the merger that had been claimed by the parties would be unlikely to materialise or to benefit consumers.[297]

11.8 In relation to the question of whether an operator of relatively small scale would exert an important competitive constraint, Ofcom submitted that:

> To put this into context, H3G's share of subscribers was 7% in 2010, having launched in 2003. Even with a relatively low market share, H3G was seen as a disruptive competitive force. For example, it was first to launch 'all-you-can-eat' tariffs in the UK in 2010. As other stakeholders have highlighted, BT's proposed 'inside-out' network could have provided innovative and potentially quite disruptive services to the market.[298]

11.9 However, Ofcom also submitted that 'MNOs rely heavily on high street distribution to generate sales of both prepaid and postpaid mobile services. BT has no significant retail presence and it can take several years to establish a significant presence in a retail environment where high street and shopping centre landlords can be resistant to having too many mobile retail stores in close proximity.'[299]

[295] Virgin Media initial submission, paragraph 6.1.
[296] That is, services that rely on both fixed and mobile inputs
[297] Sky initial submission, section 9.3.
[298] Ofcom's phase 2 submission to the CMA, paragraph 3.20.
[299] ibid, paragraph 3.21.

11.10 In addition, we received several submissions from third parties arguing that the strengthening of the merged entity would lead to harm to retail mobile competition. These concerns are considered under other theories of harm.[300]

Our assessment

11.11 As set out in Chapter 9, our approach to horizontal theories of harm is to consider how important a competitor one of the merging parties was to the other, or was likely to become in the foreseeable future, relative to other competitive constraints in the market; and whether the removal of that constraint, given the other constraints in the market, is expected to result in a substantial lessening of competition and thus worse outcomes.[301]

11.12 We described earlier the competitive nature of the current retail mobile market (as set out in the last chapter). The remainder of this section considers:

(a) BT's historical presence in retail mobile, and forecasts of its future presence in the counterfactual;

(b) an assessment of possible strengths that could help BT's success, including whether similar strengths are available to other MVNOs; and

(c) whether our conclusions on the importance of BT in the counterfactual are affected by possible changes in the strength of MNOs in the counterfactual.

11.13 Our assessment of this theory of harm is focused on the loss of the constraint from BT in the retail mobile services market. Given our provisional conclusion (see paragraph 11.81), we have not needed to consider whether the merger may give rise to efficiencies, nor whether EE may have incentives to hoard spectrum relative to a stand-alone BT (or indeed relative to any other theoretical situation in which the spectrum were fully deployed).[302]

BT's historical, current and forecast presence in retail mobile

Historical presence

11.14 BT has provided business mobile services under the BT brand name since 2001. It has made several previous attempts to enter the consumer mobile

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300 For example in Chapter 12.
301 *Merger Assessment Guidelines*, Section 5.4.
302 As this is not the relevant counterfactual.

market, including through BT Fusion in 2005 and BT Broadband Anywhere 2008, but these attempts were not successful. [✂].

Early results of BT Mobile launch

11.15 BT launched its consumer mobile service in March 2015. It currently only offers post-pay contracts and does not have a pre-pay offer. Early indications suggest that BT is acquiring up to 3% of gross additions (ie total customers won across all operators) in the consumer segment (as well as a similar proportion of the business segment), and up to [✂]% of gross additions in the subsegment of consumer post-pay contracts.[303]

11.16 BT's initial gains in consumer mobile were noted by several third parties.[304] For example, Virgin Media told us that BT had reported that it had signed up 50,000 customers in the six weeks since the launch of the service,[305,306] which it said indicated that BT therefore already represented a new and significant competitive force in the mobile market.[307]

11.17 We requested data on the number and source of customers that BT has been gaining in recent months. [✂]

11.18 We received differing views from third parties about whether BT's consumer launch was more or less aggressive than they had anticipated.[308] Some submitted that the anticipated merger had softened BT's approach, but others took a different view.[309]

11.19 We asked BT if it had made any changes to its retail plans because of its anticipated merger. It told us [✂].[310]

Parties' projections for BT Mobile

11.20 We then looked at the projected market share of consumer and business mobile for BT by parties.

11.21 BT provided us with its forecasts of its consumer and business customers, and associated market shares, which it made in December 2014.

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303 See Appendix F, Table 6 for more details.
304 For example, Ofcom initial submission.
305 BT Press Releases.
306 We note that BT subsequently published that it had gained 100,000 customers in the first three months (see BT, Financial results).
307 See www.techweekeurope.co.uk and www.telegraph.co.uk.
308 For instance [✂] See: TalkTalk hearing summary, paragraphs 36-39.
309 See Appendix F for more details.
310 See Appendix F for more details.

Table 11.1: BT forecast market share for retail mobile based on number and share of subscribers, as at December 2014

[✂]

Source: [✂].

11.22 The forecasts suggest that BT expected to achieve, within five years, a share of supply in the overall market of [✂] in the consumer and business segments respectively.

11.23 BT has been in the UK business market since 2001 and has a current share of supply of [✂].

11.24 The parties submitted that BT's forecast market shares in later years are increasingly uncertain, and that in business mobile they [✂].[311]

11.25 [✂]

11.26 [✂]

EE's perception of the threat from BT

11.27 EE's internal documents suggest that [✂]. In relation to BT in particular, [✂].

Third parties' perceptions of the threat from BT

11.28 Several third parties provided us with analysts' reports commenting on the BT consumer launch compared with previous launches. For example, [✂]

11.29 We also requested internal documents from the MNOs to help us understand whether and how they had perceived BT (pre-merger) as a threat.

11.30 H3G submitted [✂].

11.31 Telefónica provided a number of internal documents relating to its assessment of, and response to, the threat from BT. These noted that [✂].

11.32 [✂].

11.33 On the other hand, although Vodafone submitted that it had no reason to think that BT's forecasts are unreasonable,[312] [✂].[313]

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[311] [✂]
[312] Vodafone hearing summary, paragraph 22.
[313] See Appendix F.

Our provisional view on BT's presence in retail mobile

11.34 The evidence we have seen on existing competition, and on the expectations of both BT and its rivals regarding BT's future growth in the retail mobile market, suggest that BT may become a constraint on the four MNOs[314] (and the MVNOs) in this market, albeit not a strong one, given its forecast market shares [✄]. However, we also note that any such future growth would be gained in the context of a market which appears to have been competitive prior to the entry of BT into consumer mobile (as well as in respect of its hoped-for growth in business mobile).

11.35 We then considered whether BT's possible future constraint may be a unique or important one in the context of how the retail mobile market may develop in the counterfactual. Without that, we would be unlikely to find an SLC arising from the removal of BT from the retail mobile market.

BT's possible strengths, compared to other operators

- *Parties' views*

11.36 The parties submitted that BT would not have significant competitive advantages relative to other MVNO entrants, and that this view was supported by, for example, the fact that it had been active in the business segment for retail mobile since 2001 and, to date, had only attained a limited position in the market. [✄].[315]

- *Third parties' views*

11.37 Virgin Media told us that BT's purchase of 2.6 GHz spectrum for £186 million in 2013, and its new MVNO agreement with EE in 2014 anticipated BT's re-entry into the UK mobile service markets on a scale and with a level of commitment which had not been evident in the previous ten years.[316]

11.38 Vodafone told us that [✄].

11.39 Other third parties submitted comments on a number of specific strengths from which they submitted BT would benefit:

(a) A fast 4G service from EE.

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[314] Or three MNOs should H3G's acquisition of O2 go ahead.
[315] For more details of BT's previous launches into the consumer and business mobile segments, see Appendix F.
[316] Virgin Media's initial submission, section 6, paragraph 6.2.

(b) Plans to develop a small cell network to offload traffic and reduce its wholesale costs, which BT would be in a good position to do because of its spectrum holding and many available sites. [✂]

(c) An aggressive, well-funded approach.

(d) Cross-selling from fixed into mobile.

11.40 We now set out our assessment of the potential strengths listed above and how they may affect competition.

- *Fast 4G service from EE*

11.41 A number of operators submitted that BT would, in the counterfactual, have benefited from its wholesale arrangement with EE, including from EE's fast 4G service. A number of respondents also submitted that EE had the best network with the fastest speeds, [✂].

11.42 We note that [✂]. [✂], [✂].[317] [✂]. While (as set out in Appendix G) Telefónica submitted that it [✂]. In the counterfactual, it would also have been open to Sky and TalkTalk to switch MNO host and seek to contract with EE ([✂]).[318]

11.43 Our provisional view is therefore that while BT may have benefited from its use of EE's network, this would not in the counterfactual have been a unique or enduring differentiator relative to other MVNOs.

- *Wholesale costs and small cells offload*

11.44 The competitive constraint provided by MVNOs can be limited by the fact that relative to MNOs, they face higher variable costs, and so a higher cost of serving each additional customer.[319] As an MVNO, BT would face this constraint. However, BT's acquisition of 2.6 GHz spectrum distinguishes it from other MVNOs and potential operators.

11.45 BT aspired, over time, to use this spectrum to offload increasing proportions of its customers' traffic, using its own inside-out network of picocells and femtocells.[320] The more data that BT could offload in this way, the lower its variable costs would be per customer and per MB of data. This could suggest

[317] Parties initial submission, paragraph 4.37-4.40.
[318] See Section 14 on wholesale mobile for more discussion.
[319] Case M.7018 Telefonica Deutschland/E-Plus, recital 568.
[320] Small base stations deployed in businesses and in the broadband routers of BT superfast broadband customers.

in turn, that BT's sensitivity to wholesale prices (and quality) may reduce which would strengthen it as a retail competitor.

11.46 We therefore looked at the likelihood of this strategy being successful, and whether this was a strategy that would only be open to BT or could be adopted by competitors.

11.47 BT provided us with information on its plans for the launch of its small cell network, [✂]. Third parties and internal documents [✂] also confirmed that BT's plans presented significant technical challenges and that it may be likely to be subject to delays, although some third parties also submitted that, ultimately, it was likely to have been successful.

11.48 Evidence submitted by BT, including internal documents, suggested that BT hoped, through its femtocell strategy over the next few years, to achieve:

(a) [✂]

(b) [✂]

(c) [✂]

11.49 An analysis of BT's costs compared with those of an MNO suggests that BT may be able to reduce its cost disadvantage compared to MNOs (as represented by [✂]), through small cells offload, [✂].[321]

11.50 We also looked at whether other MVNOs were following, or could follow, a similar strategy.

11.51 The parties submitted that opportunities were available to other MVNOs to deploy strategies similar to that of BT, by *(a)* purchasing licensed spectrum; *(b)* using lower power shared use spectrum; or *(c)* boosting offload through other means. The parties submitted that technology was improving to facilitate greater Wi-Fi offload.

11.52 [✂]

11.53 We received third party submissions that confirmed the parties' submission that Wi-Fi technology was improving and was likely to facilitate increased offload to Wi-Fi. However, these submissions contained mixed views on the extent of offload this could provide, and how well it could replicate the benefits of a femtocell strategy using licensed spectrum. For example, Virgin Media told us that small cells for indoor use didn't currently justify the investment,

[321] For more detail on the calculations, see Appendix F.

since most customers already have Wi-Fi, and VoWiFi would be more cost effective. Sky submitted that use of concurrent access (Wi-Fi) spectrum provides worse service than licensed spectrum (due both to the absence of quality of service standards applying to its use, and congestion caused by other users).

11.54 Third parties told us that when pursuing a small cell strategy, it was important to have access to suitable (powered) sites and to supporting backhaul, and that BT was in a uniquely strong position in this regard, through its ownership of exchanges, cabinets, poles, and Wi-Fi network, as well as its fixed customers' routers.[322] However, Ofcom submitted[323] that these potential sites mostly involved Openreach's assets, and would be subject to the Equivalence of Inputs requirement, so that other operators were therefore able to obtain access to these assets.

11.55 On the basis of the evidence we have seen and for the reasons discussed in Chapter 14, our provisional view is that access to appropriate sites is not a substantial barrier to the deployment of small cells by other operators.

11.56 We are therefore of the provisional view that [✂]. Even if BT's strategy were to be successful, it would still remain [✂] disadvantaged in cost terms relative to MNOs. BT would have a cost advantage relative to MVNOs not pursuing an offload strategy, but we note that there are opportunities for MVNOs to follow similar strategies to BT.

- *Well-funded approach*

11.57 Some third parties[324] suggested to us that BT benefited from the financial resources available to it, and its willingness to invest in order to make its mobile business successful (for example through purchase of spectrum).

11.58 BT's willingness to invest heavily in mobile is shown by the investments it has made to date, including its recent bid for EE. However, we note the parties' argument that:

(a) [✂]

(b) [✂]

11.59 We also note that other operators have made or are also making large investments in their UK businesses – for example Vodafone's investment in

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[322] See Chapter 14 (wholesale mobile).
[323] Ofcom initial submission.
[324] See Appendix F.

Cable & Wireless, Virgin Media's 'Project Lightning' to expand its broadband coverage, and Sky's successful entry into broadband and planned entry into mobile.

11.60 In light of the above evidence, our provisional view is that we do not consider the ability and willingness to invest in the UK telecoms market to be unique to BT.

- *Cross-selling*

11.61 One potential source of strength for BT in the retail mobile services market is that it has a strong presence in fixed services and may be able to cross-sell or bundle mobile services with fixed services to a greater extent than other MVNOs.

11.62 As set out in Appendix H and Appendix I, operators are forecasting substantial growth in the proportion of consumers that buy their fixed and mobile services from the same operators, from around 3% today to perhaps 40% of households or more in 2019 (though the latter is a much smaller figure of around 15% when expressed as a proportion of mobile subscriptions).

11.63 TalkTalk, Sky, and BT forecast that [✄] alongside Virgin Media ([✄]), and Vodafone (which has recently entered consumer broadband). However, the evidence is less clear on the extent to which this will be driven by the offer of fixed services along with mobile being more attractive than stand-alone products, as distinct from these operators providing attractive stand-alone mobile and fixed offers in their own right.

11.64 We also received evidence that there is growing demand from businesses for combined fixed and mobile offerings, and that this may in part be driven by fixed-mobile bundling facilitating new or improved services.

11.65 In residential broadband services, Sky, Virgin, and TalkTalk all have strong shares in fixed services, suggesting that BT is not unique in its ability to cross-sell or bundle mobile with fixed services. In addition, we received evidence that Vodafone is in the process of expanding its fixed offer in consumer fixed services and [✄].

11.66 We provisionally considered therefore, that even if bundling became more important in the consumer sector,[325] this would not provide BT with a unique competitive advantage in the consumer retail mobile sector.

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[325] See Appendix H for more detailed discussion of whether fixed-mobile bundling is likely to become important in the UK.

11.67 However, in the business segment BT has a [✄] larger share of broadband than the main MVNO competitors, as shown in Table 11.2. Should fixed-mobile bundling or cross-selling become important in the UK retail mobile market, BT is likely to be in a stronger relative position in this respect in the business segment than in the consumer segment.

11.68 For instance, Vodafone submitted that [✄].

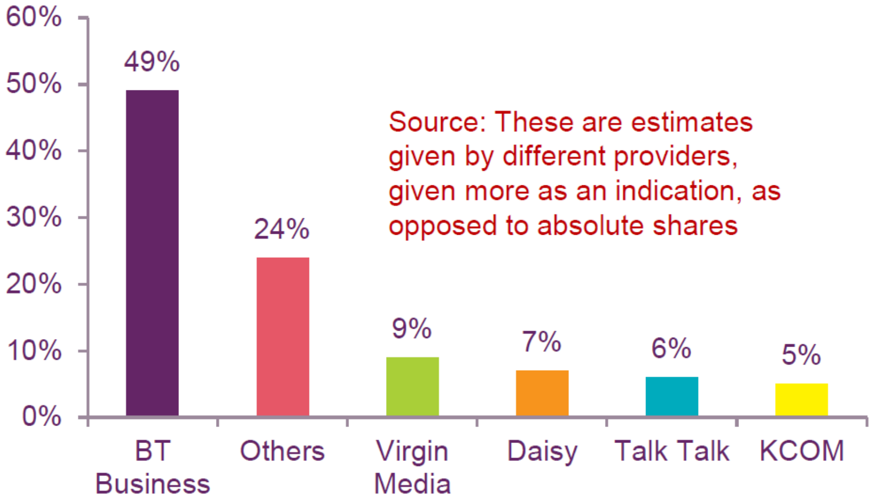
Table 11.2: Broadband market shares of supply

		%
	Residential and SME (2014)	*Business (Dec 2014)*
BT	[✄]	[✄]
TalkTalk	[✄]	[✄]
Virgin Media	[✄]	[✄]
Sky	[✄]	[✄]
EE	[✄]	[✄]
Others	[✄]	[✄]
Total	[✄]	[✄]

[✄]

11.69 BT's stronger relative position may also be the case for SME mobile, should fixed-mobile bundles become important in that subsegment. TalkTalk told us that it understood both BT and EE were likely to be scale providers in this subsegment and that combining BT and EE could provide unilateral market power to the merged firm in this area, particularly when combined with BT's high market share (around 50%) in the supply of fixed line services to SMEs.[326] BT's share in SME broadband is high, as shown in Figure 11.1.

Figure 11.1: SME broadband revenue market share (indicative) 2014



Source: Ofcom (2015), *Broadband services for SMEs: assessment and action plan*.

[326] TalkTalk initial submission, section 2(b).

11.70 However, BT submitted that it faced a wide range of competitors in business mobile. BT internal documents also suggested that it [✂]. In line with this, we note that Virgin Media has plans to expand in the business segment.[327]

11.71 We looked at the ability of the major telecoms suppliers to offer technologically converged services and meet other requirements of businesses. We found that Vodafone, EE and Telefónica are strong competitors in business mobile, and that Virgin Media plans to grow in this area.[328] We also considered that other small providers may be expected to grow for the following reasons:

(a) For businesses, in addition to fixed and mobile connectivity, a range of value-added services are also relevant (such as virtual private networks, collaboration services, contact centre solutions, and cloud services). Smaller providers have a range of strengths in these areas.

(b) In business broadband, (as shown in Table 11.2) [✂] of the market is made up of operators outside the main MVNOs and MNOs. Insofar as fixed-mobile bundling, or convergence, becomes important for businesses, it therefore appears plausible that the importance of smaller mobile providers that also offer fixed services will grow.

11.72 Our provisional view is therefore that the ability of BT to cross-sell to its fixed customer base would not provide BT with a unique strength which other MNOs, MVNOs or other service providers in both the residential and business sectors were unable to replicate by cross-selling in other ways.

Our provisional view on the strength of competitive constraint provided by BT in the counterfactual

11.73 On the basis of the evidence we have seen, our provisional view is that although BT may have been expected to exert a competitive constraint in the counterfactual, this would also have been true of other MVNOs.

11.74 We now consider the constraint exercised by the MNOs.

Likely future constraints from MNOs

11.75 The parties submitted that:

> the retail mobile market was effectively competitive prior to BT's recent entry into the consumer segment and will remain so even if

[327] See Appendix F.
[328] ibid paragraphs 15–17.

BT fails to gain significant market share, or if it continued to operate primarily in the business segment. Any removal of BT as a potential future competitor as a result of the Transaction could not therefore give rise to an SLC in the retail mobile market.

11.76 Conversely, we received submissions from third parties arguing that the other MNOs are weaker than EE and that in the counterfactual, H3G and Telefónica in particular would become, because of their spectrum constraints, weaker competitors than is currently the case.

11.77 BT submitted that it could only benefit from any purported advantage for capacity in the shorter term. BT added, however, that absent the merger it [✂]. BT submitted that by the time it could deploy femtocells to consumers, the MNOs would be able to increase their capacity and keep pace with demand.

11.78 We also considered whether BT's spectrum could have exerted a competitive constraint in the counterfactual through BT selling or wholesaling spectrum capacity to operators [✂] that may face capacity constraints in the medium term (as discussed in more detail in Appendix G). However, operators' responses confirmed that there were substantial barriers to this.[329] Our provisional view is that BT was unlikely to become a supplier of spectrum capacity to MNOs, absent the merger.

11.79 Moreover, as set out in Appendix G, the nature of any capacity constraints appears to be time limited. Additionally, there are a range of non-spectrum investments that operators can make to improve their networks over time.

11.80 From the evidence provided to us, our provisional view is that the capacity challenges potentially facing some MNOs [✂] are not insurmountable, because any spectrum constraints are limited over time, as more spectrum becomes available, and there are a range of other non-spectrum investments operators can make. In combination with the [✂] uncertainty attached to BT's forecast growth, this leads us to conclude that changes in the strength of MNOs in the counterfactual would not lead BT to become a unique or an important competitive constraint such that its loss would amount to an SLC.

Our provisional conclusion on the loss of competition in retail mobile

11.81 We provisionally conclude that the merger is not expected to result in an SLC in any market or markets in the UK as a result of the loss of current and potential constraint from BT in the retail mobile services market. This

[329] [✂] See Appendix F – Retail Mobile for more detail.

provisional conclusion was based on the following provisional findings in particular:

(a) Pre-merger, the retail mobile market is competitive, with close competition amongst the four MNOs and with limited additional competition from the MVNOs. While [✂] submitted [✂] would face capacity constraints in the medium term, we considered that should these occur they would not be enduring, and that MNOs (alongside MVNOs other than BT) will continue to be able to compete effectively in the supply of retail mobile services, and act as a competitive constraint on EE.

(b) We have provisionally found that BT is not currently not a strong competitor in retail mobile. For example, it has only just launched its consumer offering and its share of supply even in the business segment is small. BT's forecast market shares in consumer and business mobile are modest; they are also uncertain [✂].

(c) BT's femtocell strategy is subject to uncertainty [✂]. Once in place, while it would have allowed BT to have lower costs than MVNOs that did not pursue a similar offload strategy, it would have remained at [✂] cost disadvantage relative to MNOs. Alternative offload strategies are, to an extent, available to other MVNOs that also have a history of making substantial investments in UK telecoms.

(d) In respect of cross-selling from fixed into mobile, we considered that Sky, TalkTalk and Virgin Media, with similar market shares to BT in consumer broadband, would equally be able to benefit from any strength that this conferred. We noted that BT's position in fixed services for businesses is stronger than for consumers, but on balance considered that other operators would continue to provide strong competition in business mobile after the merger.

12. Retail mobile: dynamic loss of competition

Overview of theory of harm

12.1 The concern under this theory of harm is that the merger may strengthen EE, and that this may subsequently lead to a weakening of competitors to EE and BT in the retail mobile services market such that they will impose less competitive constraint than they would have done in the counterfactual, and that this will ultimately harm competition. For this theory of harm to weaken competitors, in our provisional view, we would have to believe that improvements in EE's offer as a result of the merger would permanently weaken competitors to an extent that the merged entity could exploit consumers, for example, by reducing quality or increasing prices relative to the counterfactual.

12.2 This differs from the concern we discussed in the previous chapter in that it does not focus on the loss of the constraint from BT on EE, but considers the greater capabilities that EE will have post-merger, and the effect that this could have on competition.

Parties' views

12.3 The parties told us that they believed it was not credible that competitors could be permanently weakened by the merger, nor that the merged entity would have potential advantages enabling it to exploit consumers. In their opinion to permanently weaken competitors is a very high standard and evidence had not been advanced by third parties to suggest that they would, in fact, be weakened as a result of the merger. In the parties' view, the complementary nature of the merger created a unique opportunity to stimulate competition in the future including in areas where the UK was lagging behind such as in convergent services.[330]

12.4 The parties also told us that the ability of the merged entity to innovate in the retail mobile market may be increased as a result of the merger, whilst the competitive nature of the retail mobile market meant that any efficiencies generated (including through any innovation, as well as through cross-selling and the elimination of double marginalisation) would be passed through to final customers.[331]

[330] BT response to issues statement, paragraph 5.17.
[331] ibid, paragraph 5.18.

Third parties' views

12.5 We received a number of submissions from third parties that highlighted a range of new strengths from which they alleged the merged entity would benefit, and, in some cases they also suggested mechanisms through which these benefits to the merged entity could lead to harm to competition, by weakening competitors. A number of third parties submitted that the merger would result in EE having greater capabilities post-merger that competing operators would not be able to match.

12.6 Details of the third party submissions will therefore be discussed below in the relevant sections of the competitive assessment.

Our assessment

12.7 We considered market definition in Chapter 10 and our provisional conclusion was that there is a national market for the supply of retail mobile telecommunication services. Our assessment is therefore conducted within that framework.

12.8 As a starting point we note that any improvements in EE's offer might be benefits of the merger if they are merger specific and their benefits are passed on to consumers.

12.9 However, it could potentially be submitted that competition would be harmed if these benefits to customers from improved EE services or lower prices led to harm to other operators, leading to those operators exerting a significantly weaker constraint than in the counterfactual. This might ultimately allow the merged entity to worsen its service or prices relative to EE in the counterfactual. It would take some time for any increase in the strength of the merged entity to harm competition under this theory of harm because it would take time for the merged entity's competitors, which are large and well-resourced businesses, to be harmed to such an extent that the merged entity would be able to increase its prices or worsen its service. In principle, therefore, this theory of harm would only arise in the medium to long term.

12.10 An important point to emphasise is that, in our provisional view, an SLC could only arise under this theory of harm if the merged entity's strength caused other operators to become weaker relative to their own strength in the counterfactual. We do not consider that the merged entity would have the ability to raise prices or degrade quality relative to the counterfactual, unless competitors were weakened relative to the counterfactual. Moreover, our merger assessment is focused on harm to competition rather than competitors that fail to invest or innovate, or keep up with rivals in other ways. Therefore, it is not enough for competitors to be weaker (in the sense of being a less-close competitor) relative to the merged entity, or relative to a scenario in which operators are strengthened, for example, by receiving additional spectrum.[332]

12.11 To investigate this theory of harm, we have therefore considered whether there are any merger-specific strengths from which the merged entity would benefit; and whether there are mechanisms through which these strengths may lead to harm to competition by permanently weakening competitors.

12.12 To this end we investigated whether:

- access to backhaul from MBNL (the joint venture between EE and H3G) on improved terms may harm competition by marginalising CTIL (the joint venture between Vodafone and Telefónica) [✂];
- the merged entity may have an increased incentive to bid strategically in future spectrum auctions in order to foreclose its competitors by leaving them capacity constrained;
- any increase in the extent to which the merged entity sells mobile alongside fixed services may harm competition through a reduction in the use of indirect sales channels; and
- a combination of BT's and EE's assets and abilities may harm competition by attracting customers away from its competitors in a way that weakens those competitors.

12.13 In the following section, we look at each of the above, assessing the extent of the increase in each strength due to the merger, and whether there is a mechanism by which it can weaken competitors.

Harm through marginalisation of CTIL

Proposed harm

12.14 Under this proposed harm, we considered whether the merger would strengthen MBNL (the EE and H3G network joint venture) relative to CTIL (the joint venture between Vodafone and Telefónica) as a result of improved terms of access to backhaul from BT and whether this could harm Vodafone and Telefónica's competitive constraint as compared to the counterfactual.

[332] Since for these purposes the proposed counterfactual is the competitive situation absent the merger – see *Merger Assessment Guidelines*, Section 4.3.

Parties' views

12.15 The parties told us that the merged entity would not have access to backhaul on terms that were substantially improved as compared to EE in the counterfactual.[333]

Third parties' views

12.16 [✂]

Our assessment

12.17 We considered the merged entity's incentive to degrade the backhaul service to the rival MNOs, including Vodafone and Telefónica which are hosted on CTIL, in Chapter 15. As discussed later in this report, our provisional conclusion is that the merged entity is unlikely to have the ability and incentive to reduce the quality of the managed backhaul products sold to Vodafone and Telefónica under the current contracts between these MNOs and BT.

12.18 [✂]

12.19 [✂]

12.20 [✂]

12.21 [✂]

12.22 [✂]

12.23 [✂]

12.24 [✂]

Our provisional view on harm through marginalisation of CTIL

12.25 On the basis of the evidence we have seen, our provisional view is therefore that given the lack of ability on the part of the merged entity to degrade the backhaul service to CTIL, [✂], the proposed harm is not expected to result in an SLC as a result of this potential harm.

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[333] BT response to issues statement, paragraph 5.12.

Harm through BT/EE bidding strategically in spectrum auctions

Proposed harm

12.26 Under this proposed harm, the merged entity would have an enhanced incentive to bid strategically in future spectrum auctions for lots it may not actively want in order to prevent other operators acquiring the spectrum.

12.27 Strategic bidding would involve the merged entity paying for spectrum over and above its intrinsic value, which would be costly, in hope that those costs would be recouped by denying an opportunity to its rivals to increase spectrum holdings (and therefore frustrating their attempts to increase coverage, capacity or speed).

Third party views

12.28 Telefónica submitted that the merged entity's position would strengthen the parties' incentives to bid strategically in the upcoming Public Sector Spectrum Release (PSSR) auction[334] for lots it may not actively want in order to prevent other operators acquiring them, and to retain spectrum or avoid trading it, even if it is not being used.

Our assessment

12.29 In assessing this theory of harm we used the framework set out by Ofcom as part of its November 2014 consultation on the upcoming PSSR auction. Ofcom distinguishes between two sources of value in bidding for spectrum:

- **Intrinsic value**: The present value of additional profits a bidder expects to earn when holding the spectrum compared to not holding it, in the absence of any strategic considerations to obtain spectrum to reduce competition in mobile services from the existing level.
- **Strategic investment value**: The present value of additional expected profits earned from bids aimed at affecting the future structure of competition in mobile services by depriving one or more competitors of spectrum.

12.30 Ofcom also suggested how harm to consumers could be caused by strategic bidding:

[334] Due to take place in early 2016 (see Ofcom submission).

> […] even if a national wholesaler has a higher intrinsic value for some spectrum than other bidder(s), it may fail to acquire the spectrum in the auction if it is the victim of strategic investment by another operator(s). In this situation, we would expect consumers to be made worse off by the spectrum going to the highest bidder in the auction, because competition would be weaker.[335]

12.31 We note that there was no suggestion of strategic behaviour, either by the parties or their rivals, as part of the recent sale of Qualcomm in September this year.[336] That said, the probative value of this evidence in relation to the behaviour of the parties is limited given that the parties knew at the time that we were considering strategic bidding as a possible harm arising from this merger.

12.32 On the basis of existing competition at the time of its consultation (that is, with BT, EE, H3G and O2 all separate), Ofcom did not consider that strategic investment in spectrum was likely in the PSSR award, because:[337]

- It expected those with low existing shares (that is, H3G and O2) to have high intrinsic values for the spectrum, and so willingness to pay for it, which would increase the costs of strategic investment.
- There was a large amount (190 MHz) of spectrum due to be awarded (although only 40 MHz of this was the most immediately useful 2.3 GHz spectrum). A bidder trying to prevent others obtaining any spectrum would need to acquire all of this spectrum, which would tend to push up the price.
- It was unclear that such strategic investment would reduce competition, as this may depend on technical and market conditions that are difficult to predict.
- There was no obvious focal point for the division of spectrum in the auction between the operators with large spectrum shares currently.

12.33 While in general we agree with this reasoning, we considered whether there is anything in particular about the merged entity's incentives that would lead us to arrive at a different conclusion from Ofcom. We identified three ways in

[335] See paragraphs 4.158–4.166 in Ofcom (2012), *Assessment of future mobile competition and award of 800 MHz and 2.6 GHz Statement*.
[336] Vodafone took ownership of the 1,542 MHz–1,772 MHz frequencies and 3UK the 1,472 MHz–1,492 MHz.
[337] See Ofcom (2014), *Public Sector Spectrum Release (PSSR): Award of the 2.3 GHz and 3.4 GHz bands*, paragraph 7.102.

which the merger may influence incentives to bid strategically relative to the counterfactual, namely:

- The addition of BT's spectrum to EE's is likely to mean that EE's intrinsic valuation of spectrum is lower than it otherwise would have been (so that there will be a bigger gap between the operator's intrinsic valuation and the amount it would need to bid to harm rivals). This will tend to increase the cost of strategic bidding.

- If the merger makes the parties stronger than EE alone, as a stronger retail competitor, the merged entity would be more likely than EE to benefit (in terms of switching customers) from any weakening of competitors that was achieved through strategic bidding. This will tend to increase the value of strategic bidding.

- There may be some effect from the merger causing a possible reduction in the number of separate bidders. This will tend, other things being equal, to reduce the prices paid for spectrum.

12.34 It is, therefore, not clear that the merger would increase the prices of spectrum relative to the counterfactual. Nor is it clear that the merger would, more likely than not, cause the merged entity, through its effect on incentives, to engage in strategic bidding and, through such means, successfully harm rivals relative to the counterfactual.

12.35 Finally, we note that Ofcom has experience and powers in relation to discouraging or preventing strategic bidding.[338]

12.36 As part of the aforementioned consultation on the upcoming PSSR auction Ofcom noted that in designing its auction rules, it pays close attention to the possibilities for strategic bidding, and aims to design rules (for example relating to the disclosure of information during the auction) that discourage or prevent it.[339] Ofcom has the power to impose competition measures – such as holdings caps – in the design of its auctions, and possible strategic bidding is one consideration in this.

12.37 Following the announcement of the merger and prospective merger of H3G/O2, Ofcom has subsequently published a statement announcing that it

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[338] See for example Ofcom (2014), *Public Sector Spectrum Release (PSSR): Award of the 2.3 GHz and 3.4 GHz bands.*
[339] ibid.

plans to auction the spectrum in early 2016, with no holdings caps imposed.[340]

Our provisional view

12.38 From the evidence available to us, we do not find that the merged entity is likely to attempt to implement a strategy of strategic bidding. This is because of the likely high cost of such a strategy and the uncertain payoff. In particular, it may be unclear to the parties how successful any strategic investment may be in frustrating rivals, given that rivals could have effective commercial responses to not obtaining spectrum.

12.39 Even if the merged entity perceived that it would be profitable to engage in strategic bidding, our provisional view is that Ofcom has sufficient experience and regulatory power to discourage, monitor and prevent such conduct.

12.40 Accordingly, our provisional view is that this concern would not be expected to result in an SLC.

Reduction in use of indirect sales channels

Proposed harm

12.41 Under this proposed harm, we considered whether the merger may harm competition through a reduction in the use of indirect sales channels.

Third party views

12.42 Dixons Carphone presented evidence to show that an indirect channel provided benefits to the consumer.

12.43 It went on to argue that the merger could harm competition (mainly via its effect on quad play packages) if it harmed indirect retail sales, for example:

(a) ‘Consumers may have less choice and ease of comparison across networks and tariffs if BT/ EE move from a combined direct/indirect channel strategy to a ‘direct’ only channel strategy (i.e. where a network operator will only sell through its own retail outlets, website etc.)’ [341]

(b) If the same quad play offerings were not offered through the indirect channel (putting the indirect channel at a competitive disadvantage),

[340] See http://stakeholders.ofcom.org.uk/consultations/2.3-3.4-ghz-auction-design/statement/
[341] Dixons Carphone submission, section 1.

current and potential indirect customers may need to purchase through the direct channel as this was the only option where they could access all products available. Therefore consumers may not be able to benefit from the associated choice of brands, comparison, price competitiveness and assisted sale services that indirect retailers were able to provide.

Our assessment

12.44 We have not seen evidence to suggest that the merger will significantly change the parties' incentives to use indirect sales channels, which we understand currently account for around half of mobile sales.

12.45 We also note that some of Dixons Carphone's arguments about the complexity of fixed-mobile bundling, which they suggest could be increased by the merger, could actually increase the incentive to use assisted sales methods of the kind offered through indirect channels.

Our provisional view

12.46 Our provisional view is that the merger would not be likely to result in a reduction in the use of indirect sales channels. Accordingly, our provisional view is that this concern would not be expected to result in an SLC.

Harm through the merged entity attracting customers and weakening competitors

Proposed harm

12.47 Under this proposed theory of harm, competition could be weakened as a result of the merged entity being stronger than EE alone. The merged entity could potentially attract a large number of customers away from its competitors and, as a result, its competitors could lose economies of scale and/or experience reduced returns on investment. As a result their offers may become worse than they would have been in the counterfactual.

Third parties' views

12.48 Third parties put to us that a combination of BT's and EE's assets, and in particular their spectrum holdings and BT Wi-Fi hotspots and street furniture, may provide the merged entity with the ability to win a large number of customers away from its competitors by potentially offering larger data bundles, better coverage, faster data services and lower prices).

Our assessment

12.49 Even if the merger resulted in improvements in the merged entity's capabilities along the lines suggested by third parties, we would generally expect its rivals to respond by competing harder. In particular, we consider that there are viable alternatives/opportunities open to the parties' rivals that would allow them to replicate those improvements, or to employ counter-strategies, to a degree which would allow them to remain competitive relative to the merged entity and to arrest customer loss, including:

(a) There are alternatives to BT's Wi-Fi network and BT's street furniture which would be available to the parties' rivals (as discussed in Chapter 16).

(b) In the medium to long term, the parties' rivals have the opportunity to acquire more spectrum in order to maintain competitive data packages and speeds (as discussed in Appendix G), alongside the ability to make alternative investments in improving their networks.

12.50 We also note that many customers do not switch providers frequently which means that any loss of scale, if there was to be one, would be slow, which would allow time for rivals to respond and invest in counter-strategies.

12.51 While we do not believe, on the basis of the evidence above, that the merged entity would attract a sizeable number of customers away from its competitors, we have nonetheless carried out some sensitivity analysis in relation to the circumstances under which customer switching could cause a concern. The results of this exercise are set out in Annex 1 to Appendix F. They show that a plausible scale of customer switching would not cause a significant harm to competition. Accordingly, our provisional view is that this concern would not be expected to result in an SLC.

Our provisional conclusions on dynamic loss of mobile competition

12.52 We have assessed a number of mechanisms by which a strengthening of BT/EE and, by implication, short-term benefits to customers, could lead to long-term harm to competition.

12.53 However, we did not have to consider this trade-off explicitly. This is because none of the mechanisms that we have assessed is likely to result in harm to BT/EE's rivals. In particular, the evidence we have considered showed that:

(a) the merger in itself is unlikely to cause Telefónica to switch away from its network sharing agreement with Vodafone;

(b) it is not clear that the merger is likely to lead to higher prices for spectrum in upcoming auctions;

(c) the merger specific effect of the merger on the use of indirect sales channels by the merged party is unclear, and may in fact be positive; and

(d) the merged entity’s competitors have a range of counter-strategies to respond to any increased strength, which would allow them to compete strongly for customers.

12.54 Our provisional conclusion is therefore that the merger is not expected to result in an SLC as a result of dynamic loss of competition.

13. Wholesale mobile: overview

Introduction

13.1 In this and the following chapter, we discuss the potential impact of the merger in relation to the supply of wholesale mobile services. As explained in Chapters 10 and 11, companies active in the supply of retail mobile services are either MNOs that operate their own mobile network or MVNOs that require wholesale access to an MNO's mobile network.

13.2 The merger will result in a wholesale supplier of mobile services (EE) merging with a customer of those services (BT).

13.3 Pre-merger, BT was active as an MVNO supplying retail mobile services. BT was also active as a retail supplier of fixed voice, broadband, and pay TV services (which we refer to as 'fixed' services) and competed at the retail level with other MVNOs that also offered fixed services (which we refer to as 'fixed-MVNOs').

13.4 We received concerns from third parties that, post-merger, the merged entity would refuse to supply wholesale mobile services (and/or offer worse terms) to fixed-MVNOs. We received concerns that this could negatively affect downstream retail competition, including in relation to the sale by these fixed-MVNOs of mobile services either on a stand-alone basis or alongside fixed services (which we refer to as 'fixed-mobile bundles').

13.5 As discussed in Chapter 11, we considered that there was currently a healthy degree of competition in the supply of retail mobile services, arising from the presence of the four MNOs, and that MVNOs exercise a limited constraint in that market. We noted that, if fixed-mobile bundles become more prevalent, the nature of competition between MNOs and fixed-MVNOs may change. We considered that in such a scenario, the incentives of the merged entity to supply fixed-MVNOs could change.

13.6 We therefore assessed whether the merger would lead the merged entity would have both the ability and incentive to harm fixed-MVNOs,[342] by refusing to supply, or offer worse terms for, its wholesale mobile services.

[342] We considered that a merger effect would be unlikely to arise in relation to those MVNOs which do not offer fixed services, since the merged entity would face broadly the same incentives as EE in deciding whether or not to supply those MVNOs with wholesale mobile services.

13.7 We considered that, if fixed-mobile bundles did not become prevalent, it would be much less clear that the merger would change EE's incentives to supply fixed-MVNOs, relative to the counterfactual.

13.8 In the remainder of this chapter we:

- explain our view of the relevant product and geographic market definition, with a focus on the supply of wholesale mobile services and retail fixed-mobile bundles; and

- provide an overview of the nature of competition in the supply of wholesale mobile services.

13.9 In Chapter 14 we outline our approach to assessing the different potential foreclosure strategies we identified in relation to wholesale mobile services and explain our provisional findings in each case.

Market definition

13.10 As explained above, we considered market definition in relation to:

- the (upstream) supply of wholesale mobile services; and

- the (downstream) supply of retail fixed-mobile bundles.

Wholesale mobile services

13.11 We investigated the extent to which different aspects of wholesale mobile services to MVNOs could be aggregated on the basis of demand-side and/or supply-side factors. In particular we considered the extent to which the different types of MVNOs could represent distinct customer segments and the extent to which there may be different markets for different technologies (for example 2G, 3G, 4G and other).

13.12 The Commission, in past merger cases, has consistently defined a wholesale market for network access and call origination on public mobile telephone networks.[343] The Commission considered wholesale network access and call origination were the key elements required by MVNOs (and service providers) to provide retail mobile communication services and as

[343] See, for example: Case M.7018 *Telefónica Deutschland/E-Plus* (2014), paragraphs 77–79. See also Case M.6992 *Hutchison 3G UK/Telefónica Ireland* (2014), paragraphs 155–156; Case M.7231 *Vodafone/Ono* (2014); Case M.7109 *Deutsche Telekom/GTS* (2014); Case M.6990 *Vodafone/Kabel Deutschland* (2013); Case M.6497 *Hutchison 3G Austria/Orange Austria* (2014), paragraphs 61–63; Case M.5650 *T-Mobile/Orange*, paragraphs 27–30 (2010); and Case M.4947 *Vodafone/Tele2 Spain*, paragraph 15 (2007).

such constituted a single market.[344] The Commission also concluded in previous cases that the market is national in scope.[345,346]

13.13 The parties submitted that there is a distinct product market for wholesale network access and call origination services and the relevant geographic market is national in scope.[347] We received no third party submissions arguing against this market definition.[348]

13.14 Some MVNOs argued that certain MNOs are less willing to provide 4G than 3G services,[349] and that the conditions of competition therefore differ across technologies. We note that all MNOs are able to supply 4G and 3G services.

13.15 Our competitive assessment has largely focused on the supply of 4G (and possible future technologies) at the wholesale level, because these are the technologies about which we received the strongest concerns and because, as submitted by BT, the market is increasingly transitioning to 4G being the dominant technology. Given the conclusion of our competitive assessment, it has not been necessary to conclude on whether there exist separate markets for the wholesale supply of specific mobile technologies.

13.16 We therefore provisionally concluded that the relevant product market was no broader than the wholesale market for network access and call origination on public mobile telephone networks and the relevant geographic market was the UK as a whole.

Fixed-mobile bundles

13.17 We investigated the extent to which the supply of fixed-mobile bundles would be likely to form a single product market.

13.18 We considered the term 'fixed-mobile bundles' to encompass scenarios where a customer purchased mobile services alongside fixed services from

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344 See, for example: *Telefónica Deutschland/E-Plus* (published 2 July 2014), paragraph 77.
345 See, for example: *Telefónica Deutschland/E-Plus* (published 2 July 2014), paragraph 83.
346 Ofcom last undertook a review of the market for wholesale services provided over mobile public telephone networks in 2003. See Oftel (2003), *Review of competition: mobile access and call origination*, paragraph 2.2 and Annex B. The market was removed from the Commission's Recommendation on relevant markets in 2007.
347 BT/EE initial submission (30 June 2015), paragraphs 2.1–2.3
348 We received a submission [✂].This argument follows the Commission's understanding of the market. It has previously found that 'Branded Resellers' are not active on the demand side of the wholesale market for access and call origination as they act as distribution or marketing agents of MNOs. As such, they do not purchase wholesale services with a view to re-selling them. See Case M.7018 *Telefónica Deutschland/E-Plus* (published 2 July 2014), footnote 39. We have not found it necessary to conclude on whether self-supply forms part of the market definition as it does not affect the outcome of our competitive assessment.
349 For example, Gamma initial submission (3 July 2015), [✂].

the same supplier,[350] whether as part of a single contract or separate contracts, including:

- where an existing mobile customer is cross-sold fixed services, or vice versa, with or without a discount; and/or

- where a new customer purchases a bundle of services, with a single contract and/or bill; or

- converged products that provide services (such as combined fixed and mobile data allowances) that can only be offered where the customer purchases fixed and mobile services together.

13.19 In our assessment, we include all of these services in our term 'fixed-mobile bundle'. Not all of these would constitute bundling in the sense used in the economics literature. In practice, the more tightly tied together the elements of a bundle are, the greater the effect a given level of bundling will have on competition. By contrast, if a significant proportion of bundling is just cross-selling without a discount or contractual tie, then projections of the future level of bundling will tend to overstate the competitive importance of bundles. We consider this further in our assessment of incentives.

13.20 To date, fixed-mobile bundles have not been widely adopted in the UK.[351] As set out in Appendix H, under 10% of consumers currently purchase fixed and mobile services from the same provider.[352]

13.21 Providers' forecasts imply that a substantial proportion (perhaps more than 40%) of households may purchase fixed-mobile bundles by 2019, following the entry and/or growth of BT, Sky, and TalkTalk into mobile, and of Vodafone into fixed, alongside the existing fixed-mobile offers of Virgin Media and EE.[353] In relation to business customers, we do not have consistent data but the information shared by operators suggests that under

[350] This term includes any combination of at least one fixed service and a mobile service. Where customers purchase fixed voice, broadband, pay TV and mobile services together, this is known as 'quad-play'
[351] This is in contrast to some other European countries, such as Spain, where the uptake of fixed/mobile bundles is much higher.
[352] For example, in its Communications Market Report 2015, Ofcom found in a survey of 3756 UK adults that 3% of respondents purchase fixed and mobile services from the same supplier, as part of a package or deal. This survey included face-to-face and telephone interviews. In Ofcom's international communications market report 2014 it published data that allows cross-country comparisons but is based on an online survey with a UK sample of 956. This found that 6% of UK respondents subscribe to a package or bundle of two or more communications services including fixed and mobile components.
[353] Forecasts received from BT, EE, Virgin Media, Sky, TalkTalk and Vodafone. For more explanation see Appendix H.

20% of businesses currently buy fixed and mobile services from the same provider.[354]

13.22 However, these figures do not inform the question of whether current and potential future customers would unbundle their purchases in response to a price rise,[355] and we received no direct evidence on this latter point.

13.23 No third party argued that fixed-mobile bundles currently constitute a separate market,[356] in which a SSNIP[357] would not be prevented by switching to stand-alone products.[358] For example, Ofcom found in its 2014 review of the wholesale broadband access market, that at the retail level ‘it seems likely that there is demand for broadband independent from TV and mobile services, and consumers are likely to be willing to unpick these services from a bundle’.[359]

13.24 We considered that in future, demand-side substitution between bundled and bundled offers may be weaker if bundled offers differ substantially from unbundled offers in respect of price or quality, or if there are contractual or other barriers to unbundling. These issues are also discussed within our competitive assessment. In relation to market definition we note that at present:

- price differences between bundled and unbundled offers do not appear to be substantial (although in principle this could suggest that those customers who already buy bundles may have a preference for buying them together, which is not related to price);

- we received little evidence that bundling will facilitate innovative new ‘converged’ products for consumers. We received some evidence that operators anticipate innovation in this regard, for business customers; and

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[354] Please refer to Appendix H.
[355] We do not consider that entry into the supply of fixed-mobile bundles, from either of the constituent markets, is sufficiently quick or easy to amount to supply-side substitution. We also note that the extent of supply-side substitution between stand-alone services and bundled services depends in part on the ease with which fixed operators can gain wholesale access to mobile services - the subject of this theory of harm.
[356] See for example TalkTalk response to issues statement, paragraph 2.2, p1; [✂].
[357] ie a ‘small but significant non-transitory increase in price’.
[358] Though the Post Office referenced ‘the increasing demand for fixed/mobile bundles and development of a separate market for such bundled products’. Post Office’s submission dated 1 October 2015
[359] Ofcom (2014), *Review of the wholesale broadband access markets*, p46, paragraph 3.83. Ofcom also noted that where there is bundling of different services at the retail level, this would create complementarities at the wholesale level rather than substitution. Ultimately, Ofcom did not conclude on whether bundles were substitutable for independent products but noted that it seemed likely that there was demand for broadband independent from TV and mobile services, and consumers were likely to be willing to unpick these services from a bundle.

- contractual links between fixed and mobile offers so far appear to be weak; at present, the drivers and methods of purchase for fixed and mobile services are generally different (eg fixed purchases are often prompted by house moves and bought online, while mobile purchases may be prompted by the desire for a new handset and bought in a retail store).

13.25 Given the weakness of the evidence that bundles will not be constrained by unbundling, we did not therefore define a separate market for fixed-mobile bundles in the UK.[360] However, we considered the possible emergence of such a market as part of our assessment of the merged entity's possible foreclosure strategies with respect to wholesale mobile.

Nature of competition

Introduction

13.26 In this section, we set out our understanding of how competition in relation to the supply of wholesale mobile services operated pre-merger. Given that our theory of harm focused on fixed-MVNOs, we also describe these MVNOs' current contracts.

13.27 We also discuss the way in which MNOs make decisions on whether to bid for individual contracts, as this is important to our later analysis of ability and incentive.

The parties' activities and merger rationale

13.28 EE is one of four wholesalers of mobile services in the UK, the others being Telefónica, H3G and Vodafone. Pre-merger, EE had entered into a wholesale arrangement with BT, as well as other MVNOs.

13.29 EE currently supplies wholesale mobile services to BT, pre-merger. EE is also a supplier to other MVNOs that compete with EE and BT including Virgin Media, and a potential supplier to other MVNOs.

13.30 BT supplies retail customers with mobile services alongside its fixed communications services, and competes in the supply of these fixed

[360] We note that the Commission has left open the question as to whether a separate market should be defined for fixed/mobile bundles. See: Case M.7018 *Telefónica Deutschland/E-Plus*, recitals 56-59; Case M.5900 *LGI/KBW*, paragraph 186; Case M.5734 *Liberty Global Europe/Unitymedia*, paragraph 48. Ofcom similarly concluded that there was insufficient evidence to find a separate market. See Ofcom phase 2 submission, paragraph 3.75.

services with other fixed-MVNOs, most notably Sky, TalkTalk and Virgin Media. These fixed-MVNOs also offer (or, in Sky's case, will soon offer) mobile services alongside their fixed services.[361]

13.31 We note that part of the rationale for the merger is the ability to offer both fixed and mobile services to customers.[362] As set out in Chapter 2, the parties estimated cost savings and synergies of around £5.1 billion, of which around [✂] related to cross-selling between fixed and mobile activities (or vice versa),[363] with the remainder being largely driven by eliminating duplicative fixed costs relating to procurement, IT and network savings. This provides relevant context for our assessment.

Market shares

13.32 By subscribers, data volumes and call volumes of the MVNOs they serve, EE and Telefónica are the largest current providers of wholesale mobile services, with Vodafone third and H3G the smallest.[364]

13.33 As set out in Chapter 11, there are over 100 MVNOs currently active in the UK, accounting for around [✂] of mobile subscribers and a revenue share of [✂]. Excluding those that are wholly or jointly owned by MNOs, MVNOs' overall share is less than [✂] of subscribers and [✂] of retail revenues.

Types of MVNOs

13.34 The different types of MVNOs in the UK include the following:

- Communications providers such as BT, TalkTalk and Virgin Media, which together currently represent approximately [✂] of total UK MVNO retail revenues (of which Virgin Media accounts for [✂].

- Joint ventures between an MNO and a separate company. Tesco Mobile is a joint venture between Tesco and Telefónica, and accounts for approximately [✂] of total UK MVNO revenues. Sainsbury's Mobile

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361 We note that BT also provides wholesale fixed services to EE as well as other MNOs (including, for example, fixed broadband). We consider the potential impact on these markets in Chapters 17, 18 & 19.
362 We consider that the purchase price for EE of £12.5 billion largely reflects the underlying value of the stand-alone EE business. [✂]
363 As set out in Chapter 6, the parties have also estimated cost savings and revenue synergies from the merger with an NPV of around £5.1 billion pre integration costs. [✂]. For further details see Appendix E.
364 We note that when large contracts are allocated through bidding, such as is the case for some wholesale mobile contracts, static market shares may not be a good indicator of the strength of constraint provided by each competitor – firms with relatively 'low' market shares at a point in time may be able to constrain the behaviour of larger players by bidding strongly for the same contracts. We later consider the evidence from recent tendering exercises.

previously had a joint venture with Vodafone, although it is now wholly owned by Sainsbury's.[365]

- Other independent providers, including retailers (such as Asda), those that focus on low-cost international calling (for example Lycamobile and Lebara), business services (eg Abica), data-only services, or other niche offers, which make up the remainder of the market.[366]

13.35 MVNOs also vary as to whether they self-supply some aspects of wholesale mobile (ie by investing in their own 'core' network). With respect to the range of services purchased, an MVNO can be classified as a 'light' or 'full' MVNO:

- Light (or 'Thin') MVNOs are those possessing little or no infrastructure of their own, that rely on wholesale providers to provide an end-to-end customer service. This is often the entry-level position.

- Full (or 'Thick') MVNOs are those that maintain their own core infrastructure, and typically rely on wholesale providers only for access to the RAN of the host MNO. This requires considerable capital investment on the part of the MVNO and cooperation with its MNO host (if converting from a Thin MVNO) but means that the MVNO has more control over the services it can offer (for example what tariffs it can provide). In addition, it is typically easier for a full MVNO to switch customers to an alternative MNO host. For example, it may be possible for a full MVNO to switch customers to another MNO host without the need to replace the customer's SIM card.

13.36 In principle, MVNOs can also invest in their own RAN network in certain areas, and use their host MNO's network in other geographies. BT (absent the merger) [✂]. [✂] also indicated that this is a step they may consider in future. This is discussed further in Chapters 10 and 11.

Approach to contracting

13.37 Competition is different depending on whether an MVNO contracts directly with an MNO or via an intermediary. In particular, MVNOs can purchase these services direct from an MNO, or seek to purchase via an intermediary, such as an MVNA or an MVNE.[367] The latter can be commercially attractive

[365] And is potentially ceasing its mobile operations. See Mobile News (October 2015), *Sainsbury's and Vodafone MVNO to end after strategy fallout*.
[366] For example, charity-focused providers such as The People's Operator, which is hosted on EE's network and has pledged to donate a fixed percentage of earnings to charity
[367] BT submitted that among MVNOs, 41 have direct contracts with MNOs, with the remainder having indirect contracts through MVNAs or MVNEs.

to smaller MVNOs since the set-up process is more straightforward and less costly.

13.38 Our investigation focused on the supply of wholesale mobile contracts to fixed-MVNOs, the largest of whom purchase wholesale mobile services direct from an MNO. The presence of MVNAs and MVNEs did not affect our assessment, since our focus is on the supply of wholesale services by EE (and other MNOs) whether directly or through intermediaries; MVNAs and MVNEs also do not feature as suppliers of the larger fixed-MVNOs. We do not consider them further in our assessment.[368]

13.39 When forming contracts directly with MVNOs, MNOs will negotiate on a case-by-case basis. Key terms include the price of particular services (eg 3G/4G), minimum revenue commitments, exclusivity provisions, key performance indicators (KPIs) in relation to quality and technical support, and the extent to which the MVNO may benefit from technology improvements that the MNO offers to its own retail customers during the life of the contract. In some cases, for example where a light MVNO is seeking to become a full MVNO, or an MVNO is seeking to develop its own small cell network, the contract may also include provisions governing the obligations on the part of the MNO to support that transition.

13.40 Sky also submitted to us that, since not all important aspects can be fully set out in a contract, it is important to have a good working relationship and level of trust between MVNOs and their host.

How fixed-MVNOs tender their services

13.41 In their most recent tender exercises, [✂] initially engaged with [✂] MNOs, before seeking bids. In each case the number of suppliers involved in the process was reduced as negotiations progressed, [✂].

13.42 Not all the MNOs bid for each contract. As set out later, operators gave varying reasons for this. We consider that such behaviour is normal in a bidding market, especially where it is costly to bid for contracts, and as such do not consider that the fact that an operator has not bid for a particular MVNO's contract is necessarily strong evidence that it would not do so in future.

[368] For completeness, we note that some fixed-MVNOs, [✂], purchase wholesale mobile services indirectly through MVNAs or MVNEs. However, we note that to the extent that concerns were not likely to arise in relation to fixed-MVNOs purchasing directly from MNOs, they were not likely to arise in relation to indirect purchases. We therefore focussed our assessment on those fixed-MVNOs that purchased services directly from MNOs.

13.43 As explained later in relation to our assessment of total foreclosure, we found that the wholesale mobile bidding market was opaque. In any given bidding negotiation, the MNOs involved in the process would not always be aware of which other MNOs were bidding. The perception of an MNO's involvement has been referred to by some MVNOs as important in obtaining competitive outcomes.

Current supply relationships

13.44 We note that all four large fixed-MVNOs have recently tendered for wholesale mobile arrangements, seeking a direct contract with an MNO. Specifically, see the following:

- BT is currently a light MVNO and signed an MVNO agreement with EE in March 2014. [✄].

- TalkTalk is a light MVNO currently hosted by Vodafone. TalkTalk tested the wholesale market in late 2013 and 2014, and signed a new wholesale contract with Telefónica. It expects to carry out customer migration to Telefónica during 2016, and to subsequently become a full MVNO. [✄].

- Sky signed a contract with Telefónica in January 2015 and expects to begin offering retail mobile services as a full MVNO in [✄].

- Virgin Media has been hosted by EE (or a predecessor firm) since its launch in 1999, and signed its current contract, after a tendering process, in 2013. [✄].

13.45 We note that Virgin Media is currently the largest fixed-MVNO, [✄].

Factors MNOs consider when deciding whether to bid for an MVNO contract

13.46 In deciding whether or not to bid for a wholesale contract, MNOs generally take into account a number of factors including both short term considerations and longer term strategic considerations):

- Practical considerations, such as the credibility of the MVNO (and its proposal), the likelihood that the contract will progress to completion and the MNO's assessment of its chances of winning it.

- Capacity considerations, both in terms of the work involved (for example, a joining MVNO may necessitate complex technical work which is incompatible with existing projects), available network capacity and whether the additional demand could result in possible congestion at some cell sites.

- Strategic considerations, including:
  - the level of overlap between the MNO's and MVNO's target customers (and so the likely extent to which the MVNO will win customers at the MNOs' expense); and
  - the likelihood that the MVNO will obtain wholesale services on similar terms from another wholesaler (so that the MNO will lose retail customers whether or not it chooses to bid for the wholesale contract).

13.47 These 'strategic considerations' arise because any MVNO that offers its services on the retail mobile market will do so to some extent in competition with the MNO which hosts it. All MNOs may therefore face a trade-off between serving a wholesale customer that wins retail customers, and trying to win those customers directly itself, so it may be more profitable for the MNO to host the MVNO if the level of overlap is small (eg if the MVNO targets customers that would not otherwise buy from the MNO, so cannibalisation is small).[369]

13.48 However, an MNO must also take into account the possibility that other MNOs may bid for the contract. If a rival hosts the MVNO, then the MNO will still face cannibalisation but will not be able to offset this by earning any wholesale margin. The degree of cannibalisation depends on how strong the MVNO's retail offer is, which in turn depends on how good an offer the rival makes – the wholesale price, network quality, whether it has 4G, etc. This means that cannibalisation on the rival MNO may be lower, or higher, than on the first MNO. The presence of a rival will therefore increase the MNO's incentives to host, and incentives will be higher, the better the quality of contract the MNO expects the MVNO to receive should it not bid.

13.49 We received some submissions that, pre-merger, MNOs are less willing to serve MVNOs that compete closely for 'mass-market' customers, as opposed to niche customer segments. Sky, TalkTalk and Virgin, as 'mass-market' providers of fixed services, could potentially also be considered as such in the mobile segment. We note that all these fixed-MVNOs have

[369] In principle, the MNO may also consider hosting the MVNO but offering it less good services than the MNO's own customers receive – for example, by not giving 4G services to the MVNO.

current wholesale contracts (although Sky has yet to launch its mobile service).

How the growth of fixed-mobile bundles could change MNO behaviour

13.50 We noted that if an MNO also sells other products, such as fixed services, it is likely to seek to sell those products to some of its mobile customers. It may therefore take into account, in its assessment of the trade-off of hosting another MVNO active in fixed services, its expected retail margin across both products where it may expect to lose customers to the MVNO as a result of the MVNO gaining beneficially wholesale terms. Other considerations (wholesale profits and whether another MNO would serve the MVNO) would remain the same.

13.51 We considered that an MNO may seek to understand the extent to which the mobile services drive the choice of fixed service provider, including the extent to which:

- customers switching to the MNO for its mobile services also choose to switch their fixed services to that MNO; and
- customers switching away from the MNO to another company also switch their fixed services.

13.52 Where there is a relationship between fixed services and the mobile service, we considered that the MNO may also consider less direct effects: for example, offering a good mobile service may potentially give the MVNO a better reputation and make the MVNO's fixed services more attractive. As such, depending on how closely the MNO and MVNO compete and the likelihood of the MVNO getting a wholesale contract elsewhere, the more mobile services drive consumers' choice of fixed services, the less willing an MNO that sells fixed services will be to host a fixed-MVNO.

13.53 Conversely, if fixed services begins to drive a customer's choice of mobile services, then for an MNO that does not sell fixed services, or has only a small share in this market, this could provide a greater incentive to bid for a fixed-MNO's wholesale contract.

13.54 For example, if a substantial proportion of mobile products were, in future, sold as part of a fixed-mobile bundle to customers, and those customers would not unbundle in response to a better price in the individual elements, mobile-only players would stand to lose substantial market share if they were unable to access those customers. MNOs may potentially respond to such growth in a number of different ways, including for example by:

- increasing sales of their own fixed-mobile bundles;
- maintaining or increasing their indirect presence through wholesale mobile arrangements with fixed-MVNOs; and/or
- strategic arrangements between mobile-only MNOs and fixed-MVNOs and, potentially, further consolidation.

13.55 Similarly, in such a scenario, fixed-MVNOs will face strong incentives to protect their position and may therefore seek when negotiating with MNOs to highlight their specific strategic strengths in fixed-line or pay TV services, which could allow them to win customers from rivals of the MNO.

14. Wholesale mobile: competitive assessment of total and partial foreclosure

14.1 In this section, we first set out third party concerns and main party views in relation to the wholesale mobile market. We then explain the possible foreclosure strategies we have investigated and the analytical framework we have applied. We then consider each strategy in turn.

Third party concerns

14.2 Third parties raised concerns that the merged entity may:

- in the future, restrict or degrade the supply of wholesale mobile services to fixed-MVNOs by not competing for their contracts;
- [✄]; and
- degrade the quality of the wholesale mobile services that EE may offer and/or provide to an MVNO under some potential future contract.

14.3 [✄] also raised a concern that the merged entity would undertake similar strategies aimed at foreclosing its rivals, but in relation to stand-alone mobile services. [✄] submitted that the merged entity would have an increased incentive to do so post-merger because its increased spectrum holdings would make its mobile service more attractive and it would therefore be more likely to win any mobile customers that the foreclosed MVNO were to lose as a result of the foreclosure.

Main party views

14.4 BT submitted that EE had strong incentives to offer access to its network so as to maximise wholesale revenues and profit and that these incentives would not change post-merger.[370] In particular, BT submitted that:

- any anticipated cannibalisation of the merged entity's retail sales would occur to the same extent pre- or post-merger and that the merged entity would have no possibility to recover wholesale revenues foregone as a result of restricting access to MVNOs through increased profits at the retail level;[371] and

[370] BT/EE initial submission.
[371] BT response to issues statement.

- any MVNO refused access by the merged entity would remain able to enter the retail mobile market through access to other MNOs' networks.[372]

14.5 EE submitted that the merged entity would not have any ability to foreclose given that wholesale market is competitive and the merger will not result in any change to the existing number of wholesale providers. EE submitted that Telefónica and Vodafone were committed to the market and H3G was an active wholesaler.[373]

Possible foreclosure strategies

14.6 We identified two possible types of foreclosure strategy which the merged entity could pursue, in relation to the supply of wholesale mobile services, which are:[374]

- total foreclosure (ie refusing to bid/supply) of one or more fixed-MVNOs, which leads to other MNOs that remain on the market offering worse terms to fixed-MVNOs; and/or [375]

- partial foreclosure of fixed-MVNOs, whereby the merged entity continues supplying inputs to fixed-MVNOs, but at higher prices or reduced quality, either under existing contracts (ie Virgin Media), or under future contracts (ie all fixed-MVNOs, including Virgin Media when its contract comes up for renewal).[376]

14.7 We note that both types of strategy could lead to a range of worsened outcomes for fixed-MVNOs in terms of the price and quality of the wholesale services that they buy, depending on the exact strategy the merged entity follows and the price and quality of wholesale services other MNOs are willing to offer. In turn, some aspects of degradation, such as lower speeds, could be directly passed on to customers in a way that could affect the

[372] BT response to issues statement, paragraph 1.3.
[373] EE response to the issues statement.
[374] We focus in this theory of harm on the change in incentives brought about by the merger in relation to the wholesale supply of mobile services. We consider separately in Chapter 18 the potential impact of the merger on the wholesale supply of SFBB (a separate input required by some fixed-MVNOs offering fixed/mobile bundles, such as Sky and TalkTalk).
[375] Our investigation suggested that contracts between MNOs and MVNOs often contain a significant degree of flexibility; for example, in relation to the rollout of new technologies. Therefore, while potential foreclosure strategies could become apparent at the negotiation stage of new contracts, they could also manifest themselves dynamically in the contract term. We considered that the enhanced risk of such behaviour (ie 'in contract' foreclosure) could also discourage MVNOs from engaging with EE at the outset of negotiations.
[376] There may be a range of possible foreclosure strategies that the merged entity might adopt within each of these constructs. For example, with regard to 'partial' foreclosure, the merged entity might try to harm its fixed, within-contract MVNO customers by failing to respond as quickly or effectively to normal service issues or disruptions associated with providing wholesale mobile services (ie, as opposed to taking explicit actions to degrade the quality of those services outright).

MVNO’s retail mobile offering. Some aspects, such as poor fault repair or billing issues, may have a less certain effect; and others we would expect to be passed on in part but not necessarily in full, such as higher wholesale prices.

14.8 We also considered whether, in line with [✂] submission, the merged entity could have an increased incentive to foreclose both fixed and stand-alone MVNOs because of improvements in its offer brought about by its increased spectrum holding. As set out in Chapter 12 we do not consider that the merger improves EE’s capabilities sufficiently to substantially increase the proportion of customers it recaptures from rivals. We therefore do not specifically consider this aspect further in this section, although we do discuss the role of recapture rates.

Analytical framework

14.9 We assessed each foreclosure strategy by considering whether:

- the merged entity would have the ability to harm fixed-MVNOs by refusing to supply them with wholesale mobile services, or supply these services to them under worse terms; and
- whether the merged entity would have the incentive to harm fixed-MVNOs in this way.

14.10 To the extent that we found ability and incentive, we also considered what effect the foreclosure strategies would have on competition.

14.11 We explain what we mean by each of ability and incentive, in relation to both total and partial foreclosure strategies, below.

Ability

14.12 We considered that the merged entity would clearly have the ability to refuse to supply/offer wholesale mobile services on worse terms to fixed-MVNOs in any future contracts, but that this would only constitute an ability to foreclose if it causes harm to fixed MVNOs. We considered that such a strategy could only harm fixed-MVNOs if, following a change in EE’s behaviour as a result of the merger other MNOs also refused to supply, or offered worse terms, resulting in the fixed-MVNO receiving worse terms (price and/or quality) than it would have received in the counterfactual.

14.13 We considered that a refusal to supply (or an offer to supply on worse terms) could potentially have an effect on a fixed-MVNO’s downstream retail mobile services if passed through, and could cause consequential harm on that fixed-MVNO's other services.

14.14 Specifically, this could in principle include harm to:

- the fixed-MVNO's retail offer of mobile services, either on a stand-alone basis or where mobile services were cross-sold to fixed customers or offered as part of a bundle with other services (which may compete with the merged entity's own fixed-mobile bundles and stand-alone products);
- the fixed-MVNO's brand or reputation more generally; or
- the fixed-MVNO's ability or incentives to invest in its services.

Incentive

14.15 We considered that the merged entity, in deciding whether to carry out a foreclosure strategy involving total or partial foreclosure of its wholesale mobile services, would balance two key factors:

- The potential wholesale revenue that it would expect to immediately and subsequently forego if it refused to supply mobile services to a fixed-MVNO, or if it supplied a fixed-MVNO which attracted fewer subscribers than it would have if the merged entity had supplied a higher quality wholesale service.[377]
- The potential retail revenue it would expect to gain over time from higher sales of its own products as a result of harming that fixed-MVNO.

14.16 We therefore considered whether a strategy involving total or partial foreclosure was likely to be profitable for the merged entity to pursue when set against any loss of wholesale revenue.

14.17 Separately, we also noted that O2, Telefónica's UK business, is currently in the process of being acquired by H3G. In line with our approach to the counterfactual (as explained in Chapter 7), we note that if the proposed acquisition continues to proceed as currently envisaged by the undertakings concerned, the potential impact on competition resulting from that acquisition will be assessed separately by the European Commission. The completion of the proposed acquisition and the outcome of the Commission's investigation are uncertain. However, to the extent the acquisition would significantly impede effective competition (ie the legal test that the

[377] For example, [✂].

Commission applies) in the wholesale market, the European Commission would prohibit the merger or accept commitments offered by H3G and O2 that would restore effective competition.

Total foreclosure

14.18 We first considered the possibility that the merged entity would refuse to bid for fixed-MVNO contracts (ie engage in total input foreclosure).

Assessment of ability

14.19 We considered that, for the merged entity to have the ability to pursue such a strategy, it would need to be likely that a refusal to bid would substantially increase the price paid by fixed-MVNOs,[378] or cause a substantial degradation in quality.[379] This ability could arise either because EE previously made the best offer, or because in a scenario where EE did not bid other wholesalers recognised that competition was weaker and degraded their wholesale offers accordingly.[380]

14.20 The parties submitted that the upstream wholesale market was competitive and that MVNOs can play MNOs off against each other to get the most favourable contractual terms. The parties submitted that the market will remain competitive post-merger, in particular given the formal bidding processes undertaken by MVNOs and the strong incentives MNOs will have to bid for MVNO contracts.[381]

14.21 Ofcom told the CMA that [✂]

- [✂]
- [✂]
- [✂]

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[378] For more discussion on what size of price increase may be necessary, see the later discussion on incentives

[379] This could take many forms, including a direct reduction in quality (or a failure to resolve quality issues), a decreased amount of technical support given to MVNOs and/or the delay of access to new services.

[380] In the CMA's *Merger Assessment Guidelines* this influence on ability is described as 'The extent to which rival manufacturers can avoid a price increase by switching away from this input.' In relation to ability the guidelines also highlight 'the cost of the input relative to all costs of the final product', and 'pass-through of cost increases'. We will discuss these factors later, in our assessment of incentives. As set out in the guidelines 'In practice, the analysis of [ability, incentive and effect] may overlap and many of the factors may affect more than one question. Therefore, the Authorities' analysis of ability, incentive and effect may not be in distinct chronological stages but rather as overlapping analyses.' See *Merger Assessment Guidelines*, section 5.6.

[381] Parties' response to issues statement, paragraphs. 9.11–9.36.

14.22 Some MVNOs submitted that options available to MVNOs and competition in the wholesale mobile market was limited; in particular, that the market was:

- highly concentrated, with MVNOs having very few potential hosts;
- [✄]
- very fragile, with even the current level of competition (which in TalkTalk's view comprised three rather than four active participants, as it considered Vodafone had withdrawn from the market) barely enough to secure reasonably competitive outcomes, with any reduction leading to an almost total collapse of the market.

14.23 In considering whether the merged entity's withdrawal from the supply of wholesale services to fixed-MVNOs would lead to a price rise (or quality degradation) in the wholesale market, we therefore assessed the following:

- Whether the merged entity could credibly commit to withdrawal.
- The existing competitive constraint that each MNO exerted pre-merger in relation to the supply of wholesale services to fixed-MVNOs and how, for each of Telefónica, Vodafone and H3G, this may change in a post-merger scenario where EE chose not to bid for these contracts (including any other factors, such as capacity constraints, that could impact the likelihood of that MNO bidding).
- The key strategic drivers we identified of an MNO's willingness to bid for wholesale mobile contracts.
- Taking the above points into account, our view of the possible scale of price rise (or quality degradation) that might occur if EE refused to bid in future, as part of a total foreclosure strategy.

Credible commitment to withdraw

14.24 We assessed whether the merged entity would be able to credibly commit not to bid to supply wholesale mobile services to particular fixed-MVNOs, and thus cause other MNOs to consider changing their bidding strategy (since they would not have to beat the merged entity).

14.25 [✄]

14.26 Sky told the CMA that it 'anticipates that EE could credibly commit to not bidding for new MVNO contracts, particularly for fixed-MVNOs.' Sky highlighted Telefónica's statement to the CMA that BT may decide not to give wholesale access to fixed-MVNOs[382] and said that 'it is already clear to the MNOs that BT-EE would have reduced incentives to bid for fixed-MVNO contracts post-merger.'

14.27 TalkTalk also argued that should the merged entity not bid for future contracts, this would have a direct effect on the price that fixed-MVNOs achieve; [✂].

14.28 In assessing these arguments, we note that, even if EE attempted to pursue a total foreclosure strategy against fixed-MVNOs, it would likely remain present in the overall wholesale mobile market (ie supplying mobile-only MVNOs), and therefore there would be few or no technical barriers to prevent it from supplying fixed-MVNOs. We considered that it was questionable whether a statement that the merged entity intended to withdraw entirely from supplying fixed-MVNOs would be considered entirely credible by its competitors (given the opaque nature of the wholesale mobile market). In particular:

- on the one hand, it is well known that BT views the fixed-MVNOs such as Virgin Media, Sky and TalkTalk as its competitors in fixed services and therefore could have reasons not to engage commercially with them. If BT genuinely had incentives to foreclose these rivals, this could make its withdrawal more credible; and

- on the other hand, we considered that the merged entity may have reasons to underplay its presence in the market whilst nevertheless entering into negotiations with some MVNOs, as this could result in a better deal than it would have achieved if it had been visibly competing. In this regard, we note that [✂].[383] [✂].

14.29 We note that if such a commitment to withdraw is not considered credible by the market, then this could dampen the effect that a full withdrawal would have on the ability of fixed-MVNOs to obtain competitive terms. [✂]

Existing competition

14.30 We assessed the level of activity of each MNO in the market pre-merger in relation to wholesale services for fixed-MVNOs, along with its success at winning contracts and third party perceptions of that MNO. We also

[382] Telefónica said that, post-merger, BT might decide not to give access to its direct competitors in bundles, especially if it had a network that was far superior to everybody else (ie 'why give away the crown jewels on which they had spent £12.5 billion?'). Telefónica hearing summary, paragraph 43.
[383] Vodafone Group's CEO's statements in February 2014 suggested that engagement in the MVNO market may not be worth it and, in relation to 4G, MVNOs would be expected to pay their fair share. Vodafone (2014), *Interim Management Statement*.

considered how an MNO's approach to the market might change in a post-merger scenario where fixed-mobile bundles became more prevalent and EE chose not to bid for these contracts.

14.31 As background, Table 13.1 summarises the bidding information set out in more detail in the following discussion of each MNO.

Table 13.1: Tender negotiations between BT, Sky, TalkTalk, Virgin Media and the MNOs (and stage reached)

	Telefónica	*Vodafone*	*EE*	*H3G*
Virgin (2012/13)	[✂]	[✂]	[✂]	[✂]
BT (2013)	[✂]	[✂]	[✂]	[✂]
TalkTalk (2013/14)	[✂]	[✂]	[✂]	[✂]
Sky ([✂])	[✂]	[✂]	[✂]	[✂]

Source: [✂]

EE

14.32 We started our assessment by considering EE's position in the market pre-merger. [✂]. EE was the incumbent host at the time of Virgin Media's tender. It submitted a bid alongside others and was successful in its renewal of the Virgin Media contract. [✂]

- *Third party views*

14.33 Sky submitted that [✂].

14.34 TalkTalk submitted that [✂]. [✂].

14.35 Virgin Media told the CMA that [✂].

14.36 In relation to its recent contract, Virgin Media provided the CMA with its assessment of the price and non-price aspects of the offers it received in 2013. From this, it appears that Virgin Media received bids from EE, [✂]. Virgin Media told the CMA that it opted to remain with EE because [✂].

- *Main party views*

14.37 The parties told the CMA that:

- the merger must be assessed against a counterfactual in which EE does not bid for each and every MVNO contract that is put out for tender;
- the fact that EE [✂] did not appear to lead [✂] being disadvantaged, since [✂] secured arrangements with another MNO [✂];
- [✂]. EE submitted that if it had been essential [✂] in order [✂]; and

- [✂]

14.38 BT submitted some information comparing the bids it received at the time of its own tender exercise. [✂]

- *Our assessment*

14.39 Pre-merger, we found that EE was perceived to: *(a)* have a high quality network, *(b)* have spare capacity on that network for potential MVNO deals, and *(c)* be a willing provider of wholesale mobile services. We found that it was considered by fixed MVNOs to be an important competitor to other MNOs. However, we also observed that [✂].

14.40 Therefore, we found that pre-merger EE had exerted an important constraint in the market for the supply of wholesale mobile services in relation to those bids in which it participated in. We found [✂].

Telefónica

14.41 Telefónica was been invited to bid for the tenders of Virgin Media, BT, Sky and TalkTalk. Telefónica engaged with all these processes to an extent, [✂], and was successful in winning two of these contracts (Sky and TalkTalk).

- *Third party views*

14.42 Sky told the CMA that [✂].

14.43 TalkTalk noted that [✂].TalkTalk noted that Telefónica had a track record of delivering successful MVNO partnerships. [✂].

14.44 [✂].

- *The parties' views*

14.45 BT told the CMA that in relation to its recent contract [✂].

14.46 The parties also submitted that Telefónica 'has a strong position in the wholesale mobile market. This is supported by the fact that Telefónica has recently won two large MVNO contracts [Sky and TalkTalk] Telefónica also hosts a number of other significant MVNOs such as Tesco Mobile and Lycamobile'.[384]

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[384] BT initial submission.

- *Telefónica's submission*

14.47 Telefónica told the CMA that, when deciding whether to bid for an MVNO contract, it takes into account a number of factors, including [✂].[✂].

14.48 Telefónica told the CMA that it [✂].

- *Capacity constraints*

14.49 Telefónica told the CMA that [✂], Telefónica UK believes that it could be a credible alternative to EE for Virgin Media's business. Telefónica UK believes that, in future, the […] strategic reason to host Virgin Media as an MVNO is likely to remain'.

14.50 Telefónica submitted that it [✂].

14.51 Telefónica also submitted an internal document showing that [✂]: [385]

- If Telefónica were to purchase 20 MHz of 2.3 GHz spectrum, [✂].
- If Telefónica did not purchase 2.3 GHz spectrum but were to purchase at least some of the 3.4 GHz spectrum (of which 150 MHz will be available), [✂].

14.52 Telefónica submitted that it is of the view that [✂].

14.53 We noted that further spectrum in the 700MHz band (and others) will be available in the long term.[386]

14.54 Third parties and the parties also made submissions in relation to Telefónica's potential capacity constraints:

- Sky told the CMA that [✂].[387]
- Virgin Media submitted that, [✂] .
- The parties told the CMA that 'all the MNOs have many options to upgrade their networks and undertake denser deployment if they do not want to acquire more spectrum at the prevailing price at the [upcoming] auction'. They also submitted that 'they do not consider it credible that any MNO would fail to provision sufficient capacity such that they would

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[385] See Appendix G (Spectrum).
[386] See Appendix G (Spectrum) and also Ofcom (2014), *Decision to make the 700MHz band available for mobile data - statement*.
[387] Sky hearing summary.

be unable either to serve its existing customers, or to take any on additional customers'. They also submitted that Telefónica's behaviour in the wholesale market suggests that it will not face substantial capacity constraints – it has recently entered into full MVNO arrangements with Sky and TalkTalk.

- *Our assessment of Telefónica's competitiveness post-merger*

14.55 We found that Telefónica is currently an important player in the wholesale mobile market and will continue to be for the duration of its contracts with Sky and TalkTalk.

14.56 We noted that Telefónica is a mobile-only operator at the retail level. If fixed-mobile bundles become more prevalent and Telefónica remains a mobile-only player, we considered that this is likely to maintain or increase its incentives to continue to offer wholesale mobile services to one or more MNOs (either by renewing its existing contracts with Sky and TalkTalk and/or bidding for a new contract with Virgin Media). We also considered that Telefónica would have an incentive to maximise the retail profit its MVNOs make and then extract that profit through wholesale fees.

14.57 We noted that [✂]:

- [✂]
- [✂]

14.58 [✂] we consider that the above evidence suggests that [✂]. We also note that 700 MHz spectrum will become available by the beginning of 2022, and potentially sooner.[388]

14.59 [✂], [✂]

14.60 We considered that Telefónica's capacity [✂]. We considered that Virgin Media would bring [✂] market share with it, and so would be attractive to Telefónica in terms of revenue; [✂]. [✂]. We considered that Telefónica's existing contract indicates its ability and indeed contractual obligation to host Sky beyond [✂]. We considered that [✂].

14.61 We considered that, in a scenario where fixed-mobile bundles became more prevalent, Telefónica, as a mobile-only supplier, would lose revenues unless it either developed a strong fixed offering of its own, or generated wholesale

[388] Ofcom (2014), *Decision to make the 700 MHz band available for mobile data - statement*.

revenue from fixed-mobile bundle sales by another operator. We therefore considered that if fixed-mobile bundles became important, Telefónica would have a stronger incentive to provide wholesale mobile services to fixed providers. It would also have an incentive to offer wholesale terms that allowed those providers to remain competitive against the merged entity in the downstream market.[389] We consider that, even if Telefónica became the only credible supplier, this may limit its incentive to increase substantially the wholesale prices it charges to fixed-MVNOs.

Vodafone

14.62 Vodafone was invited to bid for the tenders of [✄] TalkTalk [✄].[✄].

- *Third party views*

14.63 Sky told the CMA that [✄].

14.64 Sky also told the CMA that, in relation to Vodafone:

- [✄]
- [✄]; and
- [✄].

14.65 [✄]

14.66 TalkTalk told the CMA that it does not perceive Vodafone as a significant competitive supplier and that it has withdrawn from the market and is attempting to engineer the withdrawal of others from the market also (within the bounds of competition law),[390] [✄].

14.67 TalkTalk also told the CMA that, in relation to Vodafone:

- [✄];[391]

[389] For example, in the event that Telefónica were able to impose a wholesale price rise, it would have an incentive to do so in ways that were least likely to damage the MVNO's incentive and ability to compete (for example by using fixed in preference over variable fees).
[390] TalkTalk response to issues statement.
[391] Ibid.

- its actions reflected an apparent desire to engineer a tacit agreement amongst MNOs to withdraw service from MVNOs, particularly those seen by Vodafone as price disruptors;[392] and

- its incentives to offer wholesale access to MVNOs may be clouded by its own proposed move into fixed-line products.[393]

14.68 [✂].

14.69 [✂]:

- [✂];

- [✂] [✂]; and

- it had indicated in public statements that incentives to offer attractive MVNO arrangements are not always clear.

14.70 [✂].[394]

- *Main party views*

14.71 In relation to its negotiations with Vodafone, BT told the CMA that: [✂].

14.72 We note that [✂]. However, [✂].

14.73 BT also said that [✂].

14.74 EE told the CMA [✂].

- *Vodafone's internal documents*

14.75 We reviewed internal documents provided by Vodafone. These indicated [✂]

- [✂].

- [✂].

[392] ibid.
[393] ibid.
[394] Gamma initial submission (3 July 2015), pp1–4.

- *Vodafone's submission*

14.76 Vodafone submitted that it strongly refutes any claims regarding a withdrawal from the market and/or that Vodafone is attempting to engineer the withdrawal of others.

14.77 Vodafone told the CMA that [✂].

14.78 Vodafone told the CMA that it was [✂].

14.79 In relation to the discussion in its internal document (explained above) of preferable MVNO customers, Vodafone submitted that [✂].

14.80 Vodafone also told the CMA that although recent discussions [✂].

- *Our assessment of Vodafone's competitiveness post-merger*

14.81 In light of the evidence set out above, we considered that, pre-merger, Vodafone had exercised some competitive constraint/presence in the market, [✂].

14.82 Post-merger, an express refusal by EE to bid could theoretically also discourage Vodafone from bidding, should it wish to reach, as TalkTalk suggests, a tacit understanding among its competitors not to bid for MVNO contracts. However, we consider that the continued role of Telefónica and H3G post-merger, with strong incentives to bid for fixed-MVNO contracts, would be likely to undermine such a strategy.

14.83 In addition, in a scenario where fixed-mobile bundles grow in prevalence (in particular, through cross-selling to a fixed base), we considered that Vodafone would lose revenues unless it was able to grow its fixed offering and/or generate wholesale revenue from fixed-mobile bundle sales by another operator, and therefore may continue to have an incentive to bid.

14.84 We therefore consider that Vodafone could face stronger incentives to maintain an indirect presence in that channel (ie through a contract with a fixed-MVNO) in addition to an incentive to grow its own fixed-mobile offer organically. Although the investments that Vodafone has already made in fixed services suggest some expectation of success in its own right, Vodafone may be encouraged to also serve fixed-MVNOs because:

- we received some submissions that cross-selling mobile to fixed customers may be a stronger driver of fixed-mobile bundles than vice versa; and

- [✂]. We note that EE has been serving fixed-MVNOs while present in fixed services with a 3% share of supply in broadband.[395]

14.85 Therefore, we considered that Vodafone would be likely to have incentives to provide wholesale services post-merger, although it is difficult to conclude on whether it would be a stronger or weaker competitor than in the fixed-MVNO bidding exercises that took place pre-merger.

H3G

14.86 H3G has been invited to bid for a number of contracts, including with fixed-MVNOs. [✂],[✂].

- *Third party views*

14.87 [✂].

14.88 [✂] Sky also submitted that the proposed merger together with the H3G/O2 merger might lead to increased prices and/or degraded service quality for MVNOs.

14.89 [✂]. TalkTalk considered that the H3G/O2 merger would lead it to facing a monopoly supplier of wholesale mobile services (ie Telefónica).

14.90 [✂].

14.91 We also heard from Dixons Carphone. Although not a fixed-MVNO, Dixons Carphone has recently launched an MVNO brand (iD) using the H3G network. [✂] At the time of seeking a wholesale provider, Dixons Carphone [✂] chose H3G because [✂] in data roaming [✂] This was therefore well aligned to iD's proposition, offering consumers flexible deals and low prices for 4G, [✂] Dixons Carphone also submitted that in general wholesale rate cards do not allow MVNOs to be competitive in relation to tariffs with higher data allowances or higher end-handsets.

- *Main party views*

14.92 EE submitted that the notion that H3G does not or cannot compete is false and contrary to recent evidence. EE considered that H3G had always been 'in the race' and noted that H3G had recently won Dixons Carphone, which is a major player in the mobile market.

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[395] Ofcom (2014), *The communications market report.*

14.93 [✂], and also emphasised that in April 2015, H3G announced that it was launching a London-based MVNE platform to provide services to MVNOs both in the UK and internationally, stating that it expected to announce partnerships with a number of MVNOs in the coming months.[396,397] [✂].[398] [✂].[399]

- *H3G's submission*

14.94 H3G reported that it recently received [✂] hosting tenders from prospective MVNO customers. H3G submitted bids on [✂] of these tenders and won [✂] With respect to TalkTalk's 2014 tender, H3G [✂].[400] [✂]

- *Capacity constraints*

14.95 H3G also submitted that, in relation to capacity, it remains [✂] relative to its competitors. H3G submitted that its network carries [✂]% of all data traffic in the UK on just 12% of the spectrum, and that it is [✂].

14.96 H3G submitted analysis which showed the level of congestion that it forecasts, on the basis of spectrum it already owns, including the 1.4 GHz spectrum it recently purchased, planned investments, [✂]. This evidence is explained in detail in Appendix G. H3G submitted that this shows that [✂].

- *Assessment of H3G's competitiveness post-merger*

14.97 We noted that pre-merger H3G [✂]. We also noted that H3G had recently won a tender for the Dixons Carphone wholesale mobile contract.

14.98 We considered that, in a scenario where EE refuses to bid, H3G could be incentivised to bid more often and therefore be a stronger wholesale competitor.

14.99 We noted H3G's submissions in relation to [✂].

14.100 In addition, we consider that, as in the case of Telefónica, for as long as H3G remained a mobile-only player it would likely have incentives to maintain an indirect presence (in addition to any direct presence) in the

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[396] See for example Hutchinson Whampoa Limited's website.
[397] BT response to issues statement.
[398] BT phase 2 submission.
[399] BT phase 2 submission.
[400] TalkTalk ultimately switched from Vodafone to O2.

fixed-mobile retail market by engaging competitively to win business with at least one fixed-MVNO in the wholesale market.

Key strategic drivers post-merger

14.101 As set out above, evidence on bidding behaviour showed a number of strategic drivers that appeared to be informing an MNO's decision on whether to bid (and for which contracts).

14.102 First, we observed that all MNOs consider both the expected wholesale revenues generated from MVNOs and the likelihood of some lost retail revenues as a result of cannibalisation.[401]

14.103 In particular, we note the following:

- In some cases, certain MVNOs are particularly attractive to MNOs, because they allow them to target customer segments that the MNO's core brand is not as effective at reaching. For this reason, [✂][✂].
- In other cases, while MVNOs may target similar segments to, and therefore may compete with, the MNO in question, the MNO may still have an incentive to serve them if the alternative is for the MVNO to be served by a competing wholesaler. This is because in such a case an MNO that refused to bid would lose out on wholesale revenue without preventing any downstream losses.

14.104 Secondly, MNOs assess, in light of growing demands for data, whether an allocation of capacity to provide wholesale mobile services to MVNOs could impact their ability to provide mobile services to their own retail customers for the duration of the contract. This may impact an individual MNOs willingness or ability to bid for certain contracts.

14.105 In contrast, [✂] a fixed-MVNO may have some countervailing buyer power as regards a specific MNO, if that MNO requires wholesale access to an input offered by the fixed-MVNO [✂] We consider it possible that Virgin Media, as a supplier of backhaul to MNOs, could be helped in its negotiations as a result.

[401] Appendix G (Spectrum).

14.106 In light of the above, we consider that post-merger, if fixed-mobile bundles grow in importance:

- Telefónica, which does not retail fixed products to consumers, and H3G, which does not retail fixed products at all, would both face strong incentives to gain or retain revenues that would be lost to fixed-mobile providers, through wholesale arrangements with fixed-MVNOs. They would therefore likely have an incentive to structure their wholesale offer in a way that enabled their fixed-MVNOs to be competitive at the retail level; and

- Vodafone could also face greater incentives to grow its indirect presence in the fixed-mobile market, because at present it has only a limited direct presence in the supply of fixed services [✄] so could be expected in the described scenario to lose mobile market share to rival fixed-mobile providers.

Assessment of ability

14.107 We considered whether recent tendering activity may be informative in considering the size of a possible price increase or quality degradation that could occur should EE choose not to bid.

14.108 We noted the following:

- [✄].

- BT's first and second-placed bidders [✄].

- Sky also received [✄].

- [✄]. Comparing the prices for calls and data (including 4G) in TalkTalk's contract suggest that [✄].TalkTalk also secured terms allowing it to roll out its own small cell network, [✄].

14.109 Pre-merger, the price variation between the winning and second-placed bids was therefore as small as 5%, [✄]. The extent of variation in other terms is difficult for the CMA to assess.

14.110 We received conflicting arguments from the parties and third parties about what recent tenders can tell us about the scale of possible price increases that would occur should EE choose not to bid.

14.111 The parties submitted that:

[✄]. [✄]

14.112 On the other hand, [✄] while Sky submitted that:

> As a general point, Sky highlights that strong competition between three or four MNO hosts to become the final two shortlisted bidders can be expected to result in more competitive wholesale terms than those which would result if there were only two potential MNO hosts from the beginning of the tender process. Furthermore, in relation to EE specifically […] [✄]

14.113 In general, we would expect the loss of a rival to reduce competition in a way that we would expect to make the customer worse off overall (through the worsening of some aspects of quality or a higher price). However, we believe that the impact of a loss of a competitor might be mitigated by the MVNO's control over the structure of the tender process, if the MVNO can convince one bidder that it has another strong bid. The merged entity's withdrawal from contention, if credible, is likely to make it more difficult for MVNOs to convince MNOs that it has another strong bid, but not impossible.

Conclusion on ability

14.114 Based on the evidence set out above, we considered that, pre-merger:

- EE was a strong competitor in wholesale mobile;
- Telefónica, Vodafone and H3G were also competing in wholesale mobile, but Vodafone and H3G had been less successful in recent bids; and
- EE was likely to have exerted downward pressure on wholesale prices, including potentially in instances where it had chosen not to bid.

14.115 We considered that in a post-merger scenario where the merged entity chose not to bid for wholesale contracts potentially coming up for tender in [✄],[402] the extent of any price increase at the wholesale level that its refusal to bid could cause would depend on how other MNOs would react. Pre-merger, the perception of EE bidding appears to have acted as a constraint on rival MNOs, [✄]. We considered that post-merger in a scenario where EE had an incentive not to bid for fixed-MVNOs, there is a possibility that it would nevertheless exert some constraint on other MNOs (especially if it was difficult for it to credibly commit to withdraw). We considered that there was considerable uncertainty over whether this would be the case.

[402] As set out earlier, [✄] is when Virgin Media's period of exclusivity ends; [✄]

14.116 We considered that the merged entity might be more likely to be able to cause a price rise by withdrawing if other MNOs faced future capacity constraints, although we noted that:

- H3G's [✄] and that it remains open to H3G to purchase 2.3GHz spectrum at the upcoming auction and/or to make further investments in its network to alleviate any constraints that may arise; and

- Telefónica's constraints [✄].[403] [✄]

14.117 We also considered that there were important factors which after the merger might, relative to the pre-merger situation where fixed-mobile bundles do not appear to be strong drivers of customers' behaviour, increase the other MNOs' incentives to bid competitively (and therefore place downward pressure on wholesale prices).

14.118 In a scenario where fixed-mobile bundles became important, MNOs without a strong fixed offering (ie Telefónica, H3G and potentially Vodafone), facing growing competition in mobile from fixed-mobile bundles offered by the merged entity and other fixed-MVNOs, would have greater incentives than pre-merger to provide fixed-MVNOs with wholesale mobile services.

14.119 If Sky and TalkTalk are successful at growing their fixed-mobile base during the course of their current contracts with Telefónica, this will mean that an MNO bidding for either contract at renewal would be gaining significant wholesale volumes, representing retail customers that have already been won from Telefónica and its rivals. Gaining in relation to all of those retail customers, via a wholesale contract, may therefore be less risky and therefore more attractive than hoping to gain only a proportion of customers that Sky and TalkTalk might lose (as an indirect result of worse wholesale terms) if the MNO were to not bid for the contract. This may increase their attractiveness as an MVNO partner to other MNOs, such as Vodafone and H3G, who might be incentivised to increase their indirect presence in fixed-mobile bundles. This could in turn drive greater price competition for that contract.

14.120 In relation to the price rise that the merged entity may cause by refusing to supply fixed-MVNOs, we considered that a prospective host of a fixed-MVNO (whether the incumbent or a new MNO) would therefore be constrained by:

[403] See further Appendix G (Spectrum).

- the presence of an actual or perceived outside option and, in particular, the presence of an outside option that also wants to gain market share in fixed-mobile bundles; and

- the desirability of structuring a contract and agreeing terms that ensure that those fixed-MVNOs on their networks could be reasonably competitive in the market.

14.121 Based on the evidence set out above, we provisionally concluded that should the merged entity not bid for future contracts to supply fixed-MVNOs, those MVNOs would remain able to gain wholesale contracts from the three remaining MNOs, but could face higher wholesale prices (and/or lower quality) for their wholesale mobile inputs.

14.122 However, we found that the extent of any price rise (or quality degradation) was difficult to quantify, and would depend upon the bidding strategies of the other MNOs. In particular, we found that:

- The nature of the tender process for wholesale mobile services may still enable some fixed-MVNOs to obtain competitive terms with the participation of only two MNOs; and

- The more important fixed-mobile bundles become, the stronger incentives some other MNOs might have to bid aggressively to supply wholesale mobile services to a fixed-MVNO who can attract customers that the MNO cannot at the retail level, and therefore the smaller the likely effect of this foreclosure strategy on a fixed-MVNO.

Assessment of incentive

14.123 We now consider the merged entity's incentives not to bid for wholesale contracts for fixed-MVNOs.

Third party views

14.124 TalkTalk told the CMA that it believed that EE's [✄] engagement in the wholesale market pre-merger would get worse post-merger, and that it was likely that EE would not wish to participate in any reasonable supply arrangement with TalkTalk if the merger goes ahead.

14.125 TalkTalk submitted that the importance of bundles including both fixed and mobile would result in EE's wholesale mobile service offering being at least partially withdrawn from the market by BT post-merger. TalkTalk submitted that the merger would increase the incentive of the combined entity to foreclose, or raise the costs, of rival multi-play offerings and that this withdrawal would likely be targeted at providers wishing to use purchased mobile capacity to offer fixed-mobile bundles. TalkTalk submitted that this would enable BT to obtain an advantage in the market for quad-play bundles, as the ineffective remaining competition in the wholesale MVNO market will lead to other operators paying higher prices.[404]

14.126 [✄]

14.127 Telefónica told the CMA that some MVNOs, such as Sky or Virgin, might have specific challenges with doing business with BT given increasing reliance on BT for fixed wholesale products, but that other operators might see synergy benefits from having one provider of wholesale mobile and fixed services.

14.128 Virgin Media submitted that ‘as a result of changed incentives of the merged entity, the Proposed Transaction will result in a potential loss of competition from Virgin Media as it may not be able to secure access to MVNO services’.

Main party views

14.129 EE told the CMA that it was a willing wholesaler and would remain so post-merger, given that wholesale is an important part of its business. EE said that this was consistent with BT which has historically had a strong focus on its wholesale business.

Our approach to analysis

14.130 We considered that the merged entity would have an incentive to engage in this total foreclosure strategy if the (risk adjusted) expected gains of doing so are greater than the losses, taking into account both retail and wholesale revenues.

14.131 We noted that the gains from engaging in total foreclosure depend on by how much the merged entity could, by not bidding, cause the wholesale price to be increased and/or the quality received by the fixed-MVNOs to be worsened, and how this could harm the fixed-MVNOs at the retail level.

14.132 We noted that such harm could be immediate (ie from degrading a fixed-MVNO’s retail offering in mobile) or longer-term, indirect, or ‘strategic’ harm (eg through harm to the fixed-MVNO’s broader reputation or to its incentive or ability to invest in its mobile or fixed services that compete with the

[404] TalkTalk initial submission, pp2–3.

merged entity). In either case, this would have to result in revenue gains for the merged entity that exceeded the potential wholesale revenues foregone.

14.133 All MNOs face a trade-off between the wholesale revenues gained and the risk that by serving an MVNO the MNO will help that MVNO to win retail subscribers, some of which may be at the expense of the MNO's own retail business. Pre-merger, EE is an active wholesale supplier, including of Virgin Media, which is a fixed-MVNO and competes with EE in retail mobile, and to an extent in the supply of fixed services. EE therefore evidently considers that at present it gains more from supplying Virgin Media than it would likely make by not bidding for Virgin Media's contract (with the goal of harming it downstream).

14.134 We therefore considered whether the merger would change the losses from not bidding, or the gain that could be made by harming certain rivals, relative to EE's position absent the merger.

14.135 We noted that the merger:

- would be unlikely to change the revenues from wholesale mobile (and hence the losses from not bidding);
- would not change the gain to be made by harming mobile-only MVNOs and so would be unlikely to change the merged entity's incentives to supply these MVNOs as compared to EE's incentives absent the merger;[405] and
- could increase the gain to be made by harming fixed-MVNOs, if by harming them in relation to mobile, it could expect to win both mobile and fixed revenue. This potential change in incentive results from the merged entity being a stronger supplier of fixed services than was the case for EE.[406]

14.136 We therefore attempted to undertake a quantitative analysis of the merged entity's incentives to pursue a total foreclosure strategy against fixed-MVNOs. This attempted to calculate the wholesale price rise (or equivalent quality degradation) that the merged entity would need to cause in order for a total foreclosure strategy to be profitable. We considered that if the merged entity did not have the ability to cause a price rise at this level by not bidding,

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405 As discussed above in relation to our approach to assessment.
406 We noted that, in relation to Virgin Media, the merged entity would make additional sales of wholesale broadband inputs, for any customers that, as a result of the foreclosure strategy, stopped purchasing broadband from Virgin Media (which has its own fixed network) and began purchasing from BT or other broadband providers that use BT Openreach inputs.

it would not have the incentive to withdraw. Moreover, we considered that the lower the necessary price rise, the more likely the merged entity would have the ability to cause it.

14.137 Our analysis gave us a very wide range for the estimate of the necessary price rise, with the value depending on which combination of reasonable assumptions we made. The necessary price rise was lower:

- the more prevalent that fixed-mobile bundles were assumed to be;
- the higher the proportion of customers that were assumed not to 'unbundle'[407] in response to a price rise (or quality degradation) in the mobile element; and
- the higher the proportion, of those customers lost by the fixed-MVNO that choose to continue purchasing fixed-mobile bundles, that were assumed to be recaptured by the merged entity.[408]

14.138 We therefore consider each of these uncertain factors in turn below, in order to assess whether the necessary price rise may be at the lower or higher end of the range. However, we note that the scale of price rise that the merged entity would have the ability to cause as a result of a total foreclosure strategy (and therefore whether even a lower price rise is achievable) remains unclear.

14.139 We then consider separately whether the merged entity could have other strategic incentives to pursue this foreclosure strategy.

Prevalence of customers buying fixed and mobile services from the same provider

14.140 As set out in further detail in Appendix H (Fixed-mobile bundles), very few customers in the UK currently purchase fixed and mobile services from the same provider. However, we received a wide range of evidence on the extent to which these numbers are expected to grow over time, and possible reasons for and barriers to that growth.[409]

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[407] The extent to which a customer purchasing both services from the same provider would, in response to a price rise or quality degradation in the mobile service, continue purchasing the fixed service from the same provider and switch its mobile service to another provider.
[408] The higher the recapture rates, and the less unbundling there is, the lower is the necessary wholesale price rise or quality degradation. For sufficiently low unbundling and high recapture, higher prevalence of customers buying fixed and mobile from the same provider would also reduce the necessary wholesale price rise.
[409] Further information is set out in Appendix H (Fixed-mobile bundles).

14.141 At present, [✂]% of Virgin Media's mobile customers also buy fixed services from it, and Virgin Media expects the number of these customers to [✂]. [✂] whilst TalkTalk forecast that the majority of its mobile customers will also buy fixed products from them. One motivation for BT's proposed large investment in purchasing EE is to increase opportunities for cross-selling and bundling. In combination, the forecasts of BT, Virgin Media, Sky, TalkTalk and Vodafone imply that operators are planning for and investing in substantial growth in consumer purchases of fixed and mobile products from the same provider.[410]

14.142 We received submissions that operators also expect combined and/or converged purchases by businesses to increase over time.[411]

14.143 On the other hand, there is some uncertainty over this growth, which is reflected in the submissions we received and in the internal documents of operators. For example:

- At present, mobile is largely an individual purchase and broadband a household purchase, with different triggers for purchase (for example new handsets vs house moves). This may tend to undermine the comparison some make between fixed-mobile bundles and the bundling of TV and broadband, which are both household products, in some cases delivered over the same physical line.

- Whilst Virgin Media sells fixed services [✂] its mobile customers, EE already sells, and Telefónica previously sold, both fixed and mobile, without bundles gaining substantial traction (consistent with the low proportion of customers that buy in this way today).[412]

- While in some European countries (France and Spain) a substantial proportion of households now buy fixed and mobile services from the same provider, and the merger of BT and EE would create a large vertically-integrated operator (as have driven uptake in those countries), there are other countries where uptake of combined purchases remains low.

- Heavy discounting was a driver of take-up in France and Spain, whilst the evidence suggests that for most operators in the UK neither their existing profits nor the possible cost savings associated with bundling

[410] See further Appendix H.
[411] See further Appendix H.
[412] See further Appendix H.

would provide substantial incentives for big discounts. This is reflected in the limited discounts for bundling that are seen at present in the UK, which do not generally imply mobile prices that are significantly cheaper than those available on a stand-alone basis from other mobile operators.[413]

- Bundling fixed and mobile services may in principle allow for product innovations, particularly for business customers, but for consumers we have not seen strong evidence of attractive new propositions that may be facilitated by fixed-mobile bundles.[414]

14.144 We therefore concluded that the number of customers buying fixed and mobile products from the same provider may increase over time, but that there was uncertainty over the likelihood, speed and extent of the increase.

The extent of unbundling

14.145 We have set out above that a substantial proportion of fixed-MVNOs' (potential) mobile customers may in future buy or consider buying fixed products from them as well. However, for this change of behaviour to affect our assessment of incentives, customers that are buying or considering buying both products from the fixed-MVNO would also need to respond to an increase in the price of the mobile component[415] by becoming less likely to buy both the mobile component *and* the fixed components. If customers are simply purchasing a mobile service from their fixed provider because they have a preference for that provider's mobile offer, and their fixed purchase has very little effect on that decision (and vice versa), then there will be no merger effect on incentives.

14.146 We have no evidence on how customers that currently buy fixed and mobile services from the same supplier respond to an increase in the combined price of those services, or in the price of the mobile element. [✂]; [✂].

14.147 Therefore, in light of the limited evidence of customer behaviour in relation to fixed-mobile bundles, we considered the different types of factors that might inform how a customer would respond to an increase in price for its fixed-mobile bundle. Specifically, in the scenario under consideration (ie where the merged entity has chosen to foreclose fixed-MVNOs), the relevant question

413 See further Appendix H.
414 See further Appendix H.
415 While a customer that was buying a 'hard' bundle may not explicitly see a price rise in the mobile component, this would be visible, particularly to new customers, when comparing the price of bundled with unbundled offers. For customers buying 'soft' bundles, where each product is priced separately, the price rise would visibly be on the mobile component.

is whether, in response to an increase in the price of their first choice of purchases (which is a bundle) a customer would:

- switch to an alternative supplier of fixed-mobile bundles; or
- ‘unbundle’, meaning that their choice of providers includes all four large MNOs (plus MVNOs) and all four large broadband providers (plus smaller providers in some areas). This could mean switching only the mobile component of their purchase.

14.148 For those customers that purchase a fixed-mobile bundle in future, we identified three potential elements that would inform their decision (in response to a price rise in the mobile element) on whether or not to unbundle:

- their preference for a particular fixed provider (perhaps because of a preference for Sky Sports or Virgin Media SFBB);
- their preference for the cheapest price; and
- their preference for non-price aspects of a bundle.

14.149 Customers with strong preferences for a particular fixed provider would be likely to unbundle because they would respond to a price increase of their mobile component by staying with their fixed supplier for fixed services and only switching the mobile component. If this is a very substantial proportion of customers, it would make foreclosure unlikely to be profitable since the potential gain by the merged entity would be limited to customers switching their mobile component (and, as would be the case absent the merger, these customers would have a choice of multiple alternative providers).

14.150 There is evidence to suggest that at present fixed-MVNOs are differentiated in relation to their fixed offering:

- Based on its churn data, Virgin Media appears to be differentiated from BT, [✄][416]
- [✄]. Sky has a market share of around [✄] in pay TV – a more strongly differentiated product than mobile that is already frequently bundled with broadband – which may therefore be expected to remain a strong influence on purchases.

416 See Appendix I.

- Third parties told the CMA that it is easier to cross-sell mobile products to fixed customers than vice versa. We also received some evidence to suggest that bundling has the effect of reducing churn for fixed products, but less so for mobile products.[417] This would tend to reinforce the difficulty of encouraging a customer to move their fixed provider in response to an increase in the cost of the mobile service they provide.

14.151 Customers with strong preferences for the cheapest price may keep their bundle together if the remaining available bundles are cheaper than unbundling and purchasing the fixed and mobile services separately. However, as set out earlier and in Appendix H, we have not seen strong evidence that this is likely to be the case. Moreover, customers' decisions may also be influenced by switching costs, which we would expect to be higher in relation to the more products that are switched. Given the evidence that price differentiation may not be strong, we therefore considered whether and why other aspects could lead customers to prefer bundles.

14.152 While we received mixed evidence on this issue (as set out in Appendix H) it is possible that in relation to non-price factors, customers have a preference for *not* buying bundles (for example, because they buy fixed services as a household but prefer to choose mobile services individually). In that case, even if the remaining available bundles are cheaper than unbundled offers, they may not be preferred by switching customers.

14.153 In relation to converged fixed-mobile products (ie new services that are made possible by bringing the two together), these appear to be growing in importance for business customers. However, as set out in Chapter 11 other products such as IT services are also important for businesses' choice of provider. We think that this will tend to encourage unbundling in response to an increase in the price of the mobile element of a bundle, although its importance will vary by sector. For consumers, as noted earlier, we have not heard of compelling converged fixed-mobile service offerings.[418]

14.154 The extent of unbundling may also be affected by whether there are contractual or administrative hurdles to doing so. However, [✂].[419]

14.155 We therefore concluded that there were a number of factors which would lead to some customers unbundling a fixed-mobile bundle in response to an increase in the price of the mobile element. It is therefore not clear that the proportion of customers that would switch their fixed services in response to

[417] See Appendix H.
[418] See Appendix H.
[419] See Appendix H.

an increase in the price of their mobile services would be sufficient to make the strategy profitable.

Recapture among those that choose not to unbundle

14.156 Even if a large proportion of customers responded by switching fixed and mobile services to another supplier, the merged entity would not necessarily capture a sufficient proportion of those customers to make the strategy profitable.

14.157 We do not have current evidence on where people that buy fixed and mobile services from the same supplier go to when they leave their provider. Since the mobile offers of BT and Sky are new or not yet launched, such data would in any event not be very informative about possible future switching behaviour.

14.158 As set out in Appendix H we received a range of submissions on the likely proportion of customers, among those leaving (or failing to join) a foreclosed fixed-MVNO and choosing to keep their bundles together, that could be recaptured by the merged entity. We considered that this recapture rate would depend partly on how many providers of bundles would not be foreclosed since they would dilute the numbers of customers diverting to the merged entity.

- *Providers of fixed-mobile bundles that would not be foreclosed*

14.159 Given that the fixed-MVNOs currently have wholesale mobile contracts, the earliest that a foreclosure strategy could affect them would be either when their contract comes up for review or renewal. In this respect, we note that Virgin Media's contract with EE ends [✂], [✂] [✂]. Therefore, for the period that a fixed-MVNO remains in a contract it negotiated and signed pre-merger, it will not be affected by a total foreclosure strategy and will remain as an alternative option for diverting customers from other fixed-mobile bundles.

14.160 Aside from EE, there are also three MNOs that do not rely on wholesale mobile services and so could not be foreclosed by the merged entity in respect of this input. Below, we discuss their possible position in relation to the supply of fixed-mobile bundles, [✂].

- *Vodafone*

14.161 Vodafone has firm plans to enter the consumer fixed services markets UK-wide. It has launched consumer broadband and SFBB services, and plans to launch TV next year [✂]. For business customers, the parties' strongest competitor is already Vodafone, which also offers fixed products, and has a [✂]% share in business mobile.

14.162 Vodafone owns a fixed network in order to provide connectivity to enterprise customers. Separately, Vodafone is using Openreach's VULA product to provide SFBB to consumers. Vodafone plans to have access to 86% of the UK population using Openreach's VULA product next year. This is comparable to Sky and TalkTalk.[420]

14.163 [✂] Comparing its bundle forecast with other operators suggests a forecast share of supply of bundles of 10% in 2019.[421] We might expect it to capture a higher proportion of customers than this, in a scenario where other providers of both fixed and mobile are foreclosed.

14.164 As noted in our assessment of ability, if fixed-mobile bundles become important and begin to affect retail competition for mobile services, Vodafone may, given its [✂], also have an incentive to serve one or more fixed-MVNOs (at least in the medium term), in order to improve its access to that segment of customers that has a preference for buying fixed and mobile from the same operator.

- *Telefónica and H3G*

14.165 Telefónica has recently signed wholesale contracts with Sky and TalkTalk which will allow it to profit from sales to consumers that buy fixed-mobile bundles from these operators. It offers fixed services to businesses in its own right, and has a share of around [✂]% in business mobile.

14.166 H3G is not currently present in fixed services itself, and serves [✂].[422]

14.167 However, as noted in our assessment of ability, in a scenario where a high proportion of people wished to purchase fixed and mobile services from the same supplier, and in response to a price rise would rather purchase a bundle than unbundle, Telefónica and H3G would both have strong incentives to provide services that allowed them to earn wholesale or retail revenues from customers of this type. A failure to do so would involve foregoing substantial amounts of revenue.

14.168 In such a scenario, Telefónica and/or H3G could potentially choose to provide fixed services directly (perhaps through a merger with an existing

[420] Ofcom (2014), *Review of the wholesale broadband access markets*, Table a.6.2.
[421] See Appendix H.
[422] https://www.aql.com/about/

fixed operator, or by buying fixed line inputs on regulated terms from BT as many other CPs do), or by wholesaling mobile services to one or more fixed-MVNOs, as Telefónica is already doing.

14.169 Based on the above, we concluded that it is probable that, in a scenario in which the merged entity aimed to foreclose rival fixed-MVNOs, it would continue to face multiple competitors that could offer customers both fixed and mobile services. This will tend to reduce the proportion of fixed-mobile customers that the merged entity could recapture through following a foreclosure strategy, and hence reduce its incentive to do so.

Strategic incentives

14.170 We also considered whether there could be longer-term gains for the merged entity by adopting a total foreclosure strategy, for example by damaging the fixed-MVNO's brand or reputation or its ability or incentives to invest in its services.

14.171 Third parties submitted that in considering whether to foreclose fixed-MVNOs, BT would not only take into account short term losses and gains, but also medium-term 'strategic' benefits. For example, [✂].

14.172 We therefore considered whether the merged entity could adopt a strategy in which the benefits, in terms of gained retail customers of mobile and fixed-mobile bundles (discussed above), may not be sufficient to outweigh the costs of foregone wholesale revenue, but where the merged entity expects that there will also be further knock-on effects in the long term which tip the balance of losses and gains in order to make foreclosure profitable overall. We can think about this by analogy with predation, in which an operator makes short term losses in order to weaken its rivals, with the expectation that it will be able to recoup those losses in the long run.

14.173 If bundling becomes important, then fixed-MVNOs may wish to be able to advertise themselves as quad-play providers, perhaps to show they are at the cutting edge. Thus, preventing a fixed-MVNO from offering mobile could cause harm to its brand more widely. However, we found above that it was unlikely that EE's refusal to offer wholesale mobile services to a fixed-MVNO would prevent it from finding an alternative supplier, even if it affected the terms of supply. Even if the quality of the mobile offering suffered, each of the fixed-MVNOs have particular strengths and differentiators – in particular, for Sky, its pay TV service and for Virgin Media its broadband service. We would not expect mobile to be a key differentiator for any of them even in the counterfactual. Therefore, we thought that the extent of brand or reputation damage would be limited.

14.174 As to damaging investment in other services, we note that in the case of TalkTalk and Virgin Media, mobile revenue constitutes between [✂] of the companies' total revenue ([✂]). While it has not been possible to assess the constituent profit levels of mobile services alone, our review of mobile margins (see [✂]) supports the case that the mobile business is not likely to have contributed more than [✂]% of the fixed-MVNOs' operating profits. Therefore even if the merged entity can render MVNOs' mobile services less profitable, we would not expect this to have a large effect on the ability to finance investments in other aspects of their services.

14.175 For these reasons, and considering the greater degree of uncertainty that would be attached to such an indirect strategy, we considered that any additional merger-related incentive to engage in such a long-term strategy is likely to be limited.

14.176 Separately, we also note that BT has indicated to its shareholders that as a result of the acquisition it expects to increase earnings per share in the second year post-merger. We considered that BT's management might be less willing to engage in a long-term strategy if it undermined this pre-merger guidance. In this regard, we note that the Virgin Media contract generates [✂] a year for EE, which would be around [✂]% of BT and EE's combined EBITDA for 2014.[423,424]

Incentive – provisional conclusion

14.177 As set out in our assessment of ability, by engaging in total foreclosure, we do not consider it likely that EE could cause MVNOs not to gain a contract, but it may be able to cause them to receive worse terms. We recognised that the scale of any price rise (or quality degradation) in several years' time was uncertain and that this was an important feature in assessing whether a total foreclosure strategy would be profitable to the merged entity.

14.178 We observed that the price rise necessary to make such a strategy profitable would be lower if:

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[423] BT's EBITDA: £6,271 million (y/e 31 March 2015) see BT Group plc Annual Report and Form 20-F 2015, p7; EE's EBIDTA: £1,589 million (y/e 31 December 2014) EE adjusted EBITDA see BT Circular, p5.

[424] We recognise that the absence of a contribution from this contract may be within the safety margin that BT would have built in to its publicly announced guidance for the financial effects of the transaction, particularly as BT could not be certain that Virgin Media would be prepared to renew its contract. On the other hand, BT's historical earnings growth has been low, suggesting that figures of this magnitude may be important for BT. See BT Group Annual Report 2015, p79. Reported EPS growth in FY2014 was 4% and reported EPS grew 3% in FY 2015.

- fixed-mobile bundles become prevalent;
- mobile services become a major driver of customers' choice of fixed service provider (eg customers buying fixed-bundles do not unbundle to a large extent in response to a price rise or quality degradation in the mobile element);[425] and
- the merged entity can recapture a high proportion of those customers lost by the fixed-MVNO that chooses to continue purchasing fixed-mobile bundles.

14.179 As we have discussed above, these issues are necessarily speculative because of the nascent state of the supply of fixed-mobile bundles in the UK. However, our assessment suggests that there are many reasons to believe that one or more of the above factors will not arise. In particular, we considered that:

- There is considerable uncertainty over the likely future extent to which customers will buy fixed and mobile services from the same provider.
- There is even greater uncertainty over the proportion of customers for whom the offer of mobile services is likely to affect their choice of provider of fixed services (as opposed to simply buying mobile from their fixed operator). The evidence we have seen suggests that fixed providers are cross-selling mobile to their existing customers, rather than using mobile to attract new customers.
- Even with EE's exit, all the fixed-MVNOs would be able to get wholesale contracts, meaning that they would be present in the downstream, providing bundles. Each fixed-MVNO forecasts a substantial share of supply in fixed-mobile bundles, and their combined presence will tend to reduce the proportion of customers that the merged entity would recapture.

14.180 We considered that, even if the merged entity considered that the gains may exceed the losses, it would in addition take into account the different risks associated with the alternative strategies of bidding and not bidding: a gain, with moderate probability, from winning a wholesale contract, set against a foreclosure strategy with uncertain effects on the targeted MVNOs and on

[425] The extent to which a customer purchasing both services from the same provider would, in response to a price rise or quality degradation in the mobile service, continue purchasing the fixed service from the same provider and switch its mobile service to another provider.

retail customers downstream. We considered that this would tend to discourage the merged entity from pursuing such a strategy.

14.181 In light of the above, and in particular given the many uncertain factors influencing BT/EE's incentives and around the extent of BT/EE's ability to foreclose (and thus its potential gain from foreclosure), we provisionally concluded that it was not more likely than not that BT/EE would have an incentive to engage in a total foreclosure strategy.

Provisional conclusion on total foreclosure

14.182 We have noted above that there is significant uncertainty about a number of future developments which are required to occur for the merger to create or enhance the merged entity's ability and incentive to engage in a strategy or total foreclosure against fixed-MVNOs. Such a finding would necessarily be based on considerable speculation. Moreover, we noted there were strong arguments against the likelihood of many of those future developments occurring.

14.183 Considering this, we are provisionally not satisfied that it is more likely than not that the merger will create or enhance the merged entity's ability and incentive to foreclose. Given this provisional conclusion, we did not need to consider the effects on competition of total foreclosure. Nevertheless the concerns around future uncertainties outlined above apply equally to an assessment of the effects of such a strategy.

14.184 We now set out our assessment of a partial foreclosure strategy.

Partial foreclosure

Overview

14.185 We then considered whether the merger was likely to degrade the wholesale terms of fixed-MVNOs through partial foreclosure. This could occur where the merged entity continues to supply some or all customers, but at higher prices, lower quality, and/or under less favourable conditions.

14.186 Specifically, we considered that partial foreclosure in relation to the supply of wholesale mobile services to fixed-MVNOs could consist of conduct in relation to future bids, conduct within an existing contract (eg through EE's contract with Virgin Media) or conduct within future contracts that the merged entity may enter into.

14.187 Consistent with the framework set out in Chapter 9, we considered whether the merged entity would have the ability and incentive to engage in such a strategy (and, if these were created or enhanced by the merger, what effects this could have). We looked at this in the context where, according to our provisional finding on total foreclosure, the merged entity is likely to want to supply wholesale mobile services to fixed-MVNOs in the long term.

14.188 We considered that partial foreclosure could (depending on the protection offered by contracts) occur through:

- charging higher variable and fixed rate charges (or the introduction of new rate elements) for wholesale mobile services than it would otherwise have done;
- a reduction in the quality of wholesale mobile services or slower responses in the merged entity's efforts to resolve service quality issues;
- decreased technical support offered to MVNOs (eg with regard to their plans to transition from light to full MVNO models); and
- the withholding or delay of access to particular types of services (eg 4G services) and/or innovations in wholesale mobile services.[426]

14.189 In the remainder of this section we assess:

[426] We note the possibility that some service may be so important that withholding it would amount to total foreclosure. Ultimately we apply the same test, that is, whether the merged entity would have the ability and incentive to engage in a specific foreclosure strategy. To the extent the withholding of an important service could be characterised as total foreclosure, for the reasons set out above, we do not consider that the merger would be more likely than not to lead to this occurring.

- whether the merged entity might still bid for MVNO contracts, but submit worse bids than it would have done absent the merger (paragraphs 14.190 to 14.195);
- the possibility of foreclosure of Virgin Media under its current contract with EE. This takes account of EE's obligations under that contract (paragraphs 14.196 to 14.265); and
- the possibility of foreclosure within contracts that EE may in future enter into for the supply of wholesale mobile services (paragraphs 14.266 to 14.274).[427]

Partial foreclosure by bidding weakly for new or renewed contracts

14.190 We considered whether the merged entity might submit weaker bids at future contracting opportunities than it would have done absent the merger. We noted that this could include signalling its intentions to other MNOs in the hope of encouraging other MNOs to also offer less competitive terms.

14.191 We considered that, in a strategy of bidding weakly for new or renewed contracts, the merged entity's intention would be to either:

- win the contract, but by offering less competitive terms than EE would have otherwise done absent the merger; or
- not win the contract but, by bidding weakly, cause harm to the fixed-MVNO, because the EE bid is weaker and other MNOs may also bid more weakly if they perceive less competitive pressure from the merged entity than absent the merger from EE.

14.192 In relation to the first scenario, we considered that absent the merger EE's bidding strategy for contracts that it wanted to win would be designed to balance the chance of winning against the terms it has to offer. This suggests that if the merged entity was to degrade its offering, relative to what EE would have offered absent the merger, it would be less likely to win the contract. We considered that this made it unlikely that the merger would lead to the merged entity bidding weakly in the hope of winning.

14.193 In relation to the second scenario, we considered that the merged entity would weigh up the costs and benefits of not winning the contract by bidding weakly compared to not winning the contract by not bidding at all. The costs,

[427] This includes any future agreement with the merged entity that Virgin Media may enter into, and any future agreement that other fixed-MVNOs such as TalkTalk and Sky may enter into. We cannot know what obligations would apply to EE under any such hypothetical agreements to be negotiated several years in the future.

in terms of lost wholesale revenue, would be the same in both cases. The benefits would flow from how much it could reduce the competitive pressure on other MNOs, so that they offer worse terms and harm the fixed-MVNOs. We considered that the harm would be greater if it refused to bid (ie total foreclosure) than if it pursued a strategy of weak bidding, and therefore even if, contrary to our provisional view on total foreclosure, it did have an incentive to harm the fixed-MVNO, it would not do so by bidding weakly.

14.194 We therefore provisionally concluded that the merger was unlikely to lead to the merged entity bidding more weakly than it would have absent the merger.

14.195 However, we also considered a further possibility, that the merged firm could bid to win (ie as competitively as EE would have done absent the merger) but subsequently try to harm the fixed-MVNO within the contract. We consider this possibility in the final part of this section (paragraphs 14.266 to 14.274).

Partial foreclosure of Virgin Media under its current contract with EE

14.196 We then considered the possibility of foreclosure of Virgin Media under its current contract with EE (taking into account EE’s contractual obligations).

14.197 In August 2013, EE and Virgin Media entered into an MVNO hosting agreement which has an initial term of [✂], which runs until [✂].

14.198 Virgin Media has submitted a number of concerns relating to partial foreclosure within this contract, which we assess below.

Ability

14.199 Virgin Media has submitted that certain terms of its MVNO hosting agreement would not protect it from a partial foreclosure strategy. It pointed to several ways in which the merged entity could harm Virgin Media without breaching the MVNO hosting agreement. It also said that [✂]. In summary, Virgin Media’s concerns are:

- hindering Virgin Media’s transition to full MVNO – [✂];
- hindering the launch of 4G services –[✂];
- degradation of service – [✂]
- lack of cooperation on issues not [✂] in the contract – [✂].

14.200 Virgin Media's concern was therefore that EE already has the ability to harm it, and that the merger will create or strengthen the incentive to do so.

14.201 Below we discuss these concerns in the context of whether the merged entity could have an ability to foreclose Virgin Media post-merger. We will take the third and fourth concern together as a similar analysis applies to both. Further detail and evidence is presented in Appendix J.

- *Transition to full MVNO*

14.202 We note that becoming a full MVNO brings various benefits to Virgin Media, including making it easier to switch between MNO hosts (avoiding the need for a SIM swap out, for example, which tends to result in substantial churn) and giving it more freedom to launch new tariffs or introduce new features. [✂].

14.203 Virgin Media alleged that EE could significantly delay its transition to becoming a full MVNO. [✂]:

- [✂][428][✂] [✂]. [✂]

- [✂]

14.204 [✂]

14.205 [✂]

14.206 The parties submitted that the agreement nullifies any ability of the merged entity to [✂].

14.207 The parties also maintained that the merged entity will be subject to the same contractual obligations as EE is subject to today [✂].

14.208 We considered that it may be difficult for light MVNOs to migrate to a full MVNO model, as this requires the cooperation of the existing MNO host in addition to the skills to manage the network aspects of operating as a full MVNO. Given that light MVNOs likely face higher switching costs than full MVNOs,[429] if the merged entity were to reduce cooperation during the transition period, [✂].

14.209 We have looked in detail at EE's and Virgin Media's accounts of the history of the latter's transition to a full MVNO model. It is not necessary for us to a

[428] See Appendix J for a more detailed description of the issues involved in switching host network as a light or full MVNO.
[429] Ofcom phase 2 submission, paragraph 4.29.

form a view on the reasons for the delays to date. Ultimately, we consider that the ability of the merged entity to delay this transition will depend on [✂].

14.210 [✂]

- *Hindering the launch of 4G services*

14.211 Virgin Media submitted that its mobile customers require confidence in its mobile network coverage and reliability, as well as its ability to offer attractive 4G offers, in order for Virgin Media to be seen as a credible alternative to the MNOs. It said that this reinforces the need for MVNO arrangements which enable the provision of 4G services on a commercially viable and competitive basis. Virgin Media submitted that the combination of spectrum of EE and BT will enable EE to differentiate itself further from Virgin Media in terms of the quality and coverage of its 4G networks; and that this will allow it to attract customers that might otherwise be served by Virgin Media (and other operators), thereby reducing the merged entity's incentive to enable Virgin Media to offer 4G services.

14.212 [✂].

14.213 [✂].

14.214 The parties said that [✂].[430] [✂].[431] [✂].[432]

14.215 We compared Virgin Media's [✂] with those negotiated by other MVNOs. This showed that [✂]. We note that even absent the merger, EE might have limited incentive to renegotiate rates or speeds within contract.

14.216 In our provisional view, [✂]. Therefore, we have not seen evidence that EE is directly hindering, or that the merged entity would be able to hinder, [✂]. [✂]

- *Degradation of service/lack of cooperation*

14.217 Virgin Media submitted that [✂].

14.218 [✂].

[430] Parties' response to the issues statement, paragraph 8.2(a).
[431] Virgin Media phase 2 hearing summary.
[432] Parties' response to the issues statement, paragraph 8.2(a).

14.219 [✂].

14.220 Virgin Media gave a number of examples of [✂]. For example:[433]

- [✂]
- [✂]
- [✂]
- [✂]

14.221 The parties submitted that [✂].[434] [✂].[435]

14.222 [✂].[436] [✂].[437]

14.223 Finally, the parties said [✂].[438] [✂]

14.224 [✂], Virgin Media is protected from the degradation of service to a certain degree by its MVNO hosting agreement. For example, [✂]. In addition, [✂]. On the other hand, we consider that a contract may not always provide sufficient protection, and Virgin Media has submitted a number of examples of [✂].

- *Provisional conclusions on ability*

14.225 As set out above, we considered whether the merged entity could have the ability to harm Virgin Media under its current contract either by delaying its transition to full MVNO, hindering its launch of 4G services or otherwise degrading its service or not cooperating in some other way.

14.226 We provisionally conclude that:

- EE has, and the merged entity would have, the ability to harm Virgin Media through a delay to its transition to full MVNO;[439] and

[433] These are described in more detail in Appendix J.
[434] Parties' response to the issues statement, paragraph 8.4(e).
[435] Parties' response to the issues statement.
[436] Parties' response to the issues statement, paragraph 8.4(c).
[437] Parties' response to the issues statement, paragraph 8.4(f).
[438] Parties' response to the issues statement, paragraph 8.4(g).
[439] We note Virgin Media's submission that any delay in its transition to full MVNO status will also affect [✂]. However, we also note that the terms on [✂] were negotiated pre-merger and cannot be affected by the merged entity for the remainder of the contract. We do not therefore consider that the merged entity would have the ability to foreclose Virgin Media's [✂] although we consider this potential knock-on impact as part of our finding of ability to delay transition to full MVNO.

- EE has, and the merged entity may have, some ability to degrade Virgin Media's quality of service, although the extent of this ability (given the provisions of the contract) is unclear.

14.227 The issues and evidence discussed above illustrate that contracts do not cover every eventuality and do not negate the merged entity's ability to harm Virgin Media under its current contract. Set against that, the threat of switching to a different MNO supplier at the end of the agreement may be important for Virgin Media's ability to ensure it receives the quality and service it requires, if the merged entity wishes to retain Virgin Media as a customer at that point (as discussed above).

14.228 We therefore consider that the merged entity may have some ability to harm Virgin Media in contract but that the scale of the potential harm is uncertain. To the extent that ability is present pre-merger, the merger does not appear to affect that ability. We have therefore considered incentives.

Incentives

14.229 We assessed EE's incentives absent the merger, and the merged entity's incentives, to foreclose Virgin Media under its current contract. The framework for this analysis is similar to that for total foreclosure, which we discussed in the previous section.

14.230 Absent the merger, EE may have some incentives to harm Virgin Media under its contract, especially if the short-term costs of doing so are low, given that EE competes with Virgin Media downstream.

14.231 We therefore considered whether EE would wish to support Virgin Media's continued expansion and development in retail mobile services given that it may be the case that the stronger Virgin Media becomes the more likely it would be that Virgin Media would win a greater number of customers from EE.

14.232 In the short term (ie within contract), we consider that EE's incentives would depend on how close a competitor Virgin Media is to EE: the more customers Virgin Media has, the higher the wholesale revenue EE will earn, and the lower the retail revenue. As such:

- if they are close competitors, the retail effect would be more important to EE, and it would wish to harm Virgin Media; and
- if not, the wholesale effect would be more important to EE, and it would not wish to harm Virgin Media.

14.233 We note that EE also offers fixed line services and so, if fixed-mobile bundles come to be important, the two could compete in both bundles and stand-alone services (albeit EE's share of fixed line services is currently small).

14.234 If the merged entity is not incentivised to help Virgin Media on these short-term grounds, then aside from contractual protections, it may still be incentivised to do so if it wishes to win future MVNO contracts. Clearly, harming Virgin Media within contract would reduce its chance of winning the next contract with Virgin Media. It could also affect its reputation and thus its chances of winning contracts with other MVNOs.

14.235 We therefore consider the merged entity's incentives to engage in two different types of harm. The first is hindering Virgin Media's transition to full MVNO status, [✄]; and the second is diminishing Virgin Media's service offering through degradation in the quality of wholesale mobile services provided to Virgin Media 'within contract', or delay or refusal to provide additional services that would improve the quality of Virgin Media's offering (including being able to offer 4G).

- *Incentives to hinder Virgin Media's transition to full MVNO status*

14.236 One of the important benefits of being a full MVNO is that it makes it significantly easier to change network partner (partly because a light MVNO will need to carry out a SIM swap, which is costly and tends to lead to customer churn, whereas a full MVNO will not; and partly because the full MVNO will operate its own billing systems and avoid a systems handover).

14.237 Absent the merger, EE could gain by obstructing Virgin Media's transition: doing so would cause Virgin Media's switching costs to be higher and so increase EE's chance of retaining it as a customer in the future. Set against that, if EE wishes to retain Virgin Media as a customer and there are alternative MNO hosts, reneging on the spirit of a contract to support the transition may make EE a less attractive host to Virgin Media (and also to other MVNOs).

14.238 The parties told us that [✄]. However, given that [✄].

14.239 On the one hand, [✄]. On the other, [✄]. We have not been able to conclude on whether [✄].

14.240 We therefore consider that there are at least two possible scenarios:

- If, pre-merger, EE already has an incentive to obstruct Virgin Media's transition, then there may be no merger-specific effect on incentives.

- If, pre-merger, EE does not [✄] an incentive to obstruct transition ([✄]), the merger could change the merged entity's incentives.

14.241 We consider each of these scenarios as part of our provisional conclusion on incentives below.

14.242 We then assess how the merger might change the merged entity's incentives (relative to EE's pre-merger), in the broader context of the quality of Virgin Media's mobile services.

- *Incentives to degrade (or not upgrade) the quality of Virgin Media's mobile services*

14.243 Post-merger, the gains to the merged entity from harming Virgin Media may increase. This is primarily because if the merged entity is able to cause Virgin Media to lose some mobile customers who also take fixed services, and those customers switch to other suppliers for their fixed services too, its gain would include:

- extra retail margin on customers who switch their mobile service to the merged entity (this gain applies absent the merger, although it may be slightly greater from the addition of BT mobile services to EE's own);
- extra wholesale margin on all customers who switch their fixed line services from Virgin Media to CPs using BT inputs (this gain arises due to the merger); and
- extra retail margin on all customers who switch fixed services to the merged entity (this gain may exist absent the merger but is likely to be greater post-merger due to the addition of BT's fixed lines services to EE's own).

14.244 The merger may also give the merged entity incentives to harm Virgin Media in other ways. If the merged entity can damage Virgin Media's reputation in some way by harming its mobile service, and if that in turn affects customers' perception of Virgin Media's fixed line services, then the merged entity might wish to harm Virgin Media's mobile services in hope of winning fixed line customers from Virgin Media even without bundling. Again, the important question here is to what extent mobile in some way influences customers' choice of fixed service provider.

14.245 Therefore, the effects of the merger on incentives will likely be greater the more important that fixed-mobile bundles become, and the more that mobile services come to drive a customer's choice of their fixed services supplier. There is a close parallel with total foreclosure. It is not necessarily the case that if the merged entity has an incentive for total foreclosure, it will for partial foreclosure, or vice versa. This is because the costs of different foreclosure strategies will differ. But the factors that determine the size of the merger effect are the same for total and partial foreclosure.

14.246 We also considered whether harm to Virgin Media's mobile operations might reduce its ability to investment in other services. In FY2014, mobile revenue accounted for 11.4% of Virgin Media's total revenue. Virgin Media is investing £3 billion in 'Project Lightning', the expansion of its cable footprint. Mobile revenues were less than £0.5 billion in FY2014, and we estimated that mobile profits made up a modest proportion of group profits. Therefore, we thought it unlikely that the loss of some mobile subscribers would significantly affect Virgin Media's investments in other services.

14.247 As noted above, any incentive to foreclose may be lessened if either:

- EE wishes to retain Virgin Media as a wholesale customer after the current contract; and/or

- if such an action could make it less attractive to other MVNOs that it wishes to supply.

14.248 If the merged entity wishes to do so, then this could override any change of incentives described in the two previous paragraphs.

14.249 However, it is also possible that EE might wish to retain Virgin Media as a customer while the merged entity would not, in which case this is another possible source of change in incentive. We note that damaging Virgin Media under its current contract could have long-term effects on the merged entity's reputation as a wholesaler, which it would have to set against the gains from foreclosing, which are relatively speculative since they depend in large part on the development of fixed-mobile bundling.

- *Provisional conclusions on incentive*

14.250 As set out above, there are significant uncertainties as to whether EE has the incentive absent the merger to partially foreclose Virgin Media and, related to that, the extent to which post-merger the merged entity would have a greater incentive to do so.

14.251 If absent the merger EE has an incentive to partially foreclose Virgin Media and Virgin Media has such limited alternative options that it would prefer to remain with the merged entity despite this, then the merged entity would have an incentive to weaken it to the same or greater extent. If Virgin Media has other strong options, then the merged entity may still have an incentive to handicap Virgin Media's transition to a full MVNO, since that transition would make it easier for Virgin Media to switch to an alternative network, and thus weaken EE's bargaining position at contract renewal. If EE already has such incentives, then the merger is unlikely to significantly alter its behaviour towards Virgin Media.

14.252 On the other hand, if EE does not have such an incentive absent the merger, then it is possible that the merger could create it. The merged entity's incentives are likely to be very different from EE's, as it will consider fixed-MVNOs to be its close competitors. Therefore we considered the way in which the merged entity's incentives would differ from EE's.

14.253 As with total foreclosure, and for the same reasons, the merger is likely to significantly increase its incentives to harm Virgin Media only if fixed-mobile bundles become a significant part of consumer demand and mobile services become a significant determinant of consumers' choice of fixed and pay TV service provider.[440] These issues are necessarily speculative because of the nascent state of fixed-mobile bundles in the UK (as discussed above). We also note that the short-term costs of foreclosure may be relatively predictable to the merged entity, and the costs to its reputation as an MVNO host may be long-lived, whereas the gains (in terms of bundling effects) are likely more speculative.

14.254 Therefore, we consider it possible that the merger may increase the merged entity's incentives to partially foreclose Virgin Media during its current contract although there are significant uncertainties in this regard. We therefore consider the potential effects of this strategy.

Effects

14.255 In Chapter 11 we examined retail mobile services. We found that there is strong competition between the four MNOs. We thought it unlikely that BT would offer a significant additional constraint in the retail mobile market. In relation to our current assessment, we considered that for the same reasons, and especially due to its lack of 'owner economics', it was unlikely that Virgin Media would impose a significant additional constraint on other mobile operators. Therefore, any foreclosure strategy that could harm Virgin Media could do so without causing significant harm to competition in stand-alone retail mobile services.

[440] As noted in paragraph 14.245, the merged entity's incentives are not necessarily the same for total foreclosure and partial foreclosure. However, we believe the way in which the merger changes its incentives should be similar for both strategies.

14.256 If fixed-mobile bundles become important in the UK, and especially if mobile becomes an important driver of consumers' choice of supplier of fixed services, then Virgin Media could be a more important mobile player due to its strong pay TV and, especially, broadband services. In that scenario foreclosure of Virgin Media within contract could have an effect on competition in the supply of these services.

14.257 However, the scope of such effects could be time-limited, depending on the exact nature of the foreclosure. Most effects would only apply within the current contract, and Virgin Media would be able to migrate to a new host in [✄]. Although Virgin Media could lose some actual or potential customers as a result of partial foreclosure,[441] we have no reason to think that most effects would persist beyond that migration. This suggests that there is a limited window in which Virgin Media could be foreclosed (although harm to Virgin Media in such a period may cause it to be a slightly weaker competitor for some period thereafter).

14.258 One exception might be if the merged entity prevents Virgin Media from converting to a full MVNO and is able in doing so to 'lock in' Virgin Media for a further term, or causes Virgin Media to shut down its mobile services completely. However, these seem to us an unlikely consequence of the merger, for the following reasons:

- It is possible that Virgin Media would fail to complete its transition even absent the merger.

- The main difficulty for Virgin Media in switching to a new host as a thin MVNO is that a SIM swap would be required, which is likely to result in churn. However, Virgin Media will require a SIM swap to achieve transition anyway. Therefore this alone should not be a deterrent to switching (although it may increase the cost of doing so, and the timing may increase the risk). [✄].

- The scale of customer loss that Virgin Media has forecast even in a scenario where it has to change MNO host at relatively short notice is not sufficient to suggest that the mobile business would no longer be viable [✄] (see Appendix J).

14.259 In the worst case scenario (ie bundles become prevalent and an important driver of choice of fixed services), consumers would still have a choice of a number of alternative providers of fixed-mobile bundles (including TalkTalk, Vodafone, the merged entity, in the near future Sky and any other MNOs

[441] [✄]. See Appendix J.

that develop a fixed offering) and from suppliers of the services on a stand-alone basis (eg suppliers of mobile services, including all MNOs and MVNOs; and suppliers of fixed services, including Sky, TalkTalk and Virgin Media).

14.260 Given this level of residual competition, we considered it unlikely that, even if Virgin Media was partially foreclosed, this would lead to substantially less competition at the retail level.

14.261 Moreover, we consider it unlikely that a partial foreclosure strategy would lead to Virgin Media exiting the market given that it can switch to an alternative MNO at contract renewal (although as a light MVNO this could result in the loss of some customers during transition). Therefore, even if there are effects downstream as a result of partial foreclosure, these will be largely time limited. For these reasons, we do not conclude that any effects at the retail level would be substantial.

Provisional conclusion on foreclosure of Virgin Media under its current contract

14.262 The evidence considered above suggests that EE may already possess some ability to degrade the quality of wholesale mobile services provided to Virgin Media and delay Virgin Media's transition to a full MVNO. This ability would similarly exist post-merger.

14.263 We considered whether the merged entity would have a greater incentive, post-merger, to foreclose Virgin Media. We thought there were two important factors:

- First, if it wished to retain Virgin Media as a customer at the end of the current contract (which is implied by our provisional view on total foreclosure), or if harming Virgin Media could cause it to lose other wholesale contracts, that would restrict its incentive to harm Virgin Media.

- Second, we thought the merger could only create such an incentive if we believed particular things were likely to happen in the future, notably that fixed-mobile bundles became important in the market and mobile became an important driver of a consumer's choice of fixed services.

14.264 Finally, as set out immediately above, we considered that, in relation to effects:

- the merger would be unlikely to have significant effects on competition in the supply of mobile services on a stand-alone basis;

- even if bundles become prevalent and mobile becomes an important driver of fixed service provider, consumers would still have a choice of a number of alternative providers of fixed-mobile bundles and stand-alone services; and

- the effects were likely to a large extent to be time limited (ie up to contract renewal in [✂]).

14.265 Taking into account all of these factors, our provisional conclusion is that there is significant uncertainty around whether the merged entity would have the ability and incentive to harm Virgin Media within its contract by delaying its transition to full-MVNO and/or degrading its quality of service. Our provisional conclusion that the merged entity would be unlikely to pursue a strategy of total foreclosure suggests that the merged firm would also be cautious in inflicting such harm if, as is likely, to do so would reduce its chances of renewing its contract with Virgin Media (or winning contracts with other fixed-MVNOs). However, to the extent that the merger would lead to such harm, we considered that this would likely be temporary and its impact on downstream competition is likely to be limited. Accordingly, we do not expect the merger to result in an SLC in this regard.

Partial foreclosure of fixed-MVNOs under future contracts with the merged entity

14.266 We then assessed whether the merged entity might have the ability and incentive to foreclose fixed-MVNOs which might sign contracts with it for wholesale mobile services in the future. Sky and TalkTalk told us that the merged entity might not be incentivised to fully support and cooperate with them as a wholesale mobile supplier.

14.267 We looked at this from two perspectives:

- First, we assessed whether, post-merger, fixed-MVNOs would consider the merged entity to be an unsuitable supplier of wholesale mobile services. If this were the case, it may mean that they face a smaller choice set of wholesale mobile suppliers and we assessed whether fixed-MVNOs could face worse terms from other MNOs for wholesale mobile services as a result.

- Second, we assessed whether the merged entity would have the ability and incentive to foreclose competitors in the foreseeable future (including under contracts that have not yet been signed).

14.268 We considered that this was possible; however, none of the fixed-MVNOs we spoke to told us that they would not procure wholesale mobile services from BT/EE (although some believed that BT/EE would not supply them on commercial terms).[442] [✂].

14.269 We observed that Sky, Virgin Media and TalkTalk are large firms with significant commercial experience, and have a long history of purchasing wholesale inputs from rivals. For example, Sky and TalkTalk purchase wholesale fixed line phone and broadband inputs from BT (and Virgin Media has done so in the past in off-net areas); Virgin Media and TalkTalk purchase pay TV inputs from Sky; Virgin Media purchases pay TV inputs from BT, and Sky has stated its desire to do so; and Sky has in the past purchased pay TV inputs from Virgin Media. In some of these examples, firms have launched retail products that are highly dependent on these BT inputs, and which have come to represent large parts of their businesses. We recognise that they may be reluctant purchasers – in some cases there may be little or no alternative input – and some of these products are regulated, but these purchasers have questioned the effectiveness of regulation and/or raised disputes with Ofcom about the terms on which they are supplied or the quality of service. Yet they continue to rely on BT's inputs. This suggests that there are terms on which these firms will buy from rivals.

14.270 However, these fixed-MVNOs may be reluctant to buy from a rival (or willing to buy only if the terms it offered were much better than those offered by other MNOs) if there is a substantial possibility that the rival will in some way foreclose them within contract. This could lead to a situation where they are worse off than absent the merger. For example, absent the merger EE may have had the best bid; post-merger, once this extra risk is factored into that bid, an MVNO may instead decide to choose what would have been the second best bid, with a higher price or worse quality than absent the merger.

14.271 In our analysis of partial foreclosure during Virgin Media's current contract, above, we explained the following:

- The likelihood of there being an incentive for the merged entity to foreclose, and of there being an effect on competition at the retail level, both depend on factors including the likely prevalence of fixed-mobile bundles, and the extent to which mobile services drive the choice of provider for fixed services.

- If the merged entity wishes to retain the customer at the end of the relevant contract, it will likely not have the incentive to harm the

[442] See Sky and TalkTalk hearing summaries.

customer by refusing to supply it. If that is the case, then any incentive to harm its customer during the contract will be weakened.

14.272 Therefore, we would expect fixed-MVNOs to consider the merged entity's incentive and ability to undermine their mobile offerings within contract, which we discussed above (paragraphs 14.229 to 14.252). We recognise that those fixed-MVNOs would not have perfect insight into the merged entity's incentives.

14.273 We would also expect the fixed-MVNOs to seek contractual protection to the extent possible. In particular, they might seek more specific protection than Virgin Media obtained in its current contract, to reflect the possible different incentives of the supplier post-merger. [✂].[443] However, we recognise that contractual protection may not be able to cover every eventuality; and BT/EE may be unwilling to offer every such protection (although if it has an incentive to supply fixed-MVNOs it should be willing to make reasonable commitments). These factors may feed into fixed-MVNOs' views of the merged entity's ability to foreclose within contract.

14.274 Given these factors, on balance, we do not think fixed-MVNOs are more likely to be partially foreclosed under hypothetical future contracts with the merged entity than Virgin Media is under its current contracts. In particular:

- it is uncertain how much ability the merged entity would have to pursue such a strategy; in particular, given that fixed-MVNOs would have greater incentives than Virgin Media pre-merger to secure contractual protection in any future contracts with the merged entity, and that Virgin Media faces particular issues under its current contract that other fixed-MVNOs would not face (in particular, its transition to full-MVNO status);

- the merged entity's incentive to foreclose remains unclear, including for the reasons set out in relation to Virgin Media; and

- even if the merged entity had the ability and incentive to pursue such a strategy, it was unclear whether this would lead to a substantial effect on competition at the retail level, including for the reasons set out in relation to Virgin Media.

14.275 Accordingly, we provisionally conclude that the merger is not likely to lead to foreclosure of fixed-MVNOs under any future contracts with the merged entity.

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443 Virgin Media hearing summary.

Provisional findings

14.276 We provisionally find that the merger is not expected to result in an SLC in any market or markets in the UK as a result of a foreclosure strategy by the merged entity in the wholesale mobile market.

14.277 Two group members did not provisionally agree with the view that the merger would not be likely to give rise to an SLC in one or more markets.

14.278 These members considered that the merged entity would have the incentive to harm fixed-MVNOs, either by refusing to supply them, or, more probably, by restricting the range and quality of services offered. They believed that fixed-mobile bundles were likely to become increasingly prevalent and that the merged entity would not wish to assist major competitors by giving them access to a high-quality mobile service and thereby extinguishing any competitive advantage they might enjoy from EE's network and other assets. The MVNOs, for their part, would be reluctant to risk their long term security of supply by being hosted by their main rival in mobile and fixed telecom markets.

14.279 These members did not believe that such foreclosure, and the consequent reduction of competition in the wholesale mobile market, would be neutralised by the other three MNOs offering better terms either out of a desire to play a part in fixed-mobile bundling or in any event. Rather, they expected EE's total or partial withdrawal to lead to higher prices and/or reduced quality in MVNO contracts. They believed that this in itself established an SLC in the wholesale mobile market, irrespective of the effects downstream, which were harder to assess. They nonetheless thought it likely that there would be adverse effects downstream as a result of reduced rivalry in the upstream market.

14.280 However, a finding of SLC requires a two-thirds majority of members and therefore, notwithstanding these views, our provisional findings in relation to the wholesale mobile market are that there is no SLC, for the reasons explained above.

15. Mobile backhaul – overview

Introduction

15.1 We now consider the potential impact of the merger on the supply of mobile backhaul. Mobile backhaul is an important upstream input required by MNOs to supply retail mobile services. It is the physical connectivity that MNOs need to connect their radio base stations (ie antennas) to their 'core networks' (ie where traffic is routed) and enables customers' voice and data traffic to be handled appropriately.

15.2 BT is the main supplier of copper and fibre mobile backhaul, which it supplies to all MNOs (including EE) in the UK either through Openreach (which is regulated) or BT Wholesale (which relies in part on regulated inputs from Openreach, but is itself generally unregulated).[444]

15.3 This chapter starts with a summary of the nature of competition in the supply of mobile backhaul, including:

- *(a)* a description of what mobile backhaul is and the different technologies involved;
- *(b)* the way in which mobile backhaul is supplied;
- *(c)* the current supply relationships in place for managed fibre Ethernet-based mobile backhaul;
- *(d)* the suppliers of dark fibre; and
- *(e)* the role of regulation.

15.4 We then explain how our investigation has informed our view of the relevant product and geographic market definition.

15.5 We then go on to consider the theories of harm associated with input foreclosure (Chapter 16) and customer foreclosure (Chapter 17).

What is mobile backhaul?

15.6 Mobile backhaul is the essential network connectivity that connects an MNO's base station to its core network.

[444] Whilst some legacy products supplied by BT Wholesale are regulated, Ethernet-based products are not.

15.7 There are currently three main communication media used for the supply of mobile backhaul: copper, microwave and fibre. Of these different media, it is widely considered that fibre backhaul is the most effective, particularly for the provision of 4G backhaul in high-demand areas. This is because it provides very high capacity (ie virtually any bandwidth, depending on the transmission technology, can be used) and has few distance limitations. The most efficient and commonly used transmission technology over fibre backhaul circuits is Ethernet. MNOs enter into long-term contractual arrangements for the supply of fibre mobile backhaul services.

15.8 Third parties told the CMA that other backhaul methods suffer from bandwidth and/or distance limitations and reliability issues. For example, average bandwidth on copper links is provided as multiples of 2 Mbit/s, which is not sufficient for standard-cell 4G data requirements. Therefore, as mobile sites are upgraded to 4G, copper-based backhaul links are increasingly seen as a legacy technology and are being replaced with fibre backhaul.

15.9 Similarly, in relation to microwave backhaul, whilst in peak conditions the potential bandwidth can be high, it requires clear line-of-sight and poor weather results in significant losses (and sometimes complete interruption). This means that microwave sites are planned to achieve less than half of their theoretical throughput. However, microwave is widely used in areas where it is not practical or cost-effective to use fibre.

15.10 Further information regarding our assessment of different mobile backhaul media is set out in Appendix K, paragraphs 2–4.

The supply of fibre Ethernet-based mobile backhaul

15.11 MNOs requiring fibre Ethernet-based mobile backhaul must source two elements to complete the link between an MNO's base station to a point of connection (POC) on an MNO's core network; these are:

(a) the physical fibre line; and

(b) the electronic equipment at both ends of the line.

15.12 MNOs therefore can either:

(a) source backhaul services which include both the fibre infrastructure and some or all of the necessary electronic equipment ('active backhaul products'); or

(b) build or lease the physical but unlit fibre (dark fibre) and install and manage their own electronic equipment at both ends of each line.[445]

15.13 To date, MNOs have sourced fibre Ethernet-based mobile backhaul almost exclusively using active backhaul products.[446] Among active backhaul products, it is possible to distinguish between the following:

(a) **Leased lines, or unmanaged backhaul**. These lines provide connection between two points, usually not covering the entire distance between the mobile base station and the MNO's core network. The MNO can build the full connection by leasing the terminating and trunk segments from either the same or from different suppliers. Terminating segments are mainly supplied by Openreach on regulated terms (see paragraph 15.18 below for a description of Openreach's products). Virgin Media also supplies access circuits within its network footprint.

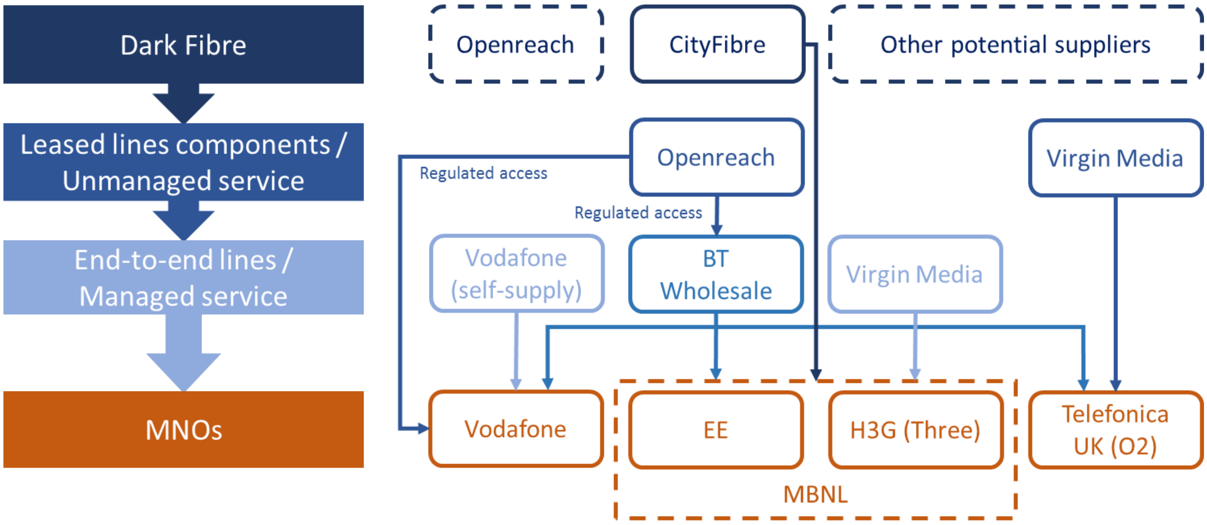
(b) **End-to-end connections, or managed backhaul**. BT Wholesale and Virgin Media provide MNOs with end-to-end connectivity between mobile base stations and the MNOs' core networks. They also add a further layer of managed services, such as fault monitoring and repair services. For a more detailed description of these products see paragraphs 15.21 and 15.22.

The suppliers of mobile backhaul and the products offered

15.14 In the UK, BT (through Openreach and BT Wholesale) is the main supplier of copper and fibre mobile backhaul, and in particular fibre Ethernet-based mobile backhaul (BT supplies approximately [✄]% of the fibre Ethernet circuits currently used by MNOs in the UK).[447] However, there are some alternatives to BT, which are summarised in Figure 15.1 below.

[445] The market for dark fibre remains nascent, with very limited deployment by third party suppliers and self-build (by MNOs), and Openreach not having offered this type of product. We consider the possible growth of this market in the future in our competitive assessment in Chapter 17.
[446] For example, MBNL uses some dark fibre circuits from CityFibre in Hull ([✄]) and [✄].
[447] See Table 1 in Appendix K.

Figure 15.1: Supply chain of mobile fibre Ethernet backhaul in the UK



Source: CMA.
Notes: Openreach does not currently supply dark fibre, but may become a major provider if Ofcom's proposed dark fibre regulation is approved (see paragraph 15.37). There are other smaller potential suppliers of dark fibre for mobile backhaul. CityFibre has recently announced a deal to supply dark fibre to Vodafone, but this has not yet begun.

BT

15.15 BT provides MNOs with backhaul links using either microwave, copper or fibre (it does not currently provide access to dark fibre). BT, through its BT Wholesale division, is the largest provider of copper backhaul. However, this is a legacy technology, and MNOs are replacing copper backhaul circuits with fibre ones. BT is not a major provider of microwave backhaul, which MNOs mostly self-supply.

15.16 BT is the main supplier of fibre backhaul, both with SDH and Ethernet technologies.[448] BT supplies fibre backhaul through either Openreach or BT Wholesale.

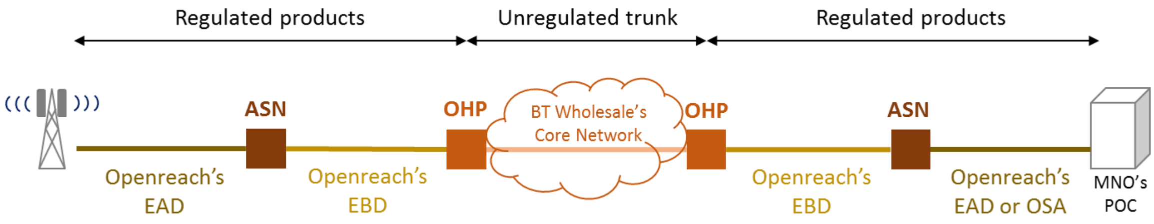
- *Openreach*

15.17 Openreach supplies several fibre Ethernet products that can be used, including in combination with other inputs, to connect a mobile base station with the MNO's core network. Unless the mobile base station is close to one of the MNOs' POCs, there is no single Openreach product to connect the two. As shown in the figure below, the full connection can be established by using different Openreach products (Ethernet Access Direct (EAD), Ethernet Backhaul Direct (EBD) and Optical Spectrum Access (OSA)), which cover

[448] SDH is a legacy technology and SDH links are being replaced by MNOs with Ethernet links.

the terminating segments of the link, together with a trunk connection (which can be provided by BT Wholesale or by several other providers).

Figure 15.2: Openreach's fibre Ethernet mobile backhaul products



Source: CMA.

15.18 These are the main Openreach backhaul products:[449]

(a) **EAD Local Access (EAD LA):** an Ethernet connection with speed up to 10 Gbit/s between the mobile base station site and BT's nearest local exchange, provided the latter is located within the catchment area of the exchange. For an MNO to use EAD LA, it must have equipment in that exchange so that it can take over the traffic onto its own network at that point, or lease fibre links from the exchange to its core network.

(b) **EAD:** an Ethernet connection with speed up to 10 Gbit/s between the mobile base station site and any site up to 25 km from the base station (35 km radial distance at 1 Gbit/s).

(c) **EBD:** an Ethernet connection with speed up to 10 Gbit/s between any one of Openreach's specified access supply node (ASN) exchanges and its specified Openreach Handover Point (OHP), where it may connect to the core network of the CP purchasing the EBD circuit from Openreach (which may be BT Wholesale).

(d) **OSA/OSEA:** very high speed optical services, typically of 2.5 or 10 Gbit/s (OSA), or up to 100 Gbit/s (OSEA); CPs are able to consume multiples of the available services to build capacity as required. They might be used by MNOs to establish a connection between an intermediate point of aggregation for the traffic from many MNOs base stations and the MNO's core network.

15.19 All the Openreach products above are sold to MNOs and other CPs on regulated terms. Most of the Openreach products used by MNOs are

[449] See Vodafone initial submission, paragraph 2.18.

sourced as components of managed backhaul services provided by BT Wholesale.

- *BT Wholesale*

15.20 BT Wholesale provides trunk connections using its core network. It also offers backhaul products that combine Openreach's inputs with other inputs and services in what are called managed backhaul products.

15.21 The products currently supplied by BT Wholesale for mobile backhaul connectivity are:[450]

(a) **Ethernet Access Connect (EAC):** BT Wholesale resells the EAD LA and EAD inputs by repackaging them as EAC products by adding project management services. EAC products are identical in functionality to EAD LA and EAD, but, in accordance with customer wishes, there is scope for BT Wholesale to price them differently, for example by offering larger upfront connection charges and lower recurring monthly or annual charges. Such differing capex/opex combinations can be attractive for MNOs. [✂]

(b) **Managed Ethernet Access Service (MEAS):** BT Wholesale combines EAD LA and EAD inputs from Openreach with its own network to offer a more comprehensive backhaul service to MNOs. This is particularly important for MNOs that require a third party to transport their traffic beyond the ASN or local exchange nearest to the mobile base station all the way back to the MNO's core network. By using MEAS, MNOs do not need to install their own equipment at ASN exchanges; in addition, MEAS includes the supply and management of the routers at the two ends of the connection. Moreover, MEAS is more than just a connectivity service: in addition to providing bandwidth from the base station to the core network, MEAS provides managed synchronisation and an end-to-end service using a virtual circuit which can provide core network resiliency by switching the traffic from one handover point to another in the event of an MNO network failure. This is the service MNOs currently use most when sourcing fibre Ethernet backhaul from BT.

(c) **Wholesale Ethernet:** like MEAS, this combines EAD LA and EAD inputs from Openreach with BT Wholesale's network; unlike MEAS, it was not developed specifically for MNOs. It does not include the routers at each end of the line nor end-to-end synchronisation. On the other

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[450] See Vodafone initial submission, paragraph 2.21.

hand, it has more access and configuration options, that can make it preferred to MEAS at base sites with particularly low or particularly high capacity requirements. [✄][✄].

(d) **Managed Mobile Wholesale Ethernet:** the Wholesale Ethernet service with the addition of a managed install of customer's equipment (ie the router chosen by the customer) and a project management service. [✄]

Virgin Media

15.22 Virgin Media is the second largest supplier of managed backhaul, after BT Wholesale. Currently, Virgin Media operates only within its network footprint, but could in principle extend its presence by using Openreach's regulated inputs. BT Wholesale and Virgin Media, however, do not offer exactly the same services:

(a) BT MEAS provides an end-to-end managed service that includes electronic equipment at either end of the circuit and maintenance. Some parts of the service (such as the core network) are shared with other users. It provides up to only 450 Mbit/s of peak throughput per cell site as a function of the cell site gateway (instead of the nominal 1 Gbit/s capacity), although BT Wholesale can provide higher speeds where this has been negotiated with the customer. BT Wholesale's new cell site gateway can perform up to 900 Mbit/s.

(b) Virgin Media provides a wires-only solution (ie without the equipment), plus fault monitoring on all dedicated circuits and a fault repair service. However, Virgin Media does offer a full 1 GigE per cell site service without contention.

15.23 Virgin Media also supplies [✄] with an unmanaged Ethernet product equivalent to the EAD supplied by Openreach.

Vodafone

15.24 Following the acquisition of Cable & Wireless in 2012, Vodafone is now able to self-supply part of its fibre Ethernet backhaul. Vodafone does not currently provide backhaul services to other MNOs, but sells wholesale Ethernet services to other CPs.

15.25 The merging parties consider that Vodafone would be a credible and competitive provider of mobile backhaul, given its extensive network and large number of points of presence. [✄]

TalkTalk

15.26 The merging parties see TalkTalk as the most likely entrant into the market for managed mobile backhaul, as it owns quite an extensive network and already competes in the provision of Ethernet products to non-MNO customers. However, [✂].

The current supply relationships in place for managed fibre Ethernet-based mobile backhaul

15.27 This section presents an overview of how MNOs currently source fibre Ethernet-based backhaul circuits, focusing on their relation with Openreach and BT Wholesale. Additional details can be found in Appendix K.

MBNL

15.28 [✂]

15.29 [✂]

Telefónica

15.30 [✂]

15.31 [✂]

Vodafone

15.32 [✂]

15.33 [✂]

The suppliers of dark fibre

15.34 As noted at paragraph 15.12(b) above, MNOs requiring access to fibre Ethernet-based mobile backhaul can source it by building or leasing the physical but unlit fibre (dark fibre) and installing and managing their own electronic equipment at both ends of each line. The main attraction of dark fibre to MNOs is that costs do not increase with the volume of data carried (for scales of volume relevant to MNOs), unlike managed services where the cost of a line increases with its capacity.

15.35 Our investigation suggested that self-build was expensive and was not perceived as a meaningful substitute to active fibre mobile backhaul by MNOs. MNOs can source dark fibre from other smaller providers. Currently, MBNL sources some dark fibre circuits from CityFibre in Hull. Other potential suppliers of dark fibre include Zayo, a company that owns a fibre network in London, in other large cities in the UK and in South Yorkshire, and Gigaclear, a company that builds and operates new FTTP access networks in rural parts of the UK. [✂]

15.36 We understand that access to dark fibre, at competitive rates, could be commercially attractive to MNOs. However, dark fibre's limited footprint means that in most areas it is not physically present as an alternative to BT, and building or extending networks can be costly and time-consuming.

15.37 Dark fibre is currently not supplied by BT; however, in its consultation for the 2016 BCMR, Ofcom has proposed to impose on BT an obligation to provide access to dark fibre (see paragraph 63 of Appendix D for further details).

The role of regulation

15.38 The regulation that applies to mobile backhaul is discussed in detail in Chapter 4 and Appendix D. Further information is provided in Appendix K, paragraphs 5–18. Importantly, BT is under a number of SMP conditions in relation to mobile backhaul, as well as under requirements under its 2005 Undertakings. These regulations have an impact on our competitive assessment, as further set out below.

Market definition

Product market

15.39 Third parties raised specific concerns in relation to the supply of fibre Ethernet-based mobile backhaul.

15.40 We therefore considered in turn the substitutability of:

(a) fibre mobile backhaul with other forms of mobile backhaul;

(b) managed fibre backhaul with unmanaged fibre backhaul;

(c) managed fibre Ethernet-based mobile backhaul with any other end-to-end backhaul products; and

(d) unmanaged fibre backhaul with any other leased lines or dark fibre products.

Substitutability of fibre mobile backhaul with other forms of mobile backhaul

15.41 The parties submitted that there was a high degree of substitution between fibre and microwave backhaul. However, we found that other forms of mobile backhaul (including other forms of fibre mobile backhaul) were not sufficiently substitutable with fibre Ethernet-based mobile backhaul to be considered part of the same market. In particular:

(a) The past and predicted increase in mobile data traffic (for example as a result of the data demands of 4G) means that the capacity limitations of copper make it unsuitable to the backhaul needs of MNOs and that it is not therefore a substitute for fibre backhaul.

(b) Microwave is used and will continue to be used by MNOs and is, in some situations, preferable to fibre due in large part to its lower cost when a site is not well-located for a fibre connection. It is also (at least in theory) capable of reaching the capacity levels MNOs require for 4G. However, there continue to be a large number of sites and segments where MNOs do not perceive microwave to be substitutable for fibre, as a result of factors including cost and practical considerations.

(c) In the context of fibre mobile backhaul, Ethernet is distinct from the SDH standard, given that the latter is a legacy technology, with limited bandwidths (of 155 Mbit/s) that is being quickly replaced as MNOs upgrade their backhaul links to higher bandwidths.

15.42 We therefore considered that copper and microwave mobile backhaul were unlikely to be sufficiently close substitutes to fibre Ethernet-based backhaul, although we consider the role of microwave in our competitive assessment where relevant.

Substitutability of managed fibre backhaul with unmanaged fibre backhaul

15.43 Compared with managed services (eg MEAS), using disaggregated terminating and trunk segments (provided by Openreach or Virgin Media, and in some areas by dark fibre providers) is more complex and costly for MNOs. Such an approach requires the MNO to have its own equipment at ASN exchanges. As seen in paragraphs 15.32 and 15.33, [✂].

15.44 [✂]

15.45 [✂]

15.46 Finally, whilst dark fibre (ie passive unmanaged leased lines) could be commercially attractive to MNOs as an alternative to managed fibre backhaul, the uncertainties around its cost and the geographic limits of its availability limit its potential substitutability with existing managed fibre backhaul.

15.47 We therefore provisionally found that the supply of managed fibre Ethernet-based mobile backhaul was likely to be in a separate market to the supply of unmanaged fibre backhaul (ie leased lines) or dark fibre.

Substitutability of managed fibre Ethernet-based mobile backhaul with any other end-to-end backhaul products

15.48 We then considered whether managed fibre Ethernet-based mobile backhaul could be aggregated with any other end-to-end backhaul products.

15.49 Separately, we assessed whether it would be appropriate to consider managed fibre Ethernet-based mobile backhaul as part of a wider market for all end-to-end Ethernet services (including for example those used for business connectivity). We found that some MNOs were using an end-to-end fibre backhaul product that was also used for business connectivity. The main difference between this and a service such as MEAS is that the former does not include the routers at each end of the line nor end-to-end synchronisation. We noted that these could be sourced relatively easily on an ad hoc basis.

15.50 However, we considered that including managed Ethernet mobile backhaul as part of a wider market for all end-to-end wholesale Ethernet backhaul risked overestimating the competitive constraint imposed by other backhaul providers. For example, TalkTalk, one of the major suppliers of wholesale Ethernet, does not supply MNOs with mobile backhaul. [✂].[451] We, therefore, considered it unlikely that there would be supply-side substitution from TalkTalk's wholesale Ethernet product in case of a SSNIP. The Parties also submitted that some managed backhaul services were specifically tailored for MNOs and that managed mobile backhaul constituted the narrowest feasible product scope.[452]

15.51 In light of the above, we provisionally found that managed fibre Ethernet-based mobile backhaul was likely distinct from (and not in the same market) as the wider supply of end-to-end wholesale Ethernet.

[451] See paragraph 15.26 above.
[452] The parties, however, consider that the appropriate frame of reference should be wider.

Substitutability of unmanaged fibre backhaul with any other leased lines or dark fibre products

15.52 Finally, we considered whether unmanaged fibre backhaul could be aggregated with any other leased lines or dark fibre products. We found that the supply of (terminating segment) unmanaged fibre backhaul[453] formed part of a wider leased lines market (including the supply of dark fibre, either from third party suppliers or self-build) given that, in particular:

(a) Where available, dark fibre is used as a substitute for active leased lines. Even in the case of regulated access to Openreach dark fibre, this would broadly reproduce the types of connection currently provided with EAD and EAD LA products. Moreover, EE told the CMA that [✂].

(b) Unlike managed backhaul services, unmanaged leased lines products are not customised for MNOs. Openreach's EAD, EAD LA and EBD products, for example, are used both as inputs to managed mobile backhaul services and as inputs for fixed business connectivity services. The same is the case for dark fibre terminating segments.

Preliminary conclusion on product market

15.53 We therefore provisionally found that there were distinct product markets for:

(a) the supply of managed fibre Ethernet-based mobile backhaul; and

(b) the supply of (terminating segment) unmanaged fibre Ethernet-based leased lines (including the supply of dark fibre).

Geographic market definition

15.54 We considered the extent to which competition for the supply of mobile backhaul was subject to regional differences within the UK, primarily according to the presence of other network operators, and particularly Virgin Media.

15.55 The parties submitted that the geographic scope of the frame of reference of mobile backhaul should be the UK as a whole.

15.56 We found that:

[453] We note that unmanaged mobile backhaul can be split into two parts: the trunk segment and the terminating segment (see Figure 15.2). In relation to the trunk segment connections, we note that Ofcom has considered this to be competitive and has therefore not imposed regulation. We have therefore focused our assessment of market definition on the terminating segment.

(a) in relation to the supply of (terminating segment) unmanaged fibre Ethernet-based leased lines (including the supply of dark fibre), the market was likely to be local, as substitutability with leased lines offered by alternative providers quickly disappears as the distance between the base station and the providers' nearest point of presence increases; however, in view of our competitive assessment, local markets can be aggregated where the competitive conditions appear to be the same (urban areas, rural areas, and Hull); and

(b) in relation to the supply of managed fibre Ethernet-based mobile backhaul, the market was likely to be wider but the degree of competition may vary from one specific location to another, in particular within and outside Virgin Media's network footprint.

15.57 However, the precise geographic market definition can be left open, as whether the market is national or narrower does not affect our provisional findings.

16. Mobile backhaul: competitive assessment – input foreclosure

Introduction

16.1 As explained in the previous chapter, mobile backhaul is an important component which MNOs use to connect their RAN to their core network.

16.2 As set out in our assessment of market definition, we identified the supply of managed fibre Ethernet-based mobile backhaul as distinct from the supply of other types of mobile backhaul. MNOs increasingly require this type of mobile backhaul to carry large quantities of data through to their core network, including in relation to their 4G traffic. In the remainder of this chapter, unless otherwise stated, we refer to this type of mobile backhaul as 'fibre mobile backhaul'.

The parties' activities

16.3 In the UK, BT is the main supplier of fibre Ethernet-based mobile backhaul. All MNOs purchase this type of mobile backhaul from BT – from Openreach, BT Wholesale or both.

16.4 Pre-merger, EE purchased fibre Ethernet-base mobile backhaul from BT, both directly and via MBNL. There was therefore a vertical relationship between the parties. Post-merger, the merged entity will therefore be both an important supplier of this input and a significant player in the downstream retail mobile market.

The theory of harm

16.5 We note that, in the counterfactual, BT would also have a mobile arm, and therefore it could have had some incentive to foreclose downstream MNOs. However, the scale of EE's mobile business means that the merged entity is considerably more likely to benefit from harm to other MNOs (eg by gaining a high proportion of customers that its rivals lose), given the relatively small scale (at least initially) of BT's MVNO mobile service. We therefore believed it plausible that the merger could increase the merged entity's incentive to foreclose MNOs for which it would be a close rival for retail mobile services.

16.6 We considered that any foreclosure of an MNO would be likely to also affect the MVNOs carried on that MNO's network. The scale and timing of that effect would depend on whether the foreclosure happened through price or quality (or both), and how and when any increase in backhaul cost might be passed on to MVNOs under the terms of their contract. In this section we focus initially on the effect on MNOs, but we have also taken into account the impact on MVNOs and do not think separate issues arise for consideration.

Third party concerns

16.7 Third parties raised a number of concerns regarding the merged entity's ability and incentive to increase the price, degrade the quality and/or stifle innovation in relation to backhaul products required by the merged entity's competitors.

16.8 The concerns focused on the supply of fibre Ethernet-based mobile backhaul, which MNOs consider necessary for the operation of their 4G networks and not easily substitutable with other technologies.

Possible foreclosure strategies

16.9 We identified a number of different ways by which the merged entity could pursue a foreclosure strategy against suppliers which it would compete with in the downstream supply of retail mobile services. These were:

(a) foreclosure by increasing the price of Openreach Ethernet leased lines;

(b) foreclosure by discriminating on the quality of Openreach Ethernet leased lines;

(c) foreclosure through frustration of innovation by Openreach;

(d) foreclosure by withdrawing supply of BT Wholesale's managed backhaul services (or offering worse contractual terms) at contract renewal;

(e) foreclosure by increasing the price or reducing the quality of BT Wholesale's managed backhaul services under the current contracts; and

(f) the pursuit of a margin squeeze strategy by the merged entity as a whole.

Overarching issues

16.10 Prior to setting out our assessment of the various foreclosure strategies, it is helpful to explain three overarching issues, namely:

(a) the role of regulation;

(b) the scale of mobile backhaul costs relative to an MNO's total costs; and

(c) the meaning of quality in relation to mobile backhaul.

The role of regulation

16.11 We explain in detail the role of regulation in Chapter 4, including the undertakings given by BT to Ofcom in 2005 that were intended to ensure that Openreach was functionally separate from the rest of the BT Group.

16.12 For the purposes of our assessment of the above foreclosure strategies, we note that BT supplies mobile backhaul through its Openreach arm and also through BT Wholesale. Products supplied through Openreach are subject to:

(a) specific charge controls in relation to its various backhaul products, which are intended to limit the ability of Openreach to increase the price of mobile backhaul; and

(b) specific non-discrimination conditions, which are intended to protect the quality of services received by its customers.[454]

16.13 The role of regulation is therefore taken into account where relevant in our assessment of foreclosure strategies which relate to Openreach and, specifically, in our assessment of the ability of Openreach to pursue various foreclosure strategies.

16.14 Separately, we note that the undertakings were also intended to ensure that Openreach should not be influenced, in its commercial decisions, by the strategic incentives of the rest of the Group. However, Ofcom has noted in its SRDC discussion document that 'BT's vertically integrated structure means that it still has the incentive to discriminate against competing downstream providers. Although the current approach limits its ability to act on this incentive, competition concerns related to discrimination may still remain.'[455]

16.15 We do not therefore assume, in our assessment, that functional separation necessarily excludes BT's incentive to foreclose. Instead, we consider whether the BT Group as a whole, taking account of Openreach regulation and functional separation, has the ability and incentive to foreclose.[456]

[454] See Chapter 4.
[455] Ofcom SRDC (2015), paragraph 11.25.
[456] On the other hand, if evidence shows that BT currently does not discriminate against rivals where it may have an incentive to do so, this may be evidence of an absence of ability to foreclose.

The incidence of backhaul on an MNO's costs

16.16 We found that backhaul costs accounted for a small proportion of an MNO's total costs in providing retail mobile services, as shown in the table below.[457]

Table 16.1: Incidence of backhaul on MNOs' costs

%

	EE	*H3G*	*Telefónica*	*Vodafone*	*Ofcom estimate**
Backhaul costs as a percentage of total network costs	[✂]	[✂]†	[✂]	[✂]†	18
Backhaul costs as a percentage of total cost	[✂]	[✂]†	[✂]	[✂]†	8

Source: CMA calculations.
*Some of Ofcom's estimates are taken from the 2015 MCT model designed for the MCT market review, which was published in March 2015. These figures are subject to the caveat that Ofcom's 2015 MCT model was not designed to calculate backhaul costs specifically, and backhaul was not explicitly considered as part of Ofcom's calibration exercise. The exact proportions used by different MNOs will also differ depending on their individual strategies.
†Opex only.

16.17 The limited evidence available suggested that backhaul costs in absolute terms and as a fraction of an MNO's total costs may not, in the counterfactual, significantly increase in future (and in any event not of an order of magnitude that would affect our assessment).

16.18 Further details of our calculations are set out in Appendix K, paragraphs 83–95.

The meaning of quality in fibre mobile backhaul

16.19 We found that quality, in the context of backhaul, has many dimensions and that a degradation in quality has the potential to impact an MNO's competitive offering at the downstream level, which could for example:

(a) lead to slower speeds or buffering (in the event that there is a delay in upgrading the backhaul capability); or

(b) leave customers within a particular cell site without mobile access (ie an outage that is left unrepaired).

16.20 For MNOs sourcing fibre mobile backhaul from BT Wholesale (which makes use of Openreach inputs) some aspects of quality will be the responsibility (and under the control of) either Openreach or BT Wholesale directly. We have considered these aspects of the quality of mobile backhaul in turn below.

[457] For data, see Table 2 in Appendix K. In terms of MNOs' profits, backhaul costs are not insignificant (EBIT in 2013 was £[✂] million for Vodafone, £[✂] million for H3G, £[✂] million for Telefonica).

- *Openreach*

16.21 Openreach is responsible for the provision of terminating segments of backhaul connections. The main quality dimensions of these products are:

(a) the speed of delivery of new links or upgrades to existing links; and

(b) the speed of repairs to existing links.

16.22 It is important to note that:

(a) a reduction in quality of Openreach products could have a direct impact on the services that MNOs receive from BT Wholesale, since these products are inputs for managed backhaul services that all MNOs purchase from BT Wholesale; and

(b) where there are no alternatives to Openreach products available, then a significant worsening of the quality of backhaul would be likely to result directly in a reduced quality of retail mobile services. In most rural areas, and in many geographic areas outside Virgin Media's network footprint, there is no alternative to Openreach inputs for the supply of managed or unmanaged fibre Ethernet-based backhaul.

16.23 The CMA has received contrasting views on the impact on MNOs of a reduction in the quality of Openreach services. Much of the evidence suggests that the effect would be limited, temporary and localised. For example:

(a) Openreach is responsible for the provision of terminating segments; delays on delivery or repair would affect only an individual base station connected with a given fibre link, but would not impact the remainder of the MNO's network.

(b) In relation to delays in installing new circuits or upgrading existing circuits, we understand that MNOs plan their requirements with plenty of lead time to ensure these are in place well before capacity constraints are reached.[458] These lead times are substantially greater than the scope for delay by Openreach, which suggests that even delayed installation would occur before the site reached capacity and users in that cell began experiencing service issues. On the other hand, the delayed deployment of new backhaul circuits could directly delay the

[458] BT response to Issues Statement – paragraph 12.6.

expansion of the MNO's 4G network, which often requires capacity upgrades.

(c) In relation to the repair of existing circuits, Ofcom's view is that the fault rate is not high enough for delay to have a material impact on an MNO's retail offer.[459]

(d) An SLG direction has been in place since 2008 that requires that Openreach pays compensation for non-delivery and fault repair on a proactive basis.[460]

16.24 However, we note that, if Openreach was able to delay an installation at a time when the MNO was capacity constrained at a particular site, this could have a significant impact on customer churn at the local level. One third party told us that its analysis suggested a [✂]% higher propensity to churn where customers experienced temporary congestion resulting in speeds below 400 Kbit/s.

16.25 In addition, we note that Openreach is responsible for the development of new products which MNOs may want to use when sourcing terminating segments (for example, the development of a dark fibre product or small cell). We consider the potential impact of degrading this innovation in the specific strategies to which they relate.

- *BT Wholesale*

16.26 Whilst BT Wholesale relies on Openreach inputs, it is directly responsible for certain elements of the service that affect quality. Under its current contracts with MNOs, these include:

(a) sending, on behalf of the relevant MNO, requests for new deliveries, upgrades or repairs to Openreach;

(b) management of routers and control of data transmission across the network; specifically, monitoring network performance in terms of latency, jitter and packet error loss rate (which EE considers one of the main quality dimensions of the backhaul service). Quality degradation may have different effects:

[459] Ofcom hearing summary.
[460] Vodafone, however, told the CMA that these payments formed part of BT Openreach's regulatory cost base, such that they were in practice charged back to Vodafone (and other customers) in the regulated price. (Vodafone Initial submission, paragraph 2.43(ii)).

(i) Issues with routers at a radio site level would have only a local impact.

(ii) Traffic congestion nearer the core of the backhaul network could have a much bigger impact. A serious issue here could have national and long-term implications and, if sustained, could result in a high level of customer churn.

16.27 Another potential quality impact arises from BT's control of development of its own core network, which could influence the backhaul products that the merged entity makes available to MNOs.

16.28 We now turn to consider each of the specific input foreclosure strategies we have identified in paragraph 16.9.

Strategy 1 – Foreclosure by increasing the price of Openreach Ethernet leased lines

16.29 Openreach is the only provider of Ethernet leased lines that has a UK-wide presence (with the exception of the Hull area). Ethernet leased lines are the necessary inputs that allow BT Wholesale to offer the fibre mobile backhaul managed service (predominantly MEAS) and that could be used by any other potential supplier to offer a managed fibre mobile backhaul service.

16.30 As the merger will result in BT acquiring a mobile operator, and these lines are an important input into the provision of mobile services, we considered whether the merged entity might have the incentive to increase prices to its downstream competitors, so as to increase prices at the retail level, and so to increase diversion of customers to its own mobile division.

16.31 We first considered whether Openreach could increase the price it charged for use of its leased lines for the purpose of fibre Ethernet-based mobile backhaul.

Ability to increase the price

16.32 Openreach is subject to a charge control regulation, which constrains its ability to increase prices. The current charge control prevents BT from making any nominal price increases and the products are also subject to an overall RPI minus 11.5% price cap, which requires an overall reduction in prices each year. There is also a requirement to reduce the price of a sub-basket for EAD 1 Gbit/s (a product widely used for mobile backhaul) in line with the overall basket of services.

16.33 Some third parties submitted that there might be sufficient flexibility in the charge control to allow the merged entity to increase the wholesale price. Two third parties raised specific concerns. In particular:

(a) Vodafone submitted that the merged entity might still be able to increase the costs to rival MNOs by altering the relative prices of EAD and EAD LA (included in the same basket) in such a way that the overall cost to MNOs would increase.[461]

(b) Sky submitted that the merged entity could discriminate against rival MNOs, in terms of pricing, by:

(i) calibrating a volume-based discount scheme that afforded limited opportunity for rival MNOs to benefit from the largest discounts, but allowed EE to benefit in line with its level of demand; or

(ii) differentiating the prices of the various link lengths to favour the propagation characteristics of its own spectrum, whilst discriminating against new acquirers of higher frequency spectrum.[462]

16.34 In relation to Vodafone's concerns, we provisionally found that this was not likely to occur, as it would be a breach of the SMP condition of non-discrimination Appendix D, paragraph 61b and could result in enforcement action being taken by Ofcom on its own initiative or by an MNO taking a formal dispute to Ofcom.

16.35 In relation to the first of Sky's concerns, we provisionally found that this strategy was not likely to result in higher prices to other MNOs. This was because a discount that only EE could get would not harm rival MNOs since payments between EE and Openreach would constitute internal transfers and so such a discount would give EE no competitive advantage.

16.36 In relation to the second of Sky's concerns, we provisionally found that such discriminatory behaviour was not likely, since in dense urban areas the number of cells needed to provide coverage with 2.6 GHz and 3.5 GHz spectrum was virtually the same. Since high frequency spectrum would be mainly used for small cells deployed in urban areas, the scope for price discrimination based on circuit length appeared limited. In addition, pricing

[461] Vodafone initial submission, paragraph 2.43(iii).
[462] For example, higher frequency spectrum would require a denser deployment of cells and so potentially backhaul links of different length. This might allow the merged entity to price circuits of different lengths in a way that favoured the propagation characteristics of 2.6 GHz spectrum compared to higher frequency spectrum.

strategies that discriminate between CPs would be in breach of the non-discrimination condition and MNOs could bring a dispute to Ofcom.

Impact of Openreach prices on the prices paid by MNOs

16.37 As described above in our description of overarching issues, backhaul costs represent a small part of the overall costs incurred by MNOs, and the Openreach element an even smaller part. Any potential change to Openreach's prices may therefore have a limited impact on MNOs' costs in the short run.

16.38 Currently, [✄]. The other MNOs that rely on MEAS services from BT Wholesale have signed long-term contracts which do not closely link MEAS prices to the underlying prices of Openreach products.

Assessment

16.39 We provisionally found that the merged entity was unlikely to have the ability, by pursuing this foreclosure strategy, to significantly increase rival MNOs' backhaul costs, for the following three reasons, which are in our provisional view each in themselves sufficient:

(a) The constraints imposed by the charge control.

(b) The small incidence that backhaul has on MNOs' costs.

(c) The lack of a clear link in the short run between the actual price paid by MNOs for backhaul and the prices of the Openreach products.

16.40 Further details of our assessment are set out in paragraphs 111–124 of Appendix K.

Strategy 2 – Foreclosure by discriminating on the quality of Openreach Ethernet leased lines

16.41 Having considered whether Openreach could increase the price it charged for use of its leased lines for the purpose of fibre Ethernet-based mobile backhaul, we then considered the extent to which the merged entity would have the ability to discriminate against rival MNOs with respect to the quality of Openreach inputs.

16.42 Some third parties raised concerns that the merged entity could have the ability and incentive to reduce the quality of service offered to competing MNOs purchasing backhaul products from Openreach, or to offer different levels of service to the merged entity's mobile division compared to what it would offer competing MNOs.

16.43 The parties told the CMA that the merged entity would not be able to discriminate against competing MNOs in terms of service levels or quality due to the non-discrimination obligation and the EOI requirement.[463] In addition, BT noted that it was required to publish quality of service information. As set out in paragraph 16.23 above, our assessment suggested that any quality discrimination on Openreach products would have at most a temporary effect on MNOs in particular local areas.

16.44 However, some third parties expressed the concern that regulation did not eliminate the possibility of Openreach to discriminate on quality. In particular:

(a) Vodafone noted data from the 2014 annual report of the Equality of Access Board (EAB) that suggested BT already achieved better delivery outcomes from Openreach than non-BT CPs, in terms of shorter delays from delivery dates for EAD products. Vodafone suggested that this might partly be because BT's downstream businesses bought proportionately more unregulated Project Services from Openreach. Other operators used their own in-house project management teams to manage Openreach orders.[464]

(b) Sky submitted that Openreach could introduce more costly premium services for enhanced care, which rival CPs might be encouraged to take to overcome the delivery and service quality issues, thereby increasing their costs. Sky also submitted that Openreach was free to determine and change the backhaul circuit delivery dates and could de-prioritise the delivery requirements of competing MNOs in favour of EE. Sky was concerned that Openreach also controlled the processes around fault repair and could de-prioritise the requirements of rival MNOs relative to the merged entity's downstream divisions.

16.45 In contrast, Telefónica told the CMA that, while every CP was equally dissatisfied with the level of repair from Openreach, the process was fairly transparent and fairly equivalent, and this would not change post-merger.

Assessment of past discriminatory behaviour

16.46 Given that much third party concern appeared to hinge on evidence of past discriminatory behaviour, we investigated whether there was evidence to

[463] BT initial submission, p25, paragraph 4.4.
[464] Vodafone Initial submission, paragraph 2.40(ii).

support third party submissions. We noted that pre-merger BT would have a strong incentive to favour supply by Openreach to other parts of BT; for example, in relation to the supply of regulated products for fixed communications services (such as SFBB).[465]

16.47 We reviewed the extent to which there was evidence of past discriminatory behaviour on the part of Openreach. We considered that this could assist the CMA in understanding the extent to which BT could, if it had the incentive to do so, circumvent the non-discrimination obligation and the EOI requirement in future in relation to the supply of mobile backhaul. In summary:

(a) In relation to provision times, BT's EAB[466] reports for 2013, 2014 and 2015 indicated that the percentage of orders fulfilled on time for BT divisions was consistently higher than those for third parties. However, Ofcom found that, when the initially stipulated completion date was considered and delays due to customers' behaviour were excluded, there was no evidence of systematic bias in favour of BT.[467]

(b) In relation to the disproportionate use by BT divisions of Project Services (which project manage Openreach orders) we considered whether this could be a means for BT to prioritise its own orders. Project Services is available on an EOI basis to all CPs, but the use of Project Services by BT constitutes an internal transfer. However, Ofcom has found no evidence that Project Services orders received favourable treatment, though it could not exclude the possibility.

(c) In relation to fault repairs, we note that Ofcom's analysis of the timing of fault repairs led it to conclude that Ethernet repair performance had generally been maintained at a good level since 2011.[468]

Assessment

16.48 In light of the above, we did not find evidence to support third party concerns that BT had in the past circumvented existing regulation. Absent evidence of this ability, we therefore provisionally concluded that it was not likely that the merged entity would in the future have the ability to degrade the quality of mobile backhaul it supplied to competing MNOs through Openreach.

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[465] Though the merger may expand the set of rivals that it might be profitable for the merged entity to foreclose.
[466] Appendix D.
[467] BCMR May 2015 consultation, paragraphs A17.140 & A17.162.
[468] BCMR May 2015 consultation annexes, paragraph A17.167.

16.49 Further details of our assessment are set out in paragraphs 125 to 135 of Appendix K.

Strategy 3 – Foreclosure through frustration of innovation by Openreach or through Openreach's investment decisions

16.50 We then considered whether the merged entity could discriminate against rival MNOs through innovation or its investment decisions, focusing on those technologies that would have to be developed by Openreach.[469]

16.51 As described in chapter 4 (Regulation), Openreach is required to follow the SoR process when developing new products. The SoR process requires Openreach to evaluate each request on the basis of its impact on Openreach only, without consideration of the implications for the rest of BT.

16.52 Some third parties (Sky and Vodafone) were concerned that this process was not sufficient to guarantee the equal treatment of all CPs. They identified two technological developments where the merged entity could have the ability and incentive to frustrate innovation, namely:

(a) the development of infrastructure for small cells; and

(b) backhaul products supporting Cloud-RAN technologies.

16.53 We recognised that if Openreach was able to discriminate against rival CPs, the merger may increase its incentive to do so and in particular to discriminate against other MNOs. Withholding or delaying technology could increase rival MNOs' costs, and/or reduce the quality of their retail offering or otherwise reduce their competitiveness at the retail level.

16.54 We noted that MNOs relying, directly or indirectly, on Openreach's active backhaul products might be discriminated against if:

(a) the merged entity offered mobile backhaul products more suited to the needs of its mobile division than to those of competing MNOs;

(b) the merged entity blocked or delayed developments in backhaul technology which would benefit competing MNOs more than its mobile division; or

[469] We consider *(i)* a possible foreclosure strategy relating to technologies that could be offered by BT Wholesale, such as phase synchronisation in paragraphs 16.142–16.144; and *(ii)* a possible foreclosure strategy involving access to new backhaul technologies affecting the products covered by the current contracts between BT Wholesale and the MNOs in paragraphs 16.145–16.158.

(c) the merged entity planned the development of its fixed network infrastructure in a way that favoured the needs of its mobile division.

16.55 We therefore considered the extent to which Openreach could discriminate against (and so foreclose) rival MNOs in relation to the following:

(a) The development of small cells.

(b) The development of Cloud-RAN.

(c) The development more generally of new Openreach products.

(d) Other strategic decisions taken by Openreach.

Concerns relating to the development of small cell infrastructure

16.56 The future development of small cell networks is recognised by all MNOs as important to address the expected increase in mobile data traffic, particularly in areas of high population density. Small cells require both a physical location and connections to both power and backhaul (in the same way as a macrocell).

16.57 Openreach will have an important role in the development of any small cell network, as it will be a key provider of the necessary fibre backhaul. Openreach also owns a very large network of street cabinets, which are a natural place where small cells could be located on or nearby (given that they contain both a power and backhaul connection).

16.58 Sky was concerned that the merged entity might have the incentive to design the fibre infrastructure to support a small cell site in a non-scalable way, such that technically only one or two backhaul links could be provided to the site. This would limit the number of CPs that could share a small cell site to one or possibly two, favouring the CP that moved in first. With EE installed at a site first, it would gain a significant first-mover advantage and rival MNOs would be foreclosed.

16.59 We note that [✄]. This may shed some doubts on the merged entity's ability to acquire any first-mover advantage in the event that Openreach's small cell infrastructure was developed in a non-scalable way.

16.60 On the other hand, the cost for the merged entity of acquiring access to small-cell infrastructure from Openreach would be lower than for other MNOs, as the merged entity would take into account only Openreach's incremental costs and not the price charged, which would be seen as an internal transfer. This may increase the incentive to purchase access to

Openreach's infrastructure for strategic reasons, as a way to foreclose rival MNOs.

16.61 We therefore considered whether the merged entity would have the ability to pursue this strategy, a key component of which would be that MNOs could not use alternative sites (other than those owned and operated by Openreach) for small cell deployment.

16.62 Ofcom told the CMA that generally there was wide availability of sites that could be suitable for small cell deployment. This suggests that, even if the merged entity designed its fibre infrastructure in a non-scalable way, this might not foreclose rival MNOs, as they could find alternative locations nearby the existing sites.

16.63 The merging parties told the CMA that key locations for small cells would be in areas where footfall was highest, above head height and occurring at regular intervals; so making shop fronts, lamp posts, bus stops and billboards particularly attractive. There were several important providers of such sites:

(a) BT has access to about 80,000 locations, eg telephone kiosks, exchanges and telegraph poles, although the merging parties noted that it would be rare to find a telegraph pole in the required urban locations.

(b) Virgin and Arqiva have access through a joint arrangement to more than 400,000 locations.[470]

(c) Vodafone has signed a deal with JCDecaux that gives it access to owned bus shelters, billboards and street furniture.[471]

(d) National retail chains have a large portfolio of potential locations.

(e) In London, Transport for London owns many potential sites for small cells.

16.64 In light of the above, we considered that, if small cells became more important, it was unlikely that the merged entity would be able to pursue a foreclosure strategy that would prevent other MNOs from also deploying small cells.

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[470] See TechWeekEurope article (20 February 2015), 'Virgin Media and Arqiva agree small cell partnership for better urban 4G'.
[471] See TechWeekEurope article (10 December 2014), 'Vodafone to deploy small cells at bus stops and billboards'.

Concerns relating to Cloud-RAN

16.65 Cloud-RAN is a technology that brings the radio access control, currently deployed close to base stations, further into the network and enables active management of spectrum resources and capacity across multiple cells in an area. This may be particularly useful to MNOs that experience spectrum-related capacity constraints. Cloud-RAN requires very low latency, which is not provided by current Ethernet services. However, this could be supported by either dark fibre or new active products which are currently being developed by Openreach.

16.66 It is reasonable to consider that in the counterfactual Openreach would have an incentive to continue the development of products to support this new technology. However, [✂].This suggests that this technology may be more beneficial to rival MNOs than to the merged entity's mobile division. We therefore considered whether the merged entity would have the incentive post-merger to cease developing products supporting this technology or restrict access to such products.

16.67 We found that there were arguments suggesting that the merged entity may have limited ability to harm rival MNOs by foreclosing supply of these products. In particular:

(a) While it is true that changes in the network architecture of radio access networks can be a way for MNOs to address the challenge of providing adequate capacity to meet users' increasing demand for mobile data, there are currently several architectures being discussed by industry with no specific solution yet emerging as the best option; Cloud-RAN is just one of the possible evolutions of current architectures. Moreover, we understand that efficiency benefits and capacity uplift can also be delivered by the technology upgrades from LTE to LTE-Advanced.

(b) It is also plausible that Cloud-RAN would be used especially in urban areas with high capacity needs. EE told the CMA that even in countries where dark fibre was widespread, Cloud-RAN had been used only in certain areas. In urban areas alternative providers of backhaul are usually available.

16.68 In light of the above, we provisionally concluded that it is unlikely that the merged entity could harm rival MNOs through this foreclosure strategy.

Concerns relating to discrimination in the development of new Openreach products

16.69 As explained in Appendix D, the SoR process is the way in which third party CPs request Openreach to develop specific products that support that CP's business needs.

16.70 We therefore considered whether the merged entity would have the ability and incentive to discriminate against rival MNOs in the way Openreach responds to SoRs. It appeared likely that BT already had an incentive to discriminate in this way against its current rivals in fixed communication services. For this reason, we assessed what evidence there was that BT had engaged in discrimination in the SoR process to date, as this could be indicative of whether BT has now, and would therefore have post-merger, the ability to discriminate against rivals.

16.71 We found that the SoR process is subject to intense scrutiny. Openreach, the Equality of Access Office and the Office of the Telecoms Adjudicator (OTA2) jointly review the status of SoRs every month. Ofcom observes these discussions and also participates with Openreach, the EAO and the OTA2 in monthly reviews of SoRs that closed in that month, to check that procedures have been followed and the SoRs have been correctly closed.

16.72 In its latest annual report, the EAB expressed concerns that the SoR process may be excessively lengthy, especially in relation to Ethernet requirements. However, the EAB was satisfied that the process was operating equivalently and without issues.[472]

16.73 Finally, CPs have the right to appeal to Ofcom if they think they have been discriminated against in the treatment of an SoR. Ofcom has so far received only two formal complaints, and has dismissed both of them.[473]

16.74 In light of the lack of any evidence of BT using the SoR process to discriminate against its current rivals (which suggests that BT does not have the ability to do so), and the countervailing regulatory constraints that BT would face if it attempted to do so post-merger, we provisionally concluded that it was unlikely that the merged entity would be able to harm rival MNOs by pursuing this foreclosure strategy.

[472] EAB annual report 2015, p17.
[473] See Ofcom, 'Dispute between TalkTalk Group and BT Openreach about single jumpered MPF' and 'Dispute between Opal Telecom and BT about BTs Average Porting Conveyance Charge (APCC)'.

Concerns relating to other strategic decisions taken by Openreach

16.75 Third parties expressed the concern that the merged entity could prioritise the design of its fibre footprint to support its own mobile demand, at the expense of rival CPs. For example, it could prioritise the building of fibre links to the geographic areas where its capacity needs were highest and where it could benefit the most from small cell offload.

16.76 We note that the annual operating plan put forward by Openreach must be approved by BT's board. While from Openreach's point of view, capex is an outcome of the orders that are received from CPs, which are prioritised on an equivalent basis, BT's board may be in a position to influence investment decisions based on their impact on the rest of BT. Therefore, should different investment strategies have different impacts on BT and other CPs, it is possible that BT would have the ability to discriminate in favour of its own divisions.

16.77 We found that any ability to discriminate would not be merger specific. The merger, however, would increase the set of BT's rivals that could be discriminated against, which would then include the MNOs. Therefore, we considered whether any incremental incentive to discriminate against rival MNOs would be sufficient to influence Openreach's investment decisions. In particular, we assessed whether the merged entity would have the incentive to plan the development of Openreach's fibre infrastructure in a way that favoured its mobile division.

16.78 We considered that the change in BT's incentives would not be significant enough to modify its choices in terms of fibre footprint, for the following reasons:

(a) The fibre infrastructure used to provide mobile backhaul is also used for business connectivity and fixed SFBB services. The broadband market being much larger and more valuable than mobile backhaul (see for example Table 3.2), it is likely that the development of fibre infrastructure will be mostly driven by demand for SFBB, not by mobile backhaul needs.

(b) Most of the new radio sites that MNOs will have to connect to fibre will be small cells, which, according to the merging parties, will be deployed mostly in urban areas (80% of the total). We found that in urban areas there are often competing providers of backhaul alternatives to BT. Moreover, the areas in which the various MNOs have highest capacity needs are likely to largely overlap, since these would be the locations where mobile traffic in general is highest. It appears that there would

therefore be limited possibility for the merged entity to prioritise fibre deployment in areas where EE has high capacity needs but other MNOs have not.

(c) The deployment of fibre infrastructure in a way that directly discriminated against rival MNOs would be considered a breach of the EOI requirement Openreach is subject to. MNOs could then bring a formal dispute to Ofcom.

16.79 We therefore provisionally concluded that, whilst the merged entity might have the ability to pursue this strategy, it would be unlikely to have the incentive to do so.

Strategy 4 – Foreclosure through supply of BT Wholesale's managed backhaul services at contract renewal

16.80 We then considered a potential foreclosure strategy that involved the merged entity foreclosing rival MNOs' access to managed backhaul services at contract renewal.[474]

16.81 Third parties raised concerns that the merged entity might have the ability and incentive to refuse to supply rival MNOs with managed backhaul at the time when their current contract with BT Wholesale would be renewed. In particular, MNOs were concerned that BT Wholesale might decide not to offer some products that it would make available only to the merged entity's mobile division. Some third parties submitted that, if such a strategy was carried out, this could have substantial implications for rival MNOs, because in many cases they would not be able to source alternative managed backhaul supplies and would likely incur substantial costs in attempting to replicate the BT managed service (through self-supply). Some third parties submitted that this could therefore have significant implications for the competitiveness of rival MNOs in the retail mobile market.

16.82 We assessed these concerns in two parts:

(a) First, we considered whether the merged entity could harm rival MNOs (by increasing the cost or reducing the quality of the managed backhaul available to those MNOs) by refusing to supply them managed backhaul (ie total input foreclosure) and whether it would have the incentive to do so.

[474] We assess a foreclosure strategy under current contracts separately from paragraph 16.132 (Strategy 5).

(b) Second, we considered whether the merged entity could harm rival MNOs (by increasing the cost or reducing the quality of the managed backhaul available to those MNOs) by offering them worse contractual terms or degrading the quality of managed backhaul services at contract renewal and whether it would have the incentive to do so.

Withdrawal of supply (total foreclosure)

16.83 In relation to a total foreclosure strategy, we assessed:

(a) whether BT Wholesale could, by withdrawing the supply of managed backhaul, impose on rival MNOs a cost increase or a reduction in the quality of the service, because they would have to source alternative managed backhaul supplies and/or replicate the BT Wholesale managed service (ie ability); and

(b) whether the withdrawal of supply would be profitable for the merged entity (ie incentive), by estimating and comparing:

(i) the minimum reduction in the foreclosed MNOs' number of customers that, taking into account the merged entity's recapture rate, would make a foreclosure strategy profitable; and

(ii) the MNOs' expected customer loss if a foreclosure strategy was carried out.

16.84 In relation to *(b)*, we considered that the merged entity would be likely to have the incentive to refuse to supply a rival MNO only if the expected loss of MNOs' retail customers would be at least equal to the minimum level that would make foreclosure profitable (ie at which the merged firm's gain in profit from attracting extra retail customers would exceed the foregone profit in backhaul).

16.85 We set out our assessment of ability and incentive below.

The ability to increase prices or reduce quality

16.86 To determine whether refusal to supply by the merged entity would be likely to lead to a price rise (or quality degradation) in the managed mobile backhaul services supplied to rival MNOs, we first assessed what competitive constraint BT Wholesale faced pre-merger.

16.87 The options available to rival MNOs as alternatives to purchasing managed mobile backhaul services from BT Wholesale are:

(a) alternative providers; and

(b) self-supply using Openreach inputs.

16.88 In relation to alternative suppliers, the parties told the CMA that the Openreach inputs that BT Wholesale had access to were available on the same terms to other potential suppliers and therefore BT Wholesale had no ability to raise the price of its managed backhaul services.[475] This was consistent with Ofcom's 2013 BCMR statement, which found that other CPs (including Vodafone and Virgin Media) with core networks could replicate the MEAS service offered by BT Wholesale without requiring additional backhaul infrastructure, by using regulated Openreach inputs.[476]

16.89 However, we found that no alternative operator currently provides managed backhaul services using Openreach inputs. This appears to be because it is difficult to achieve sufficient economies of scale and scope. For example, Virgin Media is competitive in the areas within its network's footprint,[477] but it may not be so in areas where it has to rely on Openreach's inputs.

16.90 Third parties submitted that there are economies of scale and scope in combining traffic between sites and between different uses (ie combining mobile backhaul traffic with broadband backhaul traffic or enterprise leased lines traffic). Aggregating traffic into high capacity links results in lower costs per unit of bandwidth. BT's geographic reach and the comprehensive scope of its downstream business, covering not only managed backhaul for mobile operators but also for enterprise customers and for residential broadband, means that it has, in many locations, potential opportunities to aggregate more traffic than other individual CPs.

16.91 In relation to self-supply, we found that [✂].

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[475] In addition, the parties noted that the additional charge referable to the unregulated service layer was very small compared with the charges made for the underlying regulated inputs. In fact, in 2014/15, Openreach regulated costs accounted for approximately [✂]% of BT Wholesale's revenues from MEAS.

[476] Specifically:

> Provided OCPs (Other Communication Providers, ie other than BT) have built their own core networks they should be able to replicate a MEAS solution without having additional access and backhaul infrastructure. Furthermore, it is likely that ASN locations where OCPs would be providing backhaul services cover a significant proportion of the population and will include the main LLU exchanges and leased lines traffic. Therefore, providers such as CWW (Cable & Wireless) and Virgin (Media) should be able to combine traffic over high capacity backhaul links and achieve economies of scale and scope, even if they have not built capacity to those locations. This means that, in the presence of upstream regulated Ethernet services, there should not be barriers to OCPs replicating a MEAS solution. Therefore, we would expect BT Wholesale to be constrained in its pricing of these downstream services, either due to threat of competition or rivals entering to provide similar managed services.

2013 BCMR, paragraph 7.157.

[477] Virgin Media told the CMA that, within the footprint of its cable network and subject to BT complying with its current SMP conditions, it was on an equal footing with BT in competition for mobile backhaul. [✂]

16.92 We considered that BT Wholesale would be aware of or have a good indication as to what the cost of an MNO's next best alternative would be and so would be pricing its MEAS service at or slightly below that cost.[478] We therefore considered that, in light of this:

(a) if the next best alternative was self-supply, refusal to supply by the merged entity would have limited impact on the cost of backhaul to that MNO, since the cost (and quality) of self-supply would be unchanged; and

(b) if the next best alternative was an alternative supplier, a foreclosure strategy would lead to a price increase (or quality degradation) if, absent the competitive pressure from BT Wholesale, the remaining providers had an incentive to raise their prices or reduce quality.

16.93 We therefore assessed the merged entity's ability, through a total foreclosure strategy, to increase the price (or reduce the quality) of backhaul services used by MNOs by considering what options were available to each MNO in the event that BT Wholesale refused to supply it with managed mobile backhaul services.

- *Vodafone*

16.94 [✂]

16.95 [✂]

16.96 In view of the considerations in paragraph 16.92(a), it appears therefore unlikely that the merged entity would have the ability to foreclose Vodafone by increasing prices or reducing quality of managed backhaul products at contract renewal time.

16.97 [✂]. Although the merged entity may be able to impose a significant cost increase on Vodafone in relation to these sites, [✂] makes it highly unlikely that this could have a significant impact on Vodafone's overall costs.[479] Moreover, we considered that BT would have an incentive to charge a high price at these sites even pre-merger.

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[478] For example, the price difference between Virgin Media and BT Wholesale at a tender launched by MBNL in 2014 was around [✂]%. [✂]
[479] [✂] Table 1 in Appendix K).

- *Telefónica and H3G*

16.98 Currently, H3G's and Telefónica's[480] preferred alternatives would be either using dark fibre supplied by companies like CityFibre or Zayo ([✄]), or purchasing managed backhaul services from Virgin Media or from other potential suppliers ([✄]). The most likely potential suppliers of managed mobile backhaul would be Vodafone, which already self-supplies part of its fibre circuits, and TalkTalk.

16.99 Our assessment of alternative suppliers is set out in detail in Appendix K, paragraphs 139–147.

16.100 In summary we found that:

(a) Virgin Media and BT Wholesale are currently offering very similar prices.

(b) Dark fibre from companies like CityFibre or Zayo is still not available on a large scale and would not be available in a significant part of the country, especially in rural areas. Thus the possibility of sourcing dark fibre would be unlikely to impose a competitive constraint to prevent a price rise by Virgin Media in the event of weakening competition from BT Wholesale.

(c) In principle, Vodafone could provide the same service to other MNOs. However, Vodafone may be unable to supply backhaul at the same prices as BT Wholesale and might not have an incentive to compete strongly for the provision of backhaul, as this would favour its rivals.

(d) The merging parties see TalkTalk as the most likely entrant into the market for managed mobile backhaul, as it owns a quite extensive network and already competes in the provision of Ethernet products to non-MNO customers. However, [✄].[481,482]

16.101 In light of the evidence we obtained, in the case of reduced competition from BT Wholesale, we considered that neither Vodafone nor TalkTalk would be

[480] In this subsection we consider the implications of the theoretical framework for the case of foreclosure of Telefónica and H3G. Additional considerations applying exclusively to H3G will be dealt with in the next subsection.
[481] [✄]
[482] The merging parties suggested that, in case of a foreclosure strategy from the merged entity, TalkTalk might have an increased incentive to supply mobile backhaul because, having an MVNO contract with Telefónica, it would be affected by the increase in backhaul costs. However, TalkTalk's small market share in the retail mobile market ([✄]% in terms of subscribers), even in relation to its host MNO, which has a [✄]% market share, implies that the impact on TalkTalk of an increase in backhaul costs is likely to be too small to significantly modify TalkTalk's incentives in relation to the supply of backhaul to MNOs.

likely to impose sufficiently strong competitive pressure to keep the prices and quality of managed backhaul services at their pre-merger levels.

16.102 Our analysis therefore suggested that the merged entity could have the ability to increase the cost or reduce the quality of managed backhaul services purchased by H3G and Telefónica, when their current MEAS contracts are due for renewal.

16.103 We also identified an additional consideration relevant to the position of H3G in particular. Backhaul needs for 3G services are sourced together by EE and H3G through the MBNL joint venture. The following principles guide the way in which backhaul is sourced:

(a) [✂]

(b) [✂]

(c) [✂]

16.104 [✂]. They will therefore govern the choice of backhaul supplier at the expiry of the current contract with BT Wholesale in [✂]. According to H3G, however, these arrangements [✂]. Unilateral deployment would, of course, be more costly for both MNOs, but more so for H3G, which could see the cost of its backhaul almost double even in the absence of any price increase from BT Wholesale, should EE decide to proceed unilaterally. EE's costs would increase less than H3G's because, as a result of the vertical integration with BT, the actual costs of backhaul would be lower for EE, as only the incremental cost of provision would be taken into account. The implications for EE's costs are included in our analysis of the incentives to foreclose.[483]

Estimating the loss of MNOs' customers that would make foreclosure profitable

16.105 Having concluded that the merged entity could have the ability to impose on H3G and Telefónica an increase in the cost of backhaul, we estimated whether this would be large enough to make a foreclosure strategy profitable. Our detailed analysis and calculations are set out in Appendix K, paragraphs 171–221.

16.106 We summarise our approach and findings in the remainder of this section.

[483] The merging parties told us that, post-merger, [✂]. We note, however, that it would be very costly for H3G to leave MBNL before 2031.

16.107 In order to assess whether the merged entity would have an incentive to withdraw the supply of managed backhaul to rival MNOs, we developed a vertical arithmetic model. We started by estimating the minimum number of retail customers that needed to be lost by the foreclosed MNOs in order to make total foreclosure profitable. As explained below and more extensively in Appendix K, the model is based on variables around values which are subject to significant uncertainty. To compensate for this, we assumed very conservative values, which we recognised bias the estimation towards lower values of required customer loss, and so make the foreclosure strategy more profitable. This approach was designed to ensure that we did not overlook a potential foreclosure effect. (If we then found incentive, we recognised that our conservative assumptions would need to be further tested).Specifically, we assumed that:

(a) The merged entity would lose the totality of BT Wholesale's backhaul profits from the relevant circuits, but would recover Openreach's profits from the same circuits. This reflected the fact that, in large parts of the country, there is no provider of backhaul access segments alternative to Openreach. We considered this assumption to be conservative (ie giving the strongest possible incentive to foreclose), since foreclosed MNOs might decide to use more Virgin Media circuits or dark fibre, or install more microwave links.[484]

(b) The retail gain from customers that switched to the merged entity would equal the retail margin on mobile services, but increased by a factor of 20%. This adjustment allowed for the additional margin that may be gained by cross-selling fixed communication services to these new mobile customers, and is again conservative.

(c) The retail customers from the foreclosed MNOs (and from the MVNOs they host) would divert to the merged entity and to Vodafone (which we considered could not be foreclosed) in proportion to their respective current shares of the mobile market.[485]

16.108 In summary, our analysis suggested that, for total foreclosure to be profitable, H3G, and its hosted MVNOs, would need to lose at least [✂]

[484] BT submitted that this approach might underestimate the true losses. BT considered that the loss of traffic generated by MNOs through BT's shared aggregation network (21CN) would increase the marginal costs of providing other backhaul and non-backhaul services, which also use 21CN. The main reason for this was related to port costs. We considered it difficult to estimate the impact of the loss of mobile traffic on BT Wholesale's ability to compete in other markets. BT's observation seemed to imply that the impact would be significant especially in remote areas, where opportunities for other business were likely to be limited. This suggested that the overall impact may not be large. In any case, we considered that there was no need to precisely estimate this effect, as our analysis suggests that, even with a potentially underestimated wholesale loss, there would be no incentive to foreclose.

[485] This assumption may bias the estimation in either direction.

retail customers, corresponding to [✄]% of their customer base. Telefónica, and its hosted MVNOs, would need to lose at least [✄] retail customers, or [✄]% of their customer base for total foreclosure to be profitable.

Estimating the expected decrease in MNOs' customers

16.109 In order to estimate the expected impact of supply withdrawal on the MNOs' customer population, we:

(a) estimated the increase in backhaul costs caused by foreclosure and what part of it could be expected to be variable;

(b) assessed to what extent these costs would be passed-through into retail prices and how retail customers would respond to price increases; and

(c) considered whether the switch to alternative backhaul providers would lead to a significantly lower quality of mobile retail services and whether this might increase the number of customers lost by the foreclosed MNOs.

The expected increase in backhaul costs

16.110 When considering the price charged by an alternative backhaul supplier, we took account of the fact that the current prices would be influenced by the competitive constraint of BT Wholesale and, therefore, would be likely to increase in the case of a foreclosure strategy, as seen in paragraph 116.

16.111 We considered that the best approach would therefore be to anchor the expected prices to a level below which post-merger competition would likely keep them. However, backhaul providers were not able to provide approximations of the prices they would be willing to charge. Therefore, we based our analysis on estimates the MNOs provided us of the cost increase they expect to incur in the event that they were to switch away from BT Wholesale. The details of our estimations are in Appendix K, paragraphs 193–201. In the estimation we excluded the cost elements that were clearly fixed in nature (eg parallel running costs), as fixed costs were unlikely to be passed-through to retail prices. For the remaining costs, we applied a fixed/variable ratio derived from H3G's estimate of variable backhaul cost illustrated in Appendix K, paragraphs 89–95.

16.112 We estimated based on the above conservative methodology that variable backhaul costs might increase up to £[✄] for both H3G and Telefónica. For the reasons explained in Appendix K (paragraph 199), we consider this estimate to be an upper bound for the increase that could be expected if the merged entity withdrew supply of managed mobile backhaul.

The extent of pass-through and customer loss

16.113 We then considered the extent to which the conservatively estimated increase in variable backhaul costs would be passed-through to retail prices and the impact on MNOs' customer churn, which would depend on the characteristics of demand faced by MNOs.

16.114 In our analysis, presented in full in Appendix K, we considered a simplified model in which MNOs sell a single retail product. We considered the cases of linear and of isoelastic demand.[486] The parameters of the demand functions are estimated based on data on revenues, customers and variable costs provided by the MNOs. We have also performed a sensitivity analysis, by varying the value of the price elasticity of demand and of the variable cost increase.

16.115 Under our base scenarios and linear demand, the expected customer loss for both H3G and Telefónica is much smaller than the value that would make foreclosure profitable for the merged entity (as in paragraph 1.130): expected churn is lower than [✂] for each MNO. This remains the case even assuming a significantly higher increase in variable backhaul costs and a higher demand elasticity. Under isoelastic demand, on the other hand, expected churn is close to the critical value that makes foreclosure profitable (see paragraph 16.108) in the case of Telefónica, while it is approximately 12% higher in the case of H3G. However, we noted that isoelastic demand assumes an extremely high pass-through of costs (above 100%), and that other assumptions in the model are biased towards making foreclosure easier. Taking all of the above in the round, we did not provisionally find that it is likely that the merged entity would have an incentive to withdraw supply post-merger.

Quality differences and their impact on MNOs' competitiveness

16.116 Telefónica told us that BT Wholesale may be the only supplier offering IP/VPN-based services. However, [✂].

[486] Linear demand curves assume demand becomes more sensitive to changes in price as the price level increases and imply a pass-through rate of marginal costs into prices of 50%; isoelastic demand curves assume that demand is equally sensitive to changes in price regardless of the price level and imply a pass-through rate above 100%. These two demand specifications are widely used in merger analyses for their tractability.

16.117 Telefónica believed that, during the migration period, there might have to be frequent controlled outages and that unforeseen incidents would be more likely. H3G told us that, as with all migrations, there was the potential for service impact at the cutover point with an alternative provider. In some instances this was likely to be a [✂] outage at each cell site. H3G, therefore, expected that the impact on customer churn would be significant. H3G, however, described this situation just as not ideal and as adding a further layer of complexity that H3G would have to manage, noting [✂]. We also note that any impact on service quality would be transitory.

16.118 Overall, it did not appear that switching to alternative backhaul suppliers would lead to a significantly or permanently lower quality of mobile retail services. We therefore did not expect additional customer churn as a consequence of quality degradation.

Provisional conclusion

16.119 Based on the analysis outlined above, we provisionally found that, whilst the merged entity might have the ability to engage in this foreclosure strategy, it was unlikely that it would have the incentive to withdraw the supply of managed mobile backhaul services when the contracts between BT Wholesale and rival MNOs are due for renewal.

Analysis of partial foreclosure

16.120 The analysis above concerned withdrawal of supply (ie total foreclosure) at contract renewal. However, we identified other foreclosure strategies that the merged entity could try to foreclose rival MNOs at contract renewal: for example, by:

(a) offering backhaul at higher prices;

(b) decreasing the quality of service; or

(c) offering inferior technologies compared to its own mobile division.

16.121 In assessing these partial foreclosure strategies, we first considered the materiality of a quality degradation that could be imposed by BT Wholesale. We then considered whether the merged entity would have the ability to impose it.

Materiality of quality degradation

16.122 BT told the CMA that [✂].

16.123 There are therefore limited ways in which BT Wholesale can degrade the service provided to MNOs without significantly impacting the services provided to other customers. The two main actions BT Wholesale can take are:

(a) slowing the exchange of information between the MNOs and Openreach, with the effect of delaying fault repairs and the deployment of new circuits, potentially causing delays of 'several weeks';[487] and

(b) denying the MNOs access to new products developed by Openreach during the life of the contract.

Ability to partially foreclose

16.124 [✂]. For this reason, Vodafone is unlikely to become the target of partial foreclosure strategies. We therefore considered only the potential partial foreclosure of H3G and Telefónica.

16.125 Post-merger, BT Wholesale would not offer MNOs less attractive contractual terms than in the counterfactual. This is because, in the counterfactual, MNOs would be offered similarly attractive conditions by alternative providers (see paragraphs 16.92), so that a significant worsening of the conditions offered by BT Wholesale would induce MNOs to switch supplier. Post-merger BT Wholesale will similarly be competing with alternative providers, and we have established that the merged entity has no incentive to withdraw supply and therefore will try to win the contract at renewal time. As a result, there is no reason to conclude that BT Wholesale would offer worse terms at contract renewal post-merger.

16.126 On the other hand, after a new contract between BT Wholesale and the MNOs is signed, the merged entity's incentives will change: there may be an incentive, at that point, to delay fault repair or the supply of new connections, and to deny MNOs access to new technologies or backhaul products that may emerge during the contract's lifetime.

16.127 When negotiating with BT Wholesale, the MNOs will be aware of the merged entity's changed incentives and will request to be protected from or compensated for the risks associated with entering into the contract. Given that alternative providers will be available, the MNOs will have a sufficiently strong bargaining position to be able to impose these terms as a condition for contracting with BT Wholesale. Given that, as concluded in paragraph

[487] In relation to fault repairs, we have seen in paragraph 16.23(c) that, according to Ofcom, given the low fault rate of backhaul circuits, delays in repair would not have a significant impact on MNOs' competitiveness.

16.120, BT will want to supply the MNOs, it is likely that the terms negotiated under competitive pressure will include provisions which deal with performance risks, for example:

(a) clear monitoring procedures and financial consequences in case of service degradation; and

(b) clear paths for the adoption of new features and technologies that will become available during the life of the contract.

16.128 We note that there could be some risk of quality degradation as a result of behaviour by BT in contract that is difficult to detect or because some technological developments cannot be envisaged at the outset of the contract. However, we considered that these potential risks could be mitigated by the MNO, given the availability of alternative options, by negotiating lower prices with BT or shorter-term contracts. We understand in this regard that length of contract has been an important factor in previous negotiations between MNOs and BT Wholesale.

16.129 We also consider that, to the extent that these potential risks could arise, their impact is likely to be limited, because:

(a) quality reductions that are not detectable by the MNO are not likely to have an impact (ie be detectable) at the retail level (and thus impact that MNO's competitive offering);

(b) Important technological innovations are usually developed over the course of several years and so are likely to be envisaged at the time the contract is signed; and

(c) Even if such risks materialised, any such impact would only be for the duration of the contract.

16.130 In light of the above, we therefore consider that the existence of these potential risks would not be such to make an MNO unlikely to contract with the merged entity.

Provisional conclusions

16.131 MNOs will have the ability to protect themselves against most material risks through commercial negotiations and BT Wholesale's ability to impose a service deterioration is in any event limited. Therefore, we consider that the merged entity would not have the ability to partially foreclose MNOs in the event of new backhaul contracts between them and BT Wholesale.

Strategy 5 – Foreclosure by increasing the price or reducing the quality of BT Wholesale's managed backhaul services under the current contracts

16.132 As noted previously, MNOs in the UK fulfil most of their fibre mobile backhaul requirements by buying managed backhaul services under long-term contracts from BT Wholesale. Whilst the underlying Openreach inputs form part of this service, the service itself is unregulated, including as regards price and quality.

16.133 These contracts contain some protection for the MNO in relation to price and quality of service. However, they also contain significant minimum volume requirements, limiting the MNO's ability to switch supplier. Figure 16.1 below shows the number of fibre Ethernet access circuits that MBNL (acting on behalf of EE and H3G), Telefónica and Vodafone are committed to maintain with BT Wholesale in the coming years.

Figure 16.1: [✂]

[✂]

Source: [✂][488]

16.134 Some third parties raised concerns that the merged entity could harm rival MNOs in contract by denying them access to innovation, increasing prices and/or reducing quality of BT Wholesale's managed fibre mobile backhaul to one or more competing MNOs.

16.135 We therefore assessed whether the merged entity could harm rival MNOs by pursuing the following strategies and whether it would have the incentive to do so:

(a) The denial of access by MNOs to innovations.

(b) The increase in price or reduction in quality of service of the services offered to each MNO, namely H3G, Telefónica and Vodafone.

Denying access to innovation

16.136 We considered that long-term contracts with significant minimum volume obligations could raise concerns if, during the lifetime of the contract, new

[488] The figure, however, does not take account of any volume for which the MNOs are committed but that had not been delivered by 31 March 2015. Therefore, to the volumes in the figure, we must add: for MBNL, [✂] new sites; for Telefónica, [✂] new sites; and for Vodafone, [✂] new sites. These circuits will be delivered in the next years and will remain committed to BT Wholesale for [✂] years.

backhaul innovations became available (or could be developed) that might be required by rival MNOs to the merged entity.[489]

16.137 Whilst BT might pre-merger have an incentive to amend contracts to allow MNOs access to these innovations (on commercial terms), post-merger BT may have an incentive to delay, refuse or otherwise offer access on worse terms to rival MNOs (for example, because doing so could give its own mobile division a competitive advantage).

16.138 The parties told the CMA that the existing contracts contained change control provisions which allowed for amendments to terms, including the price, to be agreed.[490] However, it was not clear that the current contractual terms would prevent BT from blocking access to such changes.

16.139 We asked third parties to identify any important innovations that could become available in the next few years. They identified:

(a) phase synchronisation; and

(b) access circuits with capacity above 1 Gbit/s.

16.140 We note that this concern arises for the duration of the current contracts and that MNOs would be able to negotiate on renewal access to alternative technologies. We therefore considered it reasonable to focus our assessment on innovations that were reasonably foreseeable in the next three to five years (being a similar duration to the current contracts). It is of course possible that an innovation may become available in that timeframe that MNOs are not yet aware of.

Phase synchronisation

16.141 One third party [✂] told the CMA that BT would delay the development of phase synchronisation, a technology that MNOs need in order to use TDD spectrum.[491] This technology would be needed by those MNOs facing capacity constraints sooner than EE would need it and thus BT could de-prioritise its development to harm those other MNOs. This could have implications on rival MNOs, which require this technology.

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[489] Such concern applies to Telefónica and Vodafone, whose contracts have a longer residual duration, more than to H3G. [✂]
[490] See parties' initial submission, paragraph 4.33.
[491] Time-division duplex (TDD) spectrum (or unpaired spectrum) allows the transmission of signals to and from a base station using the same spectrum band (unlike the case of frequency-division duplex (FDD) spectrum (or paired spectrum), in which signals to and from a base station are transmitted using separate bands).

16.142 However, we noted that alternative technologies are available, such as the use of GPS clocks for outdoor cells. According to one third party UK Broadband, which already uses TDD spectrum, these clocks are quite inexpensive.

16.143 We found therefore that the merged entity could have the ability to increase an MNO's costs associated with the adoption of this alternative technology. However, we provisionally concluded that any such cost increase would not be of a magnitude to significantly harm the MNO's ability to compete in the downstream market.

Access to circuits with capacity above 1 Gbit/s

16.144 We considered that potential foreclosure of access to this innovation could give rise to concerns, in particular given the expected increase in mobile traffic in the next few years and the consequent need for MNOs to upgrade their backhaul circuits to meet this demand, especially in urban areas.

16.145 We found that [✂]. Hence, we considered that BT Wholesale could have the ability to deny access to some or all rival MNOs to upgrades for the duration a particular circuit was committed to BT Wholesale, or charge a higher price for upgrades than it would have pre-merger. We therefore considered whether such a strategy could potentially make the foreclosed MNOs less competitive and, if so, if BT Wholesale would have the incentive to engage in it.

16.146 [✂]. We therefore focused our assessment on H3G and Vodafone. A more detailed analysis is developed in Appendix K, paragraphs 151–163.

Foreclosure of Vodafone

16.147 [✂]

16.148 Purchasing an additional circuit is likely to be more costly than upgrading the one already in use. A reasonable upper bound for the cost difference is given by what Vodafone pays for the existing 1 Gbit/s circuit.[492] However, given [✂], we considered that the cost increase would be sufficiently small not to have a significant impact on Vodafone's competitiveness. We also

[492] Vodafone always has an outside option: it can buy an additional circuit directly from Openreach. In the counterfactual, BT Wholesale would agree to upgrade the existing circuits for a price not lower than the regulated price of the upgraded Openreach circuit and not higher than the sum of this price and the rental charge of the circuit currently in use.

noted that the cost increase would be temporary, ending when the current circuits will no longer be committed to BT Wholesale.

16.149 In addition to duplication costs, [✂].

16.150 However, according to Ofcom, the latency of an alternative fibre route would be very similar for similar lengths. Moreover, it seems plausible that Vodafone would be able to use just the new circuit, which would have a capacity of 10 Gbit/s, and keep the old one for resilience purposes. Finally, [✂].

16.151 We therefore provisionally concluded that, if Vodafone was denied upgrades to higher capacity circuits during the life of its current contract, it would have a viable alternative in purchasing higher capacity circuits from Openreach – given that it only needs upgrades for a limited number of sites and the costs involved in purchasing additional circuits do not appear to be prohibitive. It is therefore not likely that the denial of upgrades would significantly harm Vodafone's ability to compete in the downstream market.

Foreclosure of H3G

16.152 H3G told the CMA that, [✂]. As seen in Figure 16.1, [✂].

16.153 [✂].[✂],[✂].

16.154 There would therefore remain many sites at which H3G may have to proceed with a unilateral deployment of additional backhaul capacity by 2018. [✂], and this constrains the amount that H3G would be willing to pay for circuit upgrades. [✂].

16.155 Post-merger, should BT Wholesale not offer circuit upgrades and should EE decide [✂] to source other circuits unilaterally, backhaul costs for H3G could significantly increase. Such a strategy would also increase the backhaul costs for EE, but to a lesser extent. In fact, while H3G would have to pay the full price of the new circuits, EE would take into account only the incremental cost sustained by Openreach in providing a new circuit (the price being just an internal transfer).

16.156 The merged entity may in principle have an incentive to increase the cost of backhaul for H3G, as this may reduce H3G's competitiveness in the retail mobile market. On the other hand:

(a) [✂]; the increase in H3G's costs in case of foreclosure would be, therefore, limited.

(b) H3G may decide to source the additional circuits from an alternative provider; given that capacity upgrades would be needed mostly in urban areas, Virgin Media is likely to be able to provide an available alternative. In this case, the merged entity would lose the wholesale margin on the additional backhaul capacity if it refused to supply H3G. In that event, the vertical arithmetic analysis developed in paragraphs 16.105–16.115 suggests that it would not have an incentive to foreclose.

(c) A foreclosure strategy during the life of the current contract may make H3G more likely to choose an alternative supplier at contract renewal, causing BT to forego backhaul revenues. We have provisionally concluded in (paragraph 16.119) that the merged entity has an incentive to continue to supply backhaul to H3G at contract renewal. This implies that the merged entity would also have an incentive to ensure H3G does not choose an alternative supplier at contract renewal and, therefore, not to refuse to upgrade H3G's circuits.

16.157 In light of the above, we provisionally concluded that the merged entity would be unlikely to have the incentive to force H3G to unilaterally deploy additional circuits.

Increase in price or reduction in quality of service of the services offered to individual MNOs

16.158 In this section we consider in turn possible foreclosure of H3G, Telefónica and Vodafone under their current contracts with BT Wholesale.

Foreclosure of H3G

16.159 As shown in Figure 16.1 above, [✂].

- *Ability to foreclose*

16.160 H3G submitted that it might be discriminated against in terms of the service quality provided for its [✂] traffic by BT Wholesale during the contract.

16.161 [✂]. We did not consider further the potential degradation of backhaul used for 3G, [✂].

16.162 [✂]

16.163 We noted that, in order for a network failure to affect a significant number of radio sites, it would have to occur at the level of BT Wholesale's core network. However, we considered that BT would have strong incentives to prevent and/or promptly repair such failures, because they would affect many customers (potentially including BT/EE itself). As set out previously paragraph 16.122, at that level BT Wholesale is not able to treat traffic differently according to its source. Therefore [✂], such an intervention would damage BT Wholesale's relation with many non-MNO customers.

16.164 H3G has also expressed the concern that, [✂].

16.165 However, we noted the fact that the areas where mobile traffic is highest were likely to be mostly the same for the two MNOs. This suggested that opportunities for discrimination of H3G may be limited.

- *Incentive to foreclose*

16.166 We noted that the pursuit of such a strategy in contract might lead to H3G seeking an alternative supplier of managed backhaul at contract renewal, leading to significant loss of revenue to the merged entity from [✂] (see our conclusion on total foreclosure at contract renewal in paragraph 16.119).

16.167 In light of this and the lack of or limited ability of the merged entity to pursue such a strategy without affecting its own supply (or its contracts with other CPs), we considered it unlikely that the merged entity would have an incentive to pursue this strategy.

Foreclosure of Telefónica

16.168 As shown in Figure 16.1 above, [✂]

16.169 [✂]

16.170 As we have seen in paragraph 16.122, [✂]. [✂]. We therefore consider that the merged entity is unlikely to have the ability to pursue this strategy.

Foreclosure of Vodafone

16.171 Figure 16.1 above and footnote 488 show that [✂].

16.172 Vodafone raised concerns that BT Wholesale might have the ability to reduce the quality of backhaul services provided under the current contract; in particular, it might have an increased incentive to delay fault repairs and the delivery of circuit upgrades. Vodafone told us that [✂], which might indicate that BT Wholesale had the ability to degrade the quality of service and that contractual protections are not sufficient to eliminate the incentive to do so.

16.173 Circuit deployments and repairs are performed by Openreach and, as we provisionally found above, there is no indication that Openreach can discriminate between customers; BT Wholesale's main role is managing the flow of information between the MNO (Vodafone) and Openreach. Vodafone told the CMA that, by slowing the flow of information, BT Wholesale might be able to delay the delivery of a new circuit by several weeks. [✂]

(a) [✂]

(b) [✂]

(c) [✂]

16.174 Notwithstanding the above, we consider that, given the limited length of the delays that can be caused by BT Wholesale (on top of those for which Openreach is responsible), the temporary and localised effects of such delays, and the small possible impact on costs relative to Vodafone's overall costs and revenues, it is unlikely that such a strategy could significantly affect Vodafone's competitiveness.

Assessment

16.175 The information we have collected suggests that the merged entity is unlikely to have the ability to foreclose Telefónica and Vodafone by increasing the prices or reducing the quality of the managed backhaul products sold to them under their current contracts with BT Wholesale. In the case of H3G, even if it is possible that the merged entity might delay the delivery of circuit upgrades, our analysis of the evidence available suggests that it would be unlikely to have an incentive to do so.

Strategy 6 – The pursuit of a margin squeeze strategy by the merged entity as a whole.

16.176 Vodafone has expressed the concern that the merged entity might have the incentive and ability to engage in a strategy of margin squeeze. As the merged entity would be both a supplier of inputs to MNOs and a downstream rival, it might harm rival MNOs by setting the difference between the wholesale prices of its inputs and its retail prices so low that rival MNOs would be unable to make a positive margin in the downstream markets. In general, a vertically integrated firm can engage in margin squeeze by either increasing the prices of the upstream input or by decreasing the prices of the downstream products. The first strategy (raising the upstream prices) is a form of vertical foreclosure and, as such, has already been analysed in the previous sections. This section, therefore, will concentrate on the second strategy: reducing the downstream prices (or, equivalently, increasing the products' quality keeping the prices unchanged).

16.177 Post-merger, EE will face lower backhaul costs, as it will only take into account the incremental costs for BT Wholesale and Openreach of providing backhaul; it may then be able to pass this cost reduction into retail prices, leading to a situation in which rivals, which face higher costs, cannot compete effectively (this is sometimes referred to as an 'efficiency offence'). Merger-specific efficiencies are generally not viewed as a problem, as they lead to lower prices to final customers. They might give rise to competition issues only if the price reductions, while beneficial in the short term, have negative long-term effects by making rivals unable to compete and driving them out of the market. This is the possibility that we will consider in this section.

16.178 Vodafone suggested that the merged entity could engage in a margin squeeze strategy by:

(a) reducing its retail prices for mobile services to a level that could not be matched by competing MNOs, given the wholesale prices they had to pay to the merged entity for backhaul services; or

(b) deploying more fibre backhaul than its competitors could economically deploy, and therefore being able to offer its retail customers a quality of service its competitors could not match.

Margin squeeze through a reduction of retail prices

16.179 In assessing whether the reduction in the cost of backhaul that EE would experience post-merger could be sufficiently large to allow a reduction of retail prices that could give rise to a margin squeeze, we considered:

(a) the difference between Openreach prices and LRIC for backhaul inputs;

(b) the amount that, in the counterfactual, EE would be expected to pay to Openreach (through its contract with BT Wholesale); and

(c) any further savings that EE could realise by replacing the circuits it currently sources from Virgin Media with BT circuits.

16.180 A detailed analysis is developed in Appendix K, paragraphs 164–170. We found that the reduction in backhaul costs would be very small if compared with the overall costs that a company like EE sustains. We therefore considered that the efficiencies generated by the merger would not be so large as to allow a reduction of retail prices that would give rise to a margin squeeze.

Margin squeeze through the deployment of more fibre backhaul

16.181 Vodafone expressed the concern that the merged entity may decide to substitute its microwave backhaul links with fibre circuits at all its base stations, therefore increasing the speed and quality of the mobile services that it could provide. As competing MNOs would have to pay Openreach's or BT Wholesale's prices for fibre backhaul to each of the base stations, they might not be able to replicate such speed and quality of service without raising their retail prices.

16.182 However, EE has told us that [✂]. Moreover, given the small incidence of backhaul on overall costs, [✂].

16.183 We therefore considered that the speed and quality of service that EE offered was not strongly influenced by the cost of backhaul. Post-merger, as a consequence, any increase in the quality of EE's retail services which would follow from the reduction in the cost of EE's backhaul would not be so significant to result in a margin squeeze.

Provisional conclusion

16.184 In light of our assessment, we provisionally find that the merger is not expected to result in an SLC in any market or markets in the UK as a result of an input foreclosure strategy by the merged entity in the supply of managed fibre Ethernet-based mobile backhaul.

17. Mobile backhaul: competitive assessment – customer foreclosure

17.1 As set out in the previous chapters, MNOs are able to use a number of different suppliers and technologies for mobile backhaul, including third parties supplying dark fibre.[493] At present, the availability of dark fibre is very limited. BT and Virgin Media (the backhaul suppliers with the most extensive physical fibre infrastructure) do not provide this product on a wholesale basis nationally or locally.

17.2 Some third parties (such as CityFibre and Zayo) have built or acquired some limited dark fibre networks on a local basis. Further network roll-out has often been in partnership with a prospective customer, which has the role of an 'anchor tenant' (ie provided enough guaranteed revenue to sufficiently mitigate the risk involved in investment by the fibre provider). The dark fibre provider may plan then to supply other customers using the same network, eg supplying wholesale local access to CPs (for example in the supply of FTTC[494] and FTTH[495]) or supplying services directly to commercial customers or local authorities.

17.3 EE currently sources mobile backhaul from BT Wholesale both directly and through MBNL, EE's joint venture with H3G. EE also sources some mobile backhaul from other third parties, including dark fibre from CityFibre.

17.4 CityFibre told the CMA that, absent the merger, MBNL would have been an anchor tenant for CityFibre to facilitate a broad roll-out of fibre across many towns and cities. CityFibre submitted that the merged entity would want to maximise self-supply and that, without it, a prospective roll-out would be on a smaller scale and/or slower, as CityFibre would be forced to seek alternative anchor tenants, on a local basis.[496]

17.5 H3G told us that CityFibre, Zayo and other dark fibre providers had the potential to challenge BT's market power in the provision of the UK's fixed-line communications infrastructure by deploying fibre networks in mid-sized towns and cities, business districts and long-distance routes between major population centres. It said that the merged firm would have the incentive and

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[493] MNOs can either self-supply extra inputs or commission a third party to provide other inputs on top of the dark fibre product.
[494] Access network consisting of optical fibre extending from the access node to the street cabinet.
[495] A form of fibre optic communication delivery in which the optical signal reaches the end user's home. Also known as FTTP.
[496] CityFibre said that MBNL, and EE unilaterally, were both keen on roll-out prior to merger announcement; but after that announcement, progress on further fibre roll-out with EE had stopped. CityFibre said that the result would be less competition to BT's various wholesale products, including mobile backhaul and also fibre products for businesses and households (via CPs).

ability to hinder emerging competition from dark fibre providers in mobile backhaul.

The theory of harm

17.6 We considered that, as a result of the merger, the merged entity might have an incentive to self-supply (ie source all of EE's and, if it were able to influence MBNL sufficiently, all of MBNL's mobile backhaul requirements from BT).

17.7 Given the limited number of alternative prospective purchases of mobile backhaul, we considered whether this could have the effect of foreclosing other actual or potential suppliers, including CityFibre. This could in turn impede the roll-out of fibre networks competing with BT and thereby lead to less competition, not only for mobile backhaul, but also more widely in the supply of wholesale SFBB inputs.

17.8 In this theory of harm, we focus on dark fibre. We did not think that Virgin Media's supply of backhaul to other buyers would be affected. If EE and/or MBNL were to cease purchasing backhaul from Virgin Media (the other main backhaul provider), we thought that the effect on Virgin Media would be small, since:

- *(a)* its backhaul revenues are small relative to its overall revenues and profits; and
- *(b)* backhaul is not a primary driver of its network roll-out decisions.

17.9 We therefore assessed the merged entity's incentive and ability to foreclose other actual and potential suppliers of dark fibre.[497]

Incentive

17.10 We provisionally found that the merged entity would be likely to have an incentive to self-supply as much mobile backhaul as possible, since:

- *(a)* it would only bear the true incremental costs of providing backhaul, which were likely to be considerably smaller than the prices currently charged by BT Wholesale to MNOs (and also cheaper than the Openreach regulated prices); and

[497] We note that in addition, in order to find an SLC we would also have had to consider the effects of any foreclosure on competition.

(b) by doing so, it might be able to weaken potential rival providers of fibre products (eg by preventing or slowing their roll-out), and benefit from this either by lessening a pricing constraint in affected services or by denying rivals in the retail mobile market the ability to purchase lower cost fibre provided by third parties (and so charge lower prices at the retail level).

17.11 We therefore considered that the merged entity would be likely to have the incentive to cease purchasing mobile backhaul from third party suppliers, including providers of dark fibre. This incentive is likely to arise from *(a)* alone, regardless of whether there is a strategic effect *(b)*.

Ability

17.12 Having established that the merged entity would likely have an incentive to self-supply, we then considered whether, by not purchasing dark fibre access for mobile backhaul from any other third party suppliers, it would have the ability to foreclose one or more of those suppliers.

17.13 We considered that foreclosure would be likely to occur only if, absent the merger, two conditions were met: first, that EE/MBNL would have agreed to purchase dark fibre access from at least one supplier;[498] and second, if there would not be alternative purchasers of dark fibre access (specifically, those suitable to act as anchor tenants). We therefore considered whether:

(a) EE or MBNL would have purchased from a new supplier absent the merger;

(b) the merged entity would be able to influence MBNL's decision making in this regard, to prevent or limit purchases it would otherwise have made from dark fibre suppliers; and

(c) the loss of EE and/or MBNL would have affected the roll-out of fibre networks, taking into account its importance as a customer and the presence of alternative potential anchor customers.

Likelihood of EE or MBNL purchasing from a new supplier

17.14 We first assessed the likelihood that, pre-merger, EE and/or MBNL would have sought to purchase mobile backhaul from a new supplier. The main attraction of dark fibre to MNOs is that costs do not increase with the volume of data carried (for foreseeable volumes), unlike managed services where

[498] For these purposes, we exclude the existing MBNL agreement with CityFibre in Hull, [✄], and since we understand that the lack of BT fibre in Hull makes a BT alternative unsatisfactory.

MNOs may need to lease more lines or higher volume lines. Against that, dark fibre may require a greater upfront investment, since the network operator will typically have to build out its network (at least connections to MNOs' base stations) and the MNOs will have to install equipment, whereas BT will typically already connect to, or pass closer to, base stations.

17.15 There was no direct evidence that EE or MBNL would definitely purchase further mobile backhaul from dark fibre suppliers, or (if they did so) the size of the purchase they would make or how many geographic areas would be involved. Therefore we sought EE's and H3G's views and examined internal documents.

17.16 Our review of EE's internal documents indicated that [✂]. Documents from 2014 suggested that [✂].

17.17 We also sought views from H3G, as EE's joint venture partner in MBNL. H3G told us that, to date, [✂]. H3G also noted that, whilst dark fibre suppliers were planning to deploy fibre networks in mid-sized UK towns and cities, to become a credible competitive constraint to BT those providers would need scale and wide geographic coverage. H3G considered that investment in fibre networks was particularly risky due to demand uncertainty, large sunk costs and long payback periods, and that dark fibre providers relied on anchor tenants to make deployment viable.

17.18 We also identified other factors that would have made EE and MBNL less likely, absent the merger, to purchase mobile backhaul from a new supplier. In particular, we noted that:

(a) BT was in the process of upgrading some of its network to higher capacity products. This would improve the quality of the mobile backhaul product that BT could provide (whether through BT Wholesale or Openreach), and therefore would have reduced the advantages of MBNL or EE purchasing access from an alternative supplier of fibre.

(b) In relation to Ofcom's BCMR proposals to mandate that Openreach provides access to dark fibre on regulated terms Appendix D, paragraph 63, we considered that:

(i) if adopted, these proposals could fundamentally change the options available to CPs (including EE and MBNL) that might otherwise have considered purchasing dark fibre from a third party;[499] and

(ii) these proposals may already be having a chilling effect on the development of dark fibre networks by third parties (and the willingness of prospective purchasers to enter into such contracts, whilst the proposals were still subject to consultation, ie until at least early 2016 when Ofcom expects to publish its final conclusions,[500] and possibly later if its decision is appealed. For example, CityFibre said that Ofcom's proposals had introduced quite a significant factor of fear, uncertainty and doubt into the industry over whether Openreach's dark fibre would become available and whether it would be set at the price point that Ofcom had indicated in its consultation documents. CityFibre said that its analysis showed that Ofcom's proposed price was 80% less in the regulated market than in London, which Ofcom had considered to be a competitive market, and so it could drive Openreach's competitors out of the market. CityFibre said that it was seeing this across a number of projects and opportunities and it had affected buying decisions and procurement decisions in the market.

17.19 We considered that the BCMR consultation appeared to have created significant uncertainty, making it likely that, regardless of the eventual outcome, in the counterfactual CPs would postpone their purchasing decisions until such time as Ofcom provided clarity on its approach to dark fibre.[501]

17.20 Therefore, whilst it is uncertain whether and to what extent Ofcom would mandate (and set prices in relation to) access to Openreach dark fibre, we considered that the perceived likelihood of access had made it unlikely that EE or MBNL would have sought to purchase backhaul from third party suppliers, at least prior to the final outcome of Ofcom's BCMR consultation, in the counterfactual.

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[499] Given that Openreach's fibre was already largely in place, we considered that regulated access to Openreach dark fibre could substantially reduce the commercial attractiveness of purchasing dark fibre from third parties (that would need to recover the build costs of any roll-out). H3G also submitted that Ofcom's latest proposal in the BCMR and charge control proposals may also have an impact on competition in backhaul.
[500] Ofcom's BCMR.
[501] As to that approach, Ofcom has already sought views on mandating access to dark fibre prior to the current BCMR, so CPs are currently anticipating the outcome of the current consultation on dark fibre and may well consider they will have some form of access to Openreach's dark fibre in the foreseeable future.

Whether the merged entity would be able to influence MBNL's decision making

17.21 The parties told us that EE, and the merged firm, could not unilaterally switch MBNL's purchasing to BT, because under the terms of the MBNL joint venture, [✂]; and that there was limited potential to affect choice of backhaul supplier, since a lot of MBNL's backhaul was under long-term contracts already.

17.22 We reviewed the existing arrangements between EE and H3G in relation to MBNL. We considered that, on the basis of these arrangements, EE cannot make unilateral decisions on behalf of MBNL; however, it [✂]. Therefore we could not rule out the possibility that the merged firm could influence MBNL to choose BT ahead of dark fibre operators for new backhaul arrangements.

The importance of EE/MBNL and the effect on operators of fibre networks

17.23 We then assessed what the impact of EE and/or MBNL ceasing to purchase backhaul from one or more third parties might have had on the viability of those third party suppliers and the wider market.

17.24 The parties said that neither EE nor MBNL was a necessary trading partner for fibre providers, given that:

(a) there were many other potential customers, including both fixed and mobile CPs; and

(b) losing a contract to the merged entity would not preclude that supplier from competing in the future.

17.25 CityFibre told us that loss of the MBNL agreement would (outside Hull) materially harm the financial viability of its fibre roll-out, and would significantly slow its roll-out to towns and cities. [✂]

17.26 Gigaclear told us that EE could have become an anchor tenant on its networks, improving the business case for each network build, and enabling it to build more new infrastructure quicker.

17.27 Another provider ([✂]) told us that it did not believe a single customer could underpin the business case alone, therefore it needed to layer demand from other interested parties.

17.28 We considered whether other MNOs were likely to purchase backhaul from these suppliers.

(a) Vodafone bought the network assets of Cable & Wireless, and is moving towards a model of self-supply of many network elements, also buying certain access services from Openreach. Vodafone said that there were few other local fibre network operators that had the scale to provide backhaul to it. In addition to network coverage, Vodafone would also take account of long-term financial security, service levels, and switching costs of the network provider. [✂]. However, it was recently announced that CityFibre had agreed a deal with Vodafone to [✂] in York, and had agreed a framework agreement under which it expected Vodafone to use networks in other cities covered by CityFibre in future.[502] [✂]

(b) Telefónica told us that it had concerns about the technical difficulties, complexities and limitations of using inputs such as dark fibre. As a result, it anticipated that any potential future use of dark fibre would be more likely to be in the form of using solutions from other transmission providers that could build end-to-end managed services using the available dark fibre.

(c) It is possible that H3G could choose to purchase some backhaul requirements directly from fibre operators, outside the MBNL agreement, if MBNL stays with BT. However we understand that this is likely to be an expensive and inefficient solution, compared to a shared solution under MBNL (especially for 3G, due to the sharing agreements in the MBNL agreement).

17.29 For all the MNOs, durations and volume commitments in existing contracts with BT Wholesale make large scale switching difficult in the short to medium term (see Chapter 16).

17.30 Therefore, apart from EE and MBNL, we considered it unlikely that any other MNO would be a national anchor customer to fibre networks in the foreseeable future. However, we thought that they could be potential anchor customers in particular locations, especially now that CityFibre has framework agreements in place with three MNOs.

17.31 The other potential anchor customers for fibre networks include CPs seeking fibre as an input to retail SFBB; and municipalities and larger commercial customers seeking a direct source of connectivity.

17.32 As to CPs, we understand that Sky and TalkTalk have formed a joint venture with CityFibre to build a new broadband network in York, to supply an FTTP

[502] Financial Times (6 October 2015), 'Vodafone signs with CityFibre for connectivity for UK network' (£).

service. [✄]. We note that the market for broadband is considerably larger than that for mobile backhaul.

17.33 As to municipalities and larger commercial customers, we note that the majority of CityFibre's existing urban locations are based around anchor tenants that are not MNOs. CityFibre told us that it was possible that municipalities and larger commercial customers could be anchor tenants for future roll-out, but that the need to negotiate individually (as opposed to a single anchor tenant for multiple locations) and the time needed for public procurement processes would slow its roll-out.

17.34 Therefore our provisional view is that even in the absence of EE and MBNL, there were other potential customers for fibre network operators – including MNOs, other CPs, and municipalities and commercial customers. It appeared unlikely that any of them would be an anchor customer on a national scale.

Our provisional view on this theory of harm

17.35 It is possible that, absent the merger, EE and/or MBNL would have purchased backhaul from independent fibre networks such as CityFibre, Gigaclear or Zayo. [✄]. Ofcom's dark fibre proposal in the BCMR has created significant uncertainty and reduced the attractiveness of independent dark fibre options for EE and MBNL (and other buyers) in the counterfactual.

17.36 Neither EE nor MBNL has committed to further purchases from CityFibre or any other such supplier (beyond the existing deal in Hull where Openreach does not operate). A commitment on the scale that would make it a national anchor tenant for CityFibre would have involved a major investment, [✄]. EE was not therefore at a stage where we could say that it would likely have entered into an anchor tenant agreement with CityFibre.

17.37 If third party dark fibre remains attractive, there are other customers available to independent fibre networks as anchor tenants, as demonstrated by CityFibre's existing contracts with a number of public and private sector tenants in various cities – albeit this may be less convenient for fibre operators.

17.38 There is significant uncertainty as to how the market for dark fibre will develop and would have developed both in the counterfactual (whether EE or MBNL would have served as a national anchor tenant) and post-merger (how quickly fibre roll-out could proceed based on a variety of smaller local contracts).

17.39 For these reasons, whilst the merged entity would have the incentive to cease purchasing mobile backhaul from third parties, we provisionally find that the merged entity would be unlikely to have the ability to foreclose independent fibre networks as a result of the merger. That being the case, we did not consider the effects of any hypothetical foreclosure on competition in relevant markets.

17.40 We therefore provisionally conclude that the merger is not expected to result in an SLC in any market or markets in the UK as a result of the foreclosure of dark fibre operators by the merged entity.

18. Wholesale broadband services: overview and competitive assessment

Introduction

18.1 This chapter considers potential concerns in relation to the supply of standard broadband (SBB) and superfast broadband (SFBB) services (together fixed broadband) at the wholesale level ('wholesale broadband services'). Chapters 19, 20 and 21 consider potential concerns in relation to the supply of fixed broadband at the retail level.

18.2 Unless a CP owns its own access network (ie BT or Virgin Media), it must use a third party service to connect its core network with the customer's premises in order to provide retail fixed broadband services to a customer. A CP can do this:

- for SBB, by unbundling BT's local exchanges and using Openreach's wholesale inputs (LLU or WBA) products sold by BT Wholesale or (in some exchanges) by other LLU operators; or

- for SFBB, by using BT's VULA product for the connection between the local exchanges and the customers' premises.

18.3 With the exception of Virgin Media (and KCOM in Hull), all CPs supplying retail broadband products are therefore dependent on BT for at least some broadband inputs. As BT is also a retail broadband supplier, all these CPs, with the exception of KCOM, compete with BT at the retail level.

18.4 Pre-merger, BT supplies wholesale broadband services to EE. This allows EE to compete with other CPs in the supply of broadband at the retail level. EE's presence in the retail broadband market is discussed in detail in Chapters 19, 20 and 21.

18.5 In 2014, Ofcom found that BT has SMP in the supply of WLA in the UK excluding the Hull area, including LLU and VULA.[503] Accordingly, Ofcom requires BT to provide various WLA services on regulated terms. In areas where Ofcom considers WLA remedies have not been effective in promoting competition (ie in SBB) ('Market A'), Ofcom also found that BT has SMP in the supply of WBA products and additional regulation applies to BT

[503] The supply of WLA in the UK and BT's SMP position are discussed in detail in Ofcom (26 June 2014), *Fixed access market reviews: local access, wholesale fixed analogue exchange lines, ISDN 2 and ISDN 30. Volume 1: Statement on the markets, market power determinations and remedies*.

Wholesale's supply of WBA products those areas.[504] In other areas ('Market B'), there is no additional regulation of BT's WBA products.

The theory of harm

18.6 In relation to wholesale broadband services, we identified a theory of harm in which, as a result of the merger, the merged entity would have both the ability and incentive to increase the price or degrade the quality of the wholesale inputs that rival communication providers need to provide SBB or SFBB at the retail level. In the next section we set out possible strategies by which this could take place.

Potential foreclosure strategies

18.7 We received at phase 1 and phase 2 a number of concerns from third parties that the merged entity would attempt to foreclose rival CPs that supply retail broadband products from access to wholesale broadband services.

18.8 We investigated the extent to which the merged entity could successfully engage in different strategies to foreclose its rivals in relation to the supply of wholesale broadband services. We focused on strategies put forward by third parties which covered the regulatory elements that were most likely to be affected by the merger.

18.9 Because of the SMP conditions that are currently in place, BT is under an obligation to supply LLU, VULA and (within Market A) WBA services to its rivals. Therefore, a strategy of total foreclosure would not be open to the merged entity.[505]

18.10 We investigated whether the merger increases BT's ability and/or incentive to partially foreclose CPs that offer retail broadband products in competition with the merged entity. We considered that the effect of this strategy, if successful, could include: an increase in the cost of wholesale broadband services (which could result in an increase in price at the retail level), a reduction in the quality of services provided (including provision of new or improved services), and/or a reduced margin between BT's retail prices and

[504] The supply of WBA in the UK and BT's SMP position in Market A are discussed in detail in Ofcom (26 June 2014), *Review of the Wholesale Broadband Access Markets (Statement on market definition, market power determinations and remedies)*.
[505] We have seen no argument or evidence that BT would be able to foreclose rivals by refusing to supply WBA outside Market A; Ofcom's definition of Market B is based on the premise that other suppliers are available.

the prices of wholesale broadband inputs provided to rival CPs (ie margin squeeze).

Approach to assessment

18.11 As set out in Chapter 9 for a vertical theory of harm to be established, it is necessary for the CMA to demonstrate that:

- the merged entity has the *ability* to harm its rivals by engaging in the foreclosure strategy;
- the merged entity has the *incentive* to engage in that strategy; and
- the effect of the strategy is sufficient to reduce competition in the affected market to the extent that, in the context of the market in question, it gives rise to an SLC.

18.12 While these components are to an extent interrelated, all must be present for the theory of harm to hold and must be of an order of magnitude likely to give rise to an SLC (that is, the legal test at phase 2). The SLC must be expected to be caused by the merger; that is, the merger must create or strengthen at least one factor above.

Market definition

18.13 The Commission has so far left open the exact product market definition for the purpose of its merger decisions.[506] In its most recent merger decision that discussed the UK wholesale broadband market,[507] the Commission stated that its market investigation confirmed that there were significant differences in characteristics, price, performance and service between the different types of access products, namely (at the time of the decision[508]) LLU, bitstream access and resale. The market investigation further indicated that bitstream and resale were insufficient substitutes to LLU but that they mainly served to complement the network of the alternative operator in places where it has no LLU in order to provide national coverage.

18.14 In its most recent merger decisions involving the wholesale broadband access market, the Commission left the geographic market definition

[506] See, for example, Case M.6990 *Vodafone/Kabel Deutschland*, paragraph 161; and Case M.*5532 Carphone Warehouse/Tiscali UK*, paragraph 34.
[507] Case M.5532 *Carphone Warehouse/Tiscali UK*, decision of 29 June 2009.
[508] The decision dates from before Ofcom required BT to give access to its VULA service.

open,[509] although it has stated in *Carphone Warehouse/Tiscali UK* that there are several arguments supporting a national geographic market definition from a merger control perspective.[510]

18.15 As stated in paragraph 18.5 above, Ofcom distinguishes between WLA and WBA in its regulatory statements. The WLA market concerns access to the fixed telecommunications infrastructure – the connection between consumers' premises and the telecommunications network. The WBA market sits between the retail broadband market and WLA market.[511]

18.16 In relation to WLA, Ofcom defines the following markets:[512]

- The supply of loop-based, cable-based and fibre-based wholesale local access at a fixed location in the UK excluding the Hull Area.
- The supply of loop-based, cable-based and fibre-based wholesale local access at a fixed location in the Hull Area.[513]

18.17 In relation to WBA, Ofcom defined the product market as follows:

> Asymmetric broadband access and any backhaul as necessary to allow interconnection with other communications providers, which provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes both business and residential customers. This means that broadband services provided to business and residential customers via copper, cable and fibre access networks at all speeds are within the same market, including SFBB services (30Mbit/s or faster). Broadband access provided via mobile, wireless and satellite networks are outside the market.[514]

18.18 Ofcom has segmented the WBA market into three distinct geographic markets within the UK, reflecting the geographical differences in competition

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[509] See, for example, Case M.6990 *Vodafone/Kabel Deutschland*, paragraph 163; and Case M.5532 *Carphone Warehouse/Tiscali UK*, paragraph 53.
[510] Case M.5532 *Carphone Warehouse/Tiscali UK*, paragraph 49.
[511] Ofcom (26 June 2014), *Review of the Wholesale Broadband Access Markets (Statement on market definition, market power determinations and remedies),* paragraph 1.11.
[512] Ofcom (26 June 2014), *Fixed access market reviews: local access, wholesale fixed analogue exchange lines, ISDN 2 and ISDN 30. Volume 1: Statement on the markets, market power determinations and remedies*, paragraph 1.22.
[513] BT does not supply wholesale fixed products in the Hull area. Accordingly, further information on this potential geographic market is not provided.
[514] Ofcom (26 June 2014), *Review of the Wholesale Broadband Access Markets (Statement on market definition, market power determinations and remedies),* paragraphs 3.3 & 3.4.

and supply conditions. In doing so, Ofcom has taken account of the fact that wholesale inputs are provided at the local exchange level and that the number of wholesale suppliers can differ significantly among local exchanges.[515] These markets are as follows:

- Market A, which covers those exchange areas where there are no more than two principal operators present or forecast to be present (9.5% of UK premises).
- Market B, which covers those exchange areas where there are three or more principal operators present or forecast to be present (89.8% of UK premises).
- The Hull area (0.7% of UK premises).[516]

Parties' and third parties' views

18.19 The parties submit that the narrowest product market is wholesale broadband access at all speeds offered over fibre, cable and copper lines. In relation to the geographic market, the parties submit that the market is segmented geographically in the tripartite manner outlined by Ofcom (above).

Provisional assessment

18.20 In terms of product market, Ofcom distinguishes between the WLA and WBA levels of the supply chain. This segmentation is relevant for regulatory purposes, as Ofcom has imposed regulation at both levels (albeit only in Market A for WBA). The differing regulatory regimes applying to WLA and WBA suggest the conditions of competition differ between them – since Openreach and Virgin Media are the only potential wholesale suppliers of WLA services (outside the Hull area), but there are multiple suppliers of WBA services in some areas (where other CPs have unbundled exchanges). Indeed, Ofcom has found that BT has SMP in relation to WLA in the entire UK except for the Hull area, while in WBA it has found that BT has SMP in Market A only.

18.21 We have carried out our assessment on the basis of a product market for fixed wholesale broadband access, which does not include mobile, wireless

[515] Ofcom (26 June 2014), *Review of the Wholesale Broadband Access Markets (Statement on market definition, market power determinations and remedies),* paragraph 4.211.
[516] BT does not supply wholesale fixed products in the Hull area. Accordingly, further information on this potential geographic market is not provided.

and satellite networks. The exclusion of mobile, wireless and satellite networks from the product market is consistent with Ofcom's conclusion in its June 2014 reviews into WLA and WBA,[517] and we have seen no reason to depart from that. Where a further segmentation of the product market, such as on the basis of wholesale access product, is potentially relevant, this has been discussed in our competitive assessment below.

18.22 On geographic market definition, we provisionally consider that where we assess access to WLA products, a national scope excluding the Hull area is appropriate, in line with Ofcom's statements. For WBA, it is relevant that Ofcom has segmented the market into three distinct geographic markets within the UK, reflecting the geographical differences in competition and supply conditions, as discussed further in Appendix L. It has based its regulation of this market (in part) on these geographical differences. The differing regulatory regime for these geographic markets and the differing conditions of competition between them therefore provide a useful framework for our assessment where it concerns access to WBA products, consistent with Ofcom's definitions.

Role of regulation

WLA

18.23 In its June 2014 fixed access market review, Ofcom found that BT continues to have SMP in the supply of WLA in the UK excluding the Hull area.[518] In light of this SMP finding, Ofcom imposed specific regulatory obligations on BT by way of SMP conditions. A distinction can be made between general SMP remedies, quality of service SMP remedies and specific CGA SMP remedies and NGA SMP remedies.[519]

18.24 For CGA, Ofcom decided in its June 2014 fixed access market review to continue to require BT to provide LLU services, including ancillary services necessary to enable and support the provision of LLU. Ofcom also imposed

[517] See Ofcom (26 June 2014), *Fixed access market reviews: local access, wholesale fixed analogue exchange lines, ISDN 2 and ISDN 30. Volume 1: Statement on the markets, market power determinations and remedies*, paragraph 7.9; and Ofcom (26 June 2014), *Review of the Wholesale Broadband Access Markets (Statement on market definition, market power determinations and remedies),* paragraph 3.4.
[518] Ofcom (26 June 2014), *Fixed access market review*, paragraph 7.91.
[519] The various SMP remedies are discussed in more detail in Appendix D. For the purpose of this section, we will only discuss the specific SMP remedies relating to CGA and NGA and only to the extent they are relevant to BT's ability, post-merger, to foreclose its rivals.

on BT a charge control for LLU services and a basis of charges obligation for electricity charges for LLU services.[520]

18.25 For NGA, Ofcom decided in its June 2014 Fixed access market review to (continue to) regulate VULA, SLU and PIA. Ofcom indicated in its review that it did not have firm evidence of material plans to deploy new networks using PIA or SLU.[521] We have not received submissions indicating otherwise, or suggesting that the merger will create issues with PIA or SLU. We have, therefore, focused our analysis on VULA. As for VULA, Ofcom decided to require BT to supply a VULA product providing access to its NGA network. This provides a form of non-physical (virtual) access, which, as far as possible, replicates many of the features of a physical access remedy such as LLU.[522] The requirement to offer VULA is in addition to and supplemented by the general remedies, which include, among other requirements, the provision of VULA on fair and reasonable terms, conditions and charges.[523]

18.26 Ofcom decided against regulating the level of wholesale VULA prices using a cost-based charge control at the time of its review,[524] stating that BT should retain broad flexibility over the level of VULA prices during the market review period that followed its review.[525] In March 2015, Ofcom imposed specific SMP remedies regulating the VULA margin (that is, the differential between the price of the wholesale VULA input offered by Openreach and the price of those retail packages offered by BT's retail divisions that use VULA as an input). These VULA margin remedies form part of the overall suite of remedies imposed on BT to address its SMP in the WLA market in June 2014.

WBA

18.27 In areas where Ofcom considers WLA remedies have not been effective in promoting competition (referred to as Market A[526]), Ofcom has also found that BT has SMP in the supply of WBA products. As a result, the supply of WBA products is subject to regulation in Market A only. This includes a charge control on WBA services offered in Market A, supported by a number of other general conditions.

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[520] Ofcom (26 June 2014), *Fixed access market review*, section 13.
[521] Ofcom (26 June 2014), *Fixed access market review*, paragraph 12.56.
[522] Ofcom (26 June 2014), *Fixed access market review*, paragraph 12.54.
[523] Ofcom (26 June 2014), *Fixed access market review*, paragraph 12.97.
[524] Ofcom (26 June 2014), *Fixed access market review*, paragraph 12.147.
[525] See also Ofcom, *Fixed access market reviews: Approach to the VULA margin*, 19 March 2015, paragraph 1.4.
[526] In its 2014 WBA review, Ofcom found that areas in which BT had SMP in the provision of WBA covered 9.5% of UK premises. See Appendix D for further detail.

18.28 Further details of regulation of the WLA and WBA markets are set out at Appendix D.

Partial foreclosure of CPs that offer retail broadband products

Initial observations on ability, incentive and effect of foreclosure

18.29 Ofcom has found that BT has SMP in the supply of WLA in the UK excluding the Hull area. Ofcom considers that in the absence of *ex ante* regulation, BT would have the incentive, and its SMP would give it the ability to favour its own downstream retail business over rivals in the relevant retail markets.[527] In this context, one of the key functions of the SMP conditions imposed by Ofcom is to constrain BT's ability to foreclose its rivals.

18.30 Some third parties have put it to us that the SMP conditions that are currently imposed on BT are already less than fully effective. We provisionally consider that there are two scenarios in which the merger may lead to an increased ability to foreclose:

- Regulation is effective now, but the merger will reduce its effectiveness.
- Regulation is not fully effective now, and the merger will allow the merged entity to exploit this to a greater extent than it already does.

18.31 A third possibility is that regulation is not currently fully effective, but the merger does not increase BT's ability to exploit this. In this case it is unlikely we would find a merger effect, unless we thought that BT was not fully exploiting whatever ability it had to harm its rivals and the merger substantially increased BT's incentive. There may be cases in which it is difficult to form a clear view of the effectiveness of current regulation, for example when that regulation was implemented recently.

18.32 We provisionally consider that BT already has an *incentive* to foreclose other retail broadband suppliers even absent the merger. This is the rationale for Ofcom's existing regulation, and the Ofcom SRDC (2015) notes that Openreach has the incentive to favour BT, and functional separation does not affect this. Instead, Ofcom argues that functional separation and associated regulation prevents Openreach from acting on these incentives.[528] This incentive comes in two forms: BT has a simple profit-maximising incentive to set prices as high as the market will bear, and it also has a strategic incentive to increase its rivals' costs and/or degrade the

[527] Ofcom (26 June 2014), *Fixed access market review*, paragraph 8.7.
[528] Ofcom (16 July 2015), *Strategic review of digital communications: Discussion document*, paragraph 1.35.

quality of their products, which would reduce competitive constraints at the retail level.

18.33 The merger may increase BT's incentive to foreclose rivals in two ways. First, BT will gain EE's retail broadband customers. This could increase the number of customers the merged entity gains from foreclosing rivals. However, given EE's small market share (see Chapter 20) this effect is likely to be small.

18.34 Second, if fixed-mobile bundles come to be important (see Appendix H for discussion of fixed-mobile bundles), then the merger could make existing EE mobile customers more likely to switch to the merged entity for fixed line services if their fixed line provider is foreclosed. The merged entity will also be in a stronger position to offer fixed-mobile bundles after the merger than BT in the counterfactual, and so when it gains a retail broadband customer it is more likely to also gain a mobile customer and earn extra margin. The size of the effect of these possible developments will depend on the extent to which fixed-mobile bundles are important to customers. We note that cross-selling of fixed and mobile services is part of BT's rationale for the merger[529] and that many of the major players in the industry are predicting an increase in fixed-mobile bundling. We discuss the importance of fixed-mobile bundles elsewhere in these provisional findings.

18.35 However, an increase in incentive would not necessarily lead to a change in behaviour. If the type of foreclosure were essentially binary, and BT already had sufficient incentive to foreclose absent the merger, then the merger might increase BT's gain from foreclosure but would not change its behaviour.

18.36 We also provisionally consider that at least some (if not all) forms of foreclosure are likely to have an effect on downstream competition. For example, if BT can increase the unit price of its wholesale broadband products, then rivals' unit costs will increase, and we would expect some or all of that increase to be passed through into retail prices. The effect of a degradation in quality depends on the extent and type: a nationwide reduction in broadband speed would affect the retail market, whereas the effect of slower fault repair in particular locations, for example, would be less clear. More indirectly, even if a cost increase were not passed through, the upstream foreclosure would reduce BT's rivals' downstream margin and may reduce their incentive to invest in new or improved services.

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[529] BT initial submission, paragraph 4.3b.

18.37 In light of the above, we have focused primarily on ability to foreclose, and especially the regulatory constraints on BT's behaviour.

BT's ability to foreclose SFBB inputs

18.38 Our concern here is that the merger could give BT the ability to foreclose SFBB inputs by increasing the price of VULA (or reducing its retail SFBB price while leaving the wholesale price unchanged), which would foreclose competing SFBB providers. BT's pricing of VULA is currently regulated using the VULA margin test, which is described below.

VULA regulation

18.39 With the exception of Virgin Media, CPs that wish to offer SFBB at the retail level currently need access to BT's VULA services. Ofcom requires BT to offer these services to these CPs. In addition, Ofcom requires BT to set the charge for VULA so that a minimum margin between its wholesale and retail prices is maintained for new subscribers over any 'Compliance Period' (that is, a calendar month) (the 'VULA margin test'). The VULA margin test would in principle include the costs and revenues of any new services BT begins to bundle with superfast broadband during the market review period (eg mobile services).[530]

18.40 Ofcom has issued guidance on how it would assess BT's costs and revenues to determine whether BT was complying with the VULA margin test.[531] The guidance anticipates that there might be material changes in circumstances which would warrant a departure from that guidance.[532] When BT announced a change to its BT Sport retail proposition in August 2015, Ofcom considered this to constitute a material change in circumstances. Therefore, Ofcom consulted on and subsequently adopted supplementary guidance to explain how it would it would undertake the VULA margin test in light of this change.[533] Ofcom made clear in its guidance that other examples of material changes in circumstances affecting the distribution of superfast broadband might involve mobile telephony or BT TV.[534]

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[530] Ofcom (19 March 2015), *Fixed access market reviews: Approach to the VULA margin*, paragraphs 6.70–6.74.
[531] Ofcom (19 March 2015), *Fixed access market reviews: Approach to the VULA margin*.
[532] Ofcom (19 March 2015), *Fixed access market reviews: Approach to the VULA margin*, paragraph 6.5.
[533] Ofcom (13 August 2015), *Supplementary guidance on assessment of the VULA margin*.
[534] Ofcom (19 March 2015), *Fixed access market reviews: Approach to the VULA margin*, footnote 354.

18.41 BT and TalkTalk each appealed the VULA SMP Condition on 19 May 2015, raising both non-specified and specified price control matters.[535] The VULA SMP condition remains in force throughout the appeals until any order is made directing otherwise.

Main parties' views

18.42 BT said that the merger will not provide the merged entity with the ability to engage in complete or partial input foreclosure, for the following reasons:[536]

- BT's wholesale broadband business is tightly regulated. As an SMP operator at the wholesale level, BT is under constant scrutiny from Ofcom, as part of regular market reviews, in considering actual or potential complaints or disputes brought by third parties, and through regular information gathering activities. In addition to the Ofcom SMP regulations, BT is subject to a further regulatory layer governing Openreach which inherently removes BT's ability to discriminate among downstream CPs. BT therefore currently has no wholesale ability to foreclose rival retail broadband providers.

- BT is also subject to competition laws generally, including the Competition Act 1998 and analogous EU prohibitions on margin squeeze.[537]

- The merger will not diminish the effectiveness of these regulations, nor the state of competition in those areas where regulation has been relaxed or judged unnecessary.

- It is not obvious that the merger changes BT's wholesale incentives, compared to a counterfactual where BT is an MVNO and can offer fixed-mobile bundles.

[535] BT appeals on four grounds: that the market analysis underlying the test is inadequate and wrong in principle; that the design is defective, noting especially the monthly nature of the test and the nature of the recovery of sports content costs; a serious failure to take 'utmost account' of the views of the European Commission; and that the application of the test is deficient in a number of specific ways. TalkTalk appeals on two grounds: that a portfolio test alone is insufficient, and a product level test (without bundles) is necessary; and that the test should have adjusted for the apparent fact that BT benefits from higher call revenues that cannot be replicated by a competitor.
[536] BT response to issues statement, section 14.
[537] We note that in case of a Chapter II or Article 102 TFEU complaint, Ofcom, the CMA or the European Commission would also have to prove potential anti-competitive effects of the margin squeeze, not just that the cost test is met (see, among other cases, Case C-52/09 *Teliasonera* (2011) ECR I-527, paragraphs 60–67). The legal test in EU case-law is whether a competitor that is *as efficient as* BT would be able to compete with BT's retail prices in light of the wholesale prices BT charges.

Third parties' views

18.43 Sky argued that BT's incentive to foreclose rivals would be strengthened post-merger by the prospect of earning an increased retail margin from downstream customers on both fixed and mobile products; and its ability would be increased by further opportunities to manipulate cost and margin allocations, especially in relation to VULA.[538]

18.44 TalkTalk said that historically, BT has engaged in regulatory gaming in a number of ways. TalkTalk also said that this will become easier to undertake following a merger of BT and EE, because it will make the VULA margin test more difficult to administer; and that Ofcom, despite its efforts to ensure effective regulation of BT, will be unable to prevent BT from engaging fully in such behaviour. It said this would almost certainly increase the costs faced by TalkTalk and other similar competitors relying on BT infrastructure, and so weaken competition. It said that in the extreme, TalkTalk may be foreclosed from supplying customers in certain markets or offering complete bundles.[539]

18.45 Vodafone said that in order to supply triple-play or quad-play packages, Vodafone is reliant on BT to provide the wholesale superfast broadband product; and that, following the merger, BT will have the ability and enhanced incentive to foreclose Vodafone's access to essential wholesale inputs to superfast broadband in order to restrict Vodafone's ability to compete with the BT/EE group's triple-play and quad-play offerings.[540]

Ofcom's views

18.46 Ofcom explained that the VULA margin test was intended to ensure that BT does not set the VULA margin such that it prevents an operator with slightly higher costs than BT (or some other slight commercial drawback relative to BT) from being able to profitably match BT's retail superfast broadband offers. The form of the regulation is intended to give BT broad flexibility over the level of VULA prices during this market review period, but to protect and promote competition at the retail level by clearly setting out the minimum VULA margin BT must maintain.[541]

[538] Sky response to issues statement. Sky also submitted an economic assessment of BT's incentive to foreclose in relation to SFBB. As we take incentive as likely to exist and, therefore, focus our analysis on ability, we have not separately discussed this submission in this section of our provisional findings.
[539] TalkTalk initial submission, paragraphs 3.41–3.43; TalkTalk response to issues statement, paragraph 7.2.
[540] Vodafone initial submission, paragraph 5.1.
[541] Ofcom initial submission, paragraph 6.11.

18.47 In its phase 2 submission to the CMA, Ofcom addressed the issue that the merger may add complexity to the VULA margin test as follows:

> It is not obvious that assessing the revenues associated with BT superfast broadband bundles that include mobile services would be significantly more complex post-merger as compared to this counterfactual. In both scenarios the revenue sources and data used may be the same.
>
> …it is difficult to be certain about the extent to which complexity would increase. [It depends on the approach Ofcom adopts for assessing these costs; what cost data is available from BT post-merger; and what cost data is available in the counterfactual.] That said, Ofcom has extensive experience in cost modelling and applying regulation in complex environments. Therefore, we do not anticipate that any added complexity arising out of the merger would make our VULA margin regulation unworkable.[542]

18.48 Following this submission, we invited Ofcom to provide further detail on the VULA margin test, and in particular the potential impact the merger may have on the effectiveness of the VULA margin test. In response, Ofcom provided a detailed submission, stating in summary that:

> Ofcom recognises the complexities involved in assessing compliance with its VULA margin regulation. Indeed, these are a consequence of designing that regulation to be flexible in the face of changing circumstances. In developing its approach to VULA margin regulation, Ofcom has already had to consider challenging analytical issues. Ofcom considers that its approach is sufficiently flexible to address any added complexity arising out of the merger.[543]

18.49 We held two hearings with Ofcom in which the VULA margin test was discussed in detail, including one which was focused on the test only. We also requested a separate submission from Ofcom on how the merger would affect its ability to implement the test, which informed our assessment below.[544]

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[542] Ofcom initial submission, paragraphs 6.24–6.26.
[543] Further Ofcom submission.
[544] For example, see Ofcom hearing summary and Ofcom's second submission at phase 2.

Assessment of BT's ability to foreclose

18.50 In analysing whether the merged entity would have the ability, post-merger, to partially foreclose rival CPs that offer retail broadband products in competition with the merged entity through its VULA services, we have assessed whether or not the regulation in place, in particular the VULA margin test, effectively constrains that ability and whether this effectiveness is affected by the merger. This is because we provisionally consider that in the absence of *ex ante* regulation, BT would already have the ability to favour its own downstream business over rivals in the retail broadband market as a result of its SMP in WLA.[545] We provisionally consider that there are two scenarios in which the merger may lead to an increased ability to foreclose:

- The VULA margin test is effective now, but the merger will reduce its effectiveness.

- The VULA margin test is not fully effective now, and the merger will allow the merged entity to exploit this to a greater extent than it already does.

18.51 The assessment of the effectiveness of regulation is complex, certainly when it is only one factor of a theory of harm that is assessed in a merger investigation. In the case of the VULA margin test, the regulatory regime is young, and appeals against it are pending. We gave considerable thought to the VULA margin test's effectiveness in preventing BT's ability to foreclose rival CPs pre-merger. We also took into account the various submissions third parties made on this topic and we are aware of the appeals that have been lodged against the test by BT and TalkTalk. Based in particular on Ofcom's submissions, both at the hearings and in writing,[546] we provisionally thought it unlikely that the test was currently ineffective in preventing BT from foreclosing its rival CPs to a material extent. We therefore concentrated our further assessment on the impact of the merger on its effectiveness.

18.52 In general, we are mindful that the test is:

- in use, so is not completely untested;[547]

[545] See also Ofcom (26 June 2014), *Fixed access market review*, paragraph 8.7.
[546] See paragraph 18.49.
[547] On 29 July 2015, Ofcom announced that BT had submitted the data for Ofcom to monitor BT's compliance with the VULA margin control over the compliance period 1 to 30 April 2015; and that Ofcom had carried out a high level assessment and found no reasonable grounds for believing that BT had contravened the control. *BT's compliance with the VULA margin control.*

- under appeal by BT and TalkTalk; and

- assessed retrospectively, with Ofcom assessing BT's compliance on a six-monthly basis. It will take time for Ofcom to determine whether BT has breached the VULA margin condition in any given month (during which time a non-compliant price may be being charged), and in the event of an appeal the correct approach would not be settled until that appeal was resolved. This would give scope for foreclosure to take place for some months even if the test is effective. Ofcom told us that if it were to find that BT had breached the VULA margin condition and overcharged customers, while any decision would depend on the specific circumstances, BT would likely be required to repay that overcharge.[548]

18.53 The VULA margin test is made more complicated by the fact that BT bundles SFBB with other products at the retail level.[549] The test is intended to capture the mix of products actually taken by new BT SFBB customers in each time period. Therefore, the test has to allow for the retail margin (that is, revenues and costs) earned on other products in the bundle. The greater the complexity in calculating that retail margin, the more difficult the test is to apply – and, in the view of third parties, the greater the scope for abuse.

18.54 BT would have offered a mobile service in the counterfactual, so Ofcom would have to deal with these general issues in any event (although as we discuss below, the details would differ). It foresaw this in its VULA margin statement.[550] Ofcom also suggested (in general terms) the way it might assess relevant costs and revenues.[551]

18.55 However, the merger may increase complexity compared to the counterfactual in two ways:

- First, it makes mobile costs less transparent. Absent the merger, much of BT's mobile costs would have been paid to EE as part of the MVNO

[548] Ofcom hearing summary.
[549] The requirement on BT to maintain a minimum margin is set by reference to the total costs and revenues 'associated with the supply of VULA-Based Broadband Packages to New Subscribers'. Such packages are defined as 'all products, services or bundles of products or services' offered to new subscribers by BT's retail divisions which include the provision of a broadband connection provided using VULA. We asked Ofcom whether, when interpreting this condition, it would include only strict bundles (on a single contract) or also included loose bundles (eg with a discount given if a customer takes both SFBB and a mobile product). Ofcom told us that while any view would depend on the particular circumstances, it would probably be appropriate to take into account extra products provided at a discount to ensure the test was not circumvented, but it might treat differently products where the price is independent of other products taken (ie a 'bundle' that would be indistinguishable from taking the products separately). Ofcom said it had not tried to give guidance on every circumstance, but would review what actually happened in the market. See Ofcom hearing summary.
[550] Ofcom (March 2015), *Fixed access market reviews: Approach to the VULA margin*, paragraphs 6.70–6.71.
[551] Ofcom (March 2015), *Fixed access market reviews: Approach to the VULA margin*, paragraphs 6.72–6.74.

agreement, and a high proportion would be on a per customer or per unit basis. After the merger, Ofcom will have to determine what part of EE's costs relate to mobile services used by new SFBB customers, and the cost structure will reflect high fixed costs and low short run variable costs. Ofcom may have to determine to what extent these customers should contribute to fixed and common costs. However, we note that BT was planning to use its own spectrum to build an 'inside out' network which would have run in conjunction with the MVNO agreement with EE, and therefore even in the counterfactual this may have involved considerable complexity.

- Second, it greatly increases the number of new customers who could potentially be viewed as taking a SFBB and mobile bundle. If the proportion of new SFBB customers taking BT mobile were small, the effect of the mobile retail margin on the test would be small; if a large proportion take BT (EE) mobile, the effect is large.

18.56 A further implication of adding mobile to bundles is that because it is a margin-based test, the VULA margin test may allow BT to increase the wholesale VULA price (or reduce BT's retail price). This is because if BT earns a positive margin on the mobile services added to the bundle, it need earn less margin on the SFBB portion.[552] The greater the margin on mobile, and the greater the proportion of new SFBB customers also taking mobile in their bundle, the larger the effect would be. We note that the VULA margin test only applies to new SFBB subscribers.[553]

18.57 These factors suggest that the effect of merging with EE is likely to be greater than the effect of launching a consumer mobile proposition as an MVNO (the counterfactual): the number of mobile subscribers will be greater, and the margin will be higher[554] (due to the 'owner economics' of MNOs meaning lower variable costs than MVNOs, and the potential for cost savings for EE on backhaul as a result of the merger).

18.58 Ofcom confirmed that 'if BT were to add a feature to its retail superfast bundles for which the revenues exceed the costs then BT could increase the wholesale VULA price without breaching our VULA margin condition. The opposite happens should BT add a feature for which revenues are lower

[552] The relevant margin on mobile (or other) services bundled with SFBB allows for an allocation of fixed and common costs and a return on capital.
[553] The condition defines 'New Subscribers' as 'those end users that do not subscribe to a VULA-Based Broadband Package as at the commencement of the relevant Compliance Period' (VULA SMP condition 14.4).
[554] The general competitiveness of the mobile market suggests that this margin should be relatively small pre-merger on an average basis, especially for BT as an MVNO, although not necessary on a variable basis.

than the costs'. This seems to us appropriate, as long as BT could not do so in a way that undermines the intent of the VULA margin test.

18.59 We considered whether BT could undermine the test in this way. The strongest potential for the merger to have an immediate undermining effect on the VULA margin test would be if post-merger the merged entity could simply treat all EE customers who started to take a BT SFBB product as 'bundled' customers included within the test. According to Enders Analysis, 30% of customers that take BT broadband services are also EE mobile customers. Assuming that the same proportion applies to people signing up to a BT SFBB product (ie 'new subscribers' as defined in the VULA SMP condition), then the headroom per customer could in principle increase by 30% of EE's mobile margin as a result of the merger.

18.60 Pre-merger, BT gives mobile customers a £5 monthly discount when they also take broadband from BT (but on a separate contract), and so there is an argument that they should be viewed as bundled. However, post-merger, BT may not want to give an automatic £5 monthly discount to the many million existing EE mobile customers who are taking BT broadband; it may not even maintain that discount for existing BT mobile customers (beyond current contractual obligations). For the VULA margin test, if BT were to give that discount to 'new subscribers' to BT broadband who are already BT or EE mobile customers, or to some subset of them, then it might be more appropriate to view this as a genuine bundle.

18.61 As part of our assessment, we looked at the relevant margins. EE's average variable margin on a postpay customer was £[✂] per month, which would fall to £[✂] per month if opex, capex and depreciation were allocated across the base (as might be considered more appropriate for a margin squeeze test).[555] A margin of this scale would imply that if the merged entity gave, for example, a £[✂] monthly discount to convert some EE customers who are not yet BT broadband customers to a broadband/mobile bundle, there would be some scope for the remaining margin to affect the headroom under the VULA margin test.

18.62 We also considered whether efficiencies resulting from the merger could increase headroom under the VULA margin test.

- First, we considered direct costs of relevant services: the merged entity would have lower costs of mobile backhaul post-merger (paying

[555] We cite both figures as illustrative since we cannot know exactly how Ofcom would treat such costs in the test. A return on capital may also be deducted.

Openreach prices rather than BT Wholesale prices), but that would only slightly increase the margin.[556]

- Secondly, we considered wider efficiencies: BT told us it expects cost synergies of £3.0bn net of integration costs.[557] Based on BT and EE's reported revenues and EBITDA for 2014/15, that implies cost savings of 19%. This could potentially give significant scope for increased headroom under the VULA margin test.

- Finally, BT told us it will gain greater end-to-end control over future investment and product innovation of the mobile network operator.[558] This cannot be directly attributed to financial accounts, but since the VULA margin test currently includes BT inputs to EE and EE inputs to BT, there would again seem to be some scope for savings in future.

18.63 On the basis of the above, there would seem to be some scope for BT to try to claim a higher margin on bundles containing SFBB as a result of the merger (depending on how it tried to define a bundle).

18.64 However, in practice, as part of its regular compliance assessments, Ofcom would consider how costs and revenues should be allocated to SFBB bundles. If it did not believe that certain costs and revenues were associated with the supply of SFBB packages then they would be excluded under the SMP condition. Ofcom has the opportunity to respond to market developments once it sees what products are being offered, which avoids setting out a rigid framework that BT could game (although there could be a lag – see paragraph □). In general, Ofcom said that if it looked as if BT was starting to gain a unique advantage as a result of its mobile business that no other competitor could match, Ofcom would need to consider how best to address that.

18.65 We also note that Ofcom would have some scope to determine the extent to which these SFBB/mobile customers make a contribution to the fixed costs of the mobile network. For example, if BT/EE were to try to include a very high mobile margin by only including short run variable costs for these

[556] We took EE's annual backhaul spend with BTW (£[✂]); subtracted BTW's variable margin on MBNL backhaul ([✂]%); and divided the result by the number of subscribers on EE's network, including MVNOs (28 million). This suggested a saving of just over £[✂] per subscriber per year. In the longer term, the merged entity might seek to switch further backhaul from VM to BTW, which might add a further [✂]% saving on reasonable assumptions, but remains small. Mobile subscriber figures taken from Ofcom data.

[557] This includes: consolidating sales and marketing operations; procurement savings; IT and network savings through consolidation of IT and network development and operations, and phased migration away from duplicate customer support systems; customer service savings from insourcing overseas and third party contact centre resources and expanding online/self-service facilities; and other savings from not duplicating head office functions and property. BT initial submission, paragraphs 4.3–4.4.

[558] BT initial submission, paragraph 4.2.

customers, Ofcom could take a different view in its compliance assessment and instead make a proper allocation of other appropriate costs (such as acquisition costs, fixed network costs and overheads) which would reduce the margin. Given the competitive nature of retail mobile, we would expect a fully allocated margin to be relatively small. Therefore, the margin presented in paragraph 18.61 above is likely to represent an upper bound. Similarly, if Ofcom believed that BT/EE were able to set a margin that an adjusted 'equally efficient operator' could not realistically earn because of an unmatchable advantage that BT/EE enjoys, it is open to Ofcom to make a further adjustment to the applicable cost standard, as it has done with bandwidth costs and considered for fixed line voice revenues.

18.66 A further type of complication caused by the merger is that it may lead to fixed costs being spread across more services. For example, one cost item in the VULA margin test is a contribution to the (largely fixed) costs of BT Sport, to reflect the fact that some BT Sport viewers receive it as part of their SFBB subscription. If BT were to give some elements of its BT Sport content 'for free' to EE mobile customers, BT/EE may argue that part of the costs of BT Sport should be allocated to those new mobile subscribers, and less allocated to SFBB customers; which would lower the unit costs for BT Sport used in the test, and thereby increase the margin for SFBB bundles including BT Sport.[559] BT told us that one of the benefits arising from the merger is a churn benefit created by giving some of the BT Sport proposition for free to the mobile base of EE, although this was a modest benefit (affecting approximately [✄] customers) because typically customers do not value sport as highly on mobile devices as on a television screen.

18.67 If BT were to give free access to some BT Sport content to new subscribers, then Ofcom would have to consider whether this free access had significant value which would justify spreading the costs. If it did, then that would arguably reduce the incremental value of the BT Sport package provided to new BT broadband subscribers (or at least to those taking mobile from BT/EE),[560] and so it may be reasonable for costs to be shared to some extent. Ofcom already has to deal with the allocation of costs of BT Sport in the VULA margin test pre-merger, so this is not a new issue (even if the complexity may increase following the merger).

18.68 We consider it likely that Ofcom will have to adapt its implementation of the VULA margin test to deal with different issues as a result of the merger.

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[559] Sky response to issues statement, paragraph 3.21.3.
[560] In other words, if BT/EE mobile subscribers were given BT Sport content for free via their mobile phones, and this was attractive content when delivered in this way, then some subscribers may no longer see much value in the BT Sport service included in a BT broadband package.

Therefore, we considered first how Ofcom might be expected to adapt the VULA margin test, recognising that we do not currently know the details of the products BT would sell post-merger or in the counterfactual, or how the test would deal with the addition of mobile services. Secondly, we considered whether the VULA margin test can be expected to be less effective than at present because of the merger.

18.69 In general, Ofcom told us that if the merger led to a change in circumstance which potentially reduced the effectiveness of the VULA margin test, it could adequately deal with the situation in one of four ways:[561]

- Ofcom might depart from the guidance when taking the impact of the merger into account as part of a compliance assessment.

- It may amend its guidance (as was done to reflect the changes to BT Sport in August 2015).[562]

- In the event that any changes meant that the condition is no longer appropriate in its current form, Ofcom could amend it. Ofcom stated to the CMA that it does not anticipate that the merger would require it to amend the condition since the guidance gives the condition sufficient flexibility to address any added complexity arising out of the merger.[563]

- Ofcom has begun its next review of the wholesale local access market, which is scheduled to complete in March 2017. If the design of the regulation is no longer appropriate, Ofcom would have an opportunity to revisit the test (fundamentally if necessary) at that time.

18.70 Ofcom also considered that both the existing regulation, and the threat of regulation, would have an effect on BT's incentives.[564]

18.71 When testing the effectiveness of existing and future regulation, we must take account of all aspects of that regulation, including guidance that may accompany the regulation, and any flexibility that the regulation and/or the guidance provide to the regulator to amend it. For existing regulation, the assessment of the effectiveness of such a regulatory framework should cover how it has been applied to date, including whether and how the regulator has departed from or amended the applicable guidance. As set out in paragraph 18.51, we provisionally thought it unlikely that the test was currently ineffective in preventing BT from foreclosing its rival CPs to a

561 Ofcom hearing summary, and further Ofcom submission to the CMA.
562 Ofcom (13 August 2015), *Supplementary guidance on assessment of the VULA margin*.
563 Further Ofcom submission to the CMA.
564 Ofcom hearing summary.

material extent. We therefore determined whether the merger has negative effects on the effectiveness of the existing regulation that applies to VULA (which includes guidance Ofcom has published) in preventing BT's ability to foreclose its rivals in the downstream market.

18.72 The existing regulation was designed to be flexible for a regulator who has ongoing supervisory powers. This is of course unlike the merger review process, where the CMA has only one opportunity to address possible future developments. We consider that the first two forms of flexing Ofcom's approach to take into account material changes (ie departing from its guidance and amending its guidance) should be viewed as part of the existing VULA regulatory framework. Indeed, the amendment of the guidance following the changes to BT Sport in August 2015 is an example of how Ofcom can flex its approach in light of changes within the existing VULA regulatory framework, without materially changing the nature of the VULA test itself, which is to maintain a minimum margin between BT's VULA wholesale price and BT's superfast broadband retail price to enable BT's rivals to compete. This is an example of Ofcom flexibly applying existing regulation in order to ensure it is effective. It is also one of the options which may be open to Ofcom to address the addition of fixed-mobile bundles post-merger.

18.73 Given Ofcom's views on the issue and the scope for Ofcom to amend its guidance, it seems unlikely to us that the third option, amending the wording of the condition, would be required. We in any event note that not all amendments to the condition would involve material changes to the basis of the regulation.

18.74 In contrast, an amendment that changed the nature of the test – for example from a margin-based test to a charge-control test – would involve a material change to the basis of regulation. Given that such a change would involve, in effect, new regulation in the future, we would consider first whether that future regulation is more likely than not to come into force (and that no SLC arises between completion of the merger and such future regulation coming into force) and secondly whether such regulation would be effective. As noted, however, we provisionally find that no material change to the regulation of VULA can be expected.

18.75 For the fourth option, addressing concerns through the March 2017 Fixed Access Market Review, this would also require future regulation. We note that we are not yet aware of any detailed proposals Ofcom is making in its March 2017 review, so there is significant uncertainty as to the type of regulation that may flow from that review. As a result, we do not intend to rely on the potential for this review to address any concerns which might arise from the merger.

18.76 Overall, we provisionally find it likely that Ofcom will be able to, and will, address any issues with the VULA margin test that arise specifically from the merger, without any material change to the regulation of VULA and without any reduction in the effectiveness of regulation, for the following reasons.

- First, we have assessed possible complexities that the merger may create for the application of the VULA margin test. We provisionally find that it is likely that these can be addressed within the existing regulatory framework, that is to say, by applying the existing test, by departing from the guidance, or by amending the guidance. We did not find that any change to the relevant condition was likely to be needed, and accordingly we also did not find that any material change to the basis of regulation was likely to be needed.

- Secondly, we provisionally find that Ofcom, as a responsible regulator that has a duty to promote competition and a track record of having done so, can be expected to do what is necessary to ensure the VULA margin test operates effectively. Moreover, it has already shown that it will address changes in circumstances which may affect the VULA margin test, when it amended its guidance to take into account changes to BT Sport in August 2015. We have found no evidence that Ofcom would fail to take the steps needed to ensure effective regulation.

- Thirdly, Ofcom has already stated that it considers its approach is sufficiently flexible to address any added complexity arising out of the merger.[565] We do not have evidence to the contrary.

Provisional conclusion on VULA

18.77 Based on our discussions with and written evidence from Ofcom, we thought it unlikely that the VULA margin test was materially ineffective in the counterfactual (although we are conscious that the test is under appeal and we have not sought to assess the points raised in that appeal). We have therefore sought to determine the impact that the merger may have on the effectiveness of Ofcom's regulation of VULA. We consider it likely that Ofcom will have to adapt its implementation of the VULA margin test to address new issues that may arise as a result of the merger.

[565] Ofcom initial submission, paragraph 1.3.

18.78 Having discussed in detail with Ofcom and taking into account its submissions, we have assessed how Ofcom would deal with the change in circumstances that the merger is likely to cause, and whether it has the flexibility to deal with merger-specific effects on the effectiveness of the regulation of VULA. We provisionally considered that Ofcom can be expected to take the steps needed to address a future reduction in the effectiveness of the VULA margin test caused by the merger, and that it is not likely that any such reduction will require material amendments to the regulation of VULA. We therefore provisionally found that the merger does not decrease the effectiveness of the regulation of VULA to such an extent that it creates or enhances the merged entity's ability to foreclose its rival CPs – even if the regulation were not completely effective pre-merger.

BT's ability to foreclose SBB inputs

18.79 Our concern here is that the merger could give BT the ability to foreclose SBB inputs by favouring products used by its own downstream division over (different) products used by rival CPs who are active in retail broadband.

SBB inputs

18.80 Openreach offers various technologies and products to connect CPs that offer SBB at the retail level to its copper network. For example, Openreach offers both Metallic Path Facility (MPF) and Shared Metallic Path Facility (SMPF), the main differences being that MPF allows the CP to provide both SBB and fixed voice services to a customer; whereas SMPF allows the CP to offer SBB only, and it (or another CP) can offer voice services to the same customer using Openreach's WLR product.[566]

Main parties' views

18.81 BT said that the concerns around foreclosure of SBB inputs by favouring products used by its own downstream division over (different) products used by rival CPs were no different to those raised historically by TalkTalk with Ofcom regarding BT's current incentives. It said that Ofcom is alert to the concern and reviews it closely when regulating BT's WLA products under relevant SMP conditions. BT also said that Ofcom has determined that its regulation of the pricing of both MPF and WLR products will prevent BT's ability to discriminate among downstream CPs in an anticompetitive manner.

[566] Sky response to issues statement, footnote 19.

Third parties' views

18.82 Sky[567] and TalkTalk put it to us that the merger would increase BT's incentives to favour products consumed by its downstream division (SMPF for broadband and WLR for fixed telephony) over products used by Sky and TalkTalk (who both primarily use MPF). The merger could increase BT's incentive because BT would now also benefit from diversion from Sky/TalkTalk to EE, which also uses SMPF and WLR products.

Our provisional assessment

18.83 We considered whether it was likely that the merger would have a significant effect on BT's ability or incentive to foreclose its downstream rivals, including Sky and TalkTalk, by favouring SMPF/WLR over MPF. If BT does have the ability to reallocate costs from SMPF/WLR to MPF, or to otherwise favour SMPF/WLR in quality of service or innovation; and if that does have an effect at the retail level which causes customers to switch away from an MPF-based provider such as Sky or TalkTalk; then we would expect the merged entity to gain a larger proportion of these diverted customers post-merger than in the counterfactual, and so any such strategy would be more profitable. In this sense, the merger would increase BT's incentives.

18.84 However, the prices of these products are the subject of well-established charge control regulation, and Ofcom told us that it recognises that without regulation, BT could have an incentive to favour the wholesale products it tends to use (namely WLR and SMPF related products) relative to the wholesale products that LLU operators tend to use (namely LLU related products). The charges for the key rental and connection products are therefore individually charge controlled. Ofcom also told us that while BT's Regulatory Financial Statements are an important input into its assessment of prices of regulated services, it does not follow that changes in the way BT allocates its costs in its Regulatory Financial Statements will be reflected in the prices of regulated services. In the case of the charge controls for MPF, SMPF and WLR, Ofcom said it considered the relative prices of these products carefully and did not rely on the differences in the Regulatory Financial Statements. Therefore we provisionally thought it unlikely that BT has the ability to reallocate costs in a way that would affect prices.

18.85 If there is any residual ability to foreclose, we considered whether BT's incentives would change in such a way as to cause it to behave differently. First, we note that EE has a small share of broadband customers, which

[567] See, among other things, Sky response to issues statement, paragraph 3.5.

implies that any extra gain from reallocation would be small. Second, it seems to us that if BT has an incentive and ability to prioritise SMPF/WLR over MPF, this is largely binary rather than a question of degree: BT would already have done so pre-merger. The reward may be larger post-merger, in the sense that BT internalises EE's share of the gain from this action, but in our provisional view it is not likely that this would constitute a 'tipping point' at which BT reallocates to a greater extent.

18.86 In light of the above, our provisional conclusion in relation to BT's ability to foreclose SBB inputs such as MPF is that we do not consider that the merger creates or enhances an ability or incentive for BT to do so.

Other issues

18.87 In this section we consider two additional concerns that have been put to us regarding Openreach's ability and incentive to favour products that are most valuable to BT Group. In our provisional view, neither concern gives rise to an SLC as a result of the merger.

Prioritisation of fibre over copper

18.88 Sky also told us that BT already prioritises investment in fibre (where Sky considers BT has a stronger competitive position) over copper, and that post-merger, BT will have an even greater incentive to neglect investment in its copper network, because the integration of EE's mobile business within BT's Group will mean a greater number of investment projects will be competing for BT's funding post-merger and therefore a greater risk that funds will not be directed to investment in BT's copper network. According to Sky, BT can increase its profitability by neglecting investment in the copper network, even though such investments, seen in isolation, may generate a positive return.[568]

18.89 On the pre-merger facts relating to Sky's concerns, BT told us that in the last five years it had spent [✄] on its copper network [✄] its fibre network, that this copper spend [✄], and that it would be irrational for BT to diminish copper line performance when access to a fibre line must be accompanied by the copper line it overlays.

18.90 We understand that there can be circumstances where copper line performance can degrade without affecting services provided over fibre – for

[568] Sky initial submission, paragraph 4.4.

example, because water in ducts affects copper but not fibre. Therefore, we considered whether this issue had been investigated previously.

18.91 Ofcom told us that it reviewed the question of Openreach's capex on copper and its relationship with service quality in the last Fixed Access Market Review in 2014. Stakeholder submissions to this review (specifically from Sky and TalkTalk) argued that Openreach had deliberately reduced its capex on copper network maintenance below an efficient level. Ofcom concluded that the evidence it had was insufficiently reliable and consistent to enable it to assess a quantitative relationship between investment levels, preventative maintenance expenditure levels and changes in fault volumes.

18.92 We are of the provisional view that Sky's concern is not merger-specific. We thought it could be merger-specific if post-merger BT would be able to earn a higher return by moving limited capital from copper to mobile investments, but Sky told us that its concern does not rely on any form of 'capital market imperfection'.[569] We have no reason to believe that strategically shifting capital from copper to fibre – or doing so to a greater extent than is alleged already – would become more profitable as a result of the merger.

18.93 In light of the above, we provisionally conclude that the concern about the prioritisation of fibre over copper is not merger-specific and cannot, therefore, give rise to an SLC.

Internal prioritisation – new products and services

18.94 Vodafone told us that [✂]. It considered that BT had an incentive to foreclose Vodafone, which was increased by the merger (since BT would then be able to offer a quad-play product to compete with Vodafone's); and that BT had the ability to foreclose Vodafone by not providing the relevant GEA input.

18.95 We note that we would expect BT to have an incentive to foreclose Vodafone absent the merger, both as a broadband provider and as a provider of fixed-mobile bundles (which BT would have been in the counterfactual). While the merger could possibly increase the gains from foreclosing, we are of the provisional view that it would not materially change the incentive to foreclose that exists pre-merger. Therefore, we provisionally conclude that the concern about not providing particular GEA inputs to Vodafone is not merger-specific and cannot, therefore, give rise to an SLC.

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[569] Sky initial submission, paragraph 4.4.

18.96 Even if this concern was merger-specific, however, we considered that the regulatory framework that is in place, which allows CPs such as Vodafone to submit a Statement of Requirements (SoR) to Openreach and, if that is rejected, to issue a complaint to Ofcom,[570] restricts the merged entity's ability to foreclose. We understand that [✄]. The outcomes of SoRs are made public. Sky notes that, despite oversight by the Equality of Access Board, 51% of SoRs generated from within BT have been implemented, as compared to 24% of third party SoRs. We have discussed this issue in more detail in Chapter 16. As we note there, we found that the SoR process is subject to intense scrutiny. In light of the lack of any evidence of BT using the SoR process to discriminate against its current rivals (which suggests that BT does not have the ability to do so), and the countervailing regulatory constraints that BT would face if it attempted to do so post-merger, we provisionally concluded that it was unlikely that the merged entity would be able to harm rival MNOs by pursuing this foreclosure strategy.

Provisional conclusion

18.97 We assessed above whether the merger may be expected to result in an SLC within the provision of wholesale broadband services in the UK. Given our remarks in paragraphs 18.32–18.36 of this chapter, we focused primarily on the merged entity's ability to foreclose, and especially the regulatory constraints on BT's behaviour, which will remain in place post-merger.

18.98 We provisionally conclude that the merger does not give rise to an SLC in the provision of wholesale broadband services:

- We provisionally thought it was unlikely that the regulation of VULA was ineffective in preventing BT's ability to foreclose pre-merger, and we provisionally considered that Ofcom can be expected to take the steps needed to address a future reduction in the effectiveness of the regulation caused by the merger, and that it is not likely that any such reduction would require material amendments to the regulation of VULA. We therefore provisionally found that the merger does not decrease the effectiveness of the VULA margin test to such an extent that it creates or enhances the merged entity's ability to foreclose its rival CPs – even if the regulation were not completely effective pre-merger.

- For SBB inputs, we provisionally thought it unlikely that BT has the ability to reallocate costs in a way that would affect prices.

[570] See Appendix D.

- For the concerns raised in relation to prioritisation of fibre over copper and foreclosure by not providing a specific GEA input, we provisionally concluded that these concerns were not caused or exacerbated by the merger.

19. Retail broadband: overview

Introduction to retail fixed broadband

19.1 Our issues statement outlined two theories of harm concerning retail broadband,[571] namely:

- loss of competition in 'rural' (or Market A) areas in both SBB and SFBB, and
- loss of potential competition in SFBB across the UK.

19.2 This chapter provides an overview of the retail broadband sector, including the players in the market. It also discusses market definition and the nature of competition for both SBB and SFBB. More detail can be found in Appendices K and L

Description of retail broadband

19.3 Fixed broadband access at the retail level enables customers to use the internet and voice services simultaneously. Broadband is supplied either over the customer's telephone line that extends to the local telephone exchange or via a separate cable connection to the customer premises.[572] There are two main categories of broadband: SBB and SFBB.[573]

19.4 Standard broadband is delivered using ADSL technology and can generate speeds up to 24 Mbit/s.[574] The actual speed is determined by the distance of the customer premises to the local telephone exchange (the longer the phone line the slower the speed), whether the telephone exchange has been upgraded to faster ADSL2+ technology, the quality of the copper phone line (damaged copper or poor connections between cables slows speeds down) as well as other factors (for example internet congestion when high broadband usage by many users may slow down speeds during peak hours of internet use).

19.5 Superfast broadband is delivered using a fibre based network that connects to the customer premises in a number of ways as follows:

- FTTC, where a fibre optic cable is run from the local telephone exchange to the customer's nearest street cabinet and then the

[571] We have also investigated the wholesale broadband market, as described in the previous chapter.
[572] A separate cable connection that does not connect to the local telephone exchange.
[573] See chapter 2.
[574] The maximum speed of services provided using ADSL2+.

remaining portion of the connection is a standard copper phone line from the street cabinet to the customer premise.

- FTTP (also known as FTTH), where a fibre optic cable is run to the customer's premises all the way from the local telephone exchange.

19.6 The Virgin Media broadband network delivering FTTC and FTTP is configured in a slightly different way as it is not based on a legacy telephony network architecture. Its FTTC connection runs to the nearest Virgin-owned cabinet[575] and the last portion of the connection for delivering next generation broadband is via a coaxial cable, rather than a copper line.[576]

19.7 SFBB is defined by Ofcom as broadband services with an actual speed of 30 M/bits or higher. Apart from FTTP and cable services which are generally able to deliver near consistent speeds, not all fibre based connections are capable of delivering superfast speeds.

19.8 Broadband delivered through a fibre based network can generate high speeds of up to 152 Mbit/s (and even higher speeds for FTTP connections). The actual speed will however depend on the distance of the customer premises to the nearest cabinet where a copper connection is used for the last portion of the line (the longer the copper connection the slower the speed), the quality of the copper line and the broadband product supplied by the CP (products will offer an advertised speed up to a specified amount).

19.9 Currently, the majority of UK lines are SBB. However, take up of superfast broadband services by customers is increasing and by the end of 2014 over 30% of retail broadband connections had a headline (advertised) speed of 30 Mbit/s or higher.[577]

19.10 At the end of 2014 there were 23.7 million residential and SME fixed broadband lines in the UK. This is comprised of 15.5 million ADSL lines, 3.6 million fibre-based fixed broadband lines and 4.5 million cable lines.[578] Increasing numbers of people live in areas where superfast broadband services are available. Currently 83% of UK premises are in SFBB-enabled areas.

19.11 The government is investing in improving broadband coverage within the UK. Broadband Delivery UK (BDUK) is a governmental body charged with

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[575] This can be a chamber in the ground, rather than a physical cabinet in the street.
[576] Cable refers to the last portion of the connection. A coaxial cable is more efficient than using a copper line for the 'last mile' to homes.
[577] Ofcom (6 August 2015), *The Communications Market Report*, p1.
[578] ibid, pp287–288.

providing SFBB to premises that cannot be covered commercially, so that 90% of all premises can achieve superfast speeds by the end of 2016 (phase 1), and 95% by the end of 2017 (phase 2).[579] In addition, the aim is that basic broadband (2 Mbit/s) should be provided for all by 2016.

Provision of retail fixed broadband services: SBB

19.12 As set out above, SBB is accessed through ADSL technology, which uses copper network infrastructure.

19.13 The larger CPs (BT, Virgin Media, Sky and TalkTalk) operate upstream and have built their own network through which they can provide retail broadband services.

19.14 BT's network has universal coverage to premises across the UK, except for Hull.[580] As well as providing retail broadband under the BT brand, BT also has a brand called Plusnet which operates as a distinct line of business within BT Consumer. BT Wholesale also provides broadband services to other CPs for resale (see paragraphs 19.16–19.18).

19.15 Virgin Media deploys its own cable network,[581] which is concentrated mainly in major towns and cities and is completely separate from the BT network. It currently has coverage of around 50% of premises, but does not offer retail services outside its network area.

19.16 Similarly, Sky and TalkTalk do not have universal coverage to UK premises.[582] To provide retail services outside their core network, they must either install equipment in the local BT telephone exchange and rent the last portion of the line from the local exchange to the premises (known as LLU) or purchase an end-to-end managed wholesale product from BT and resell this on to the end consumer. Areas that are outside an operator's core network and LLU areas are known as 'off-net' areas. TalkTalk stopped offering retail services in off-net areas in early 2015.

19.17 In some areas, for upstream CPs (other than BT), the limited number of premises per exchange reduces opportunities to recover the largely fixed costs on installing LLU equipment, and hence they may decide to not unbundle the local exchange. The lack of physical space in an exchange may also prevent unbundling. However, CPs have told us that in general

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[579] BT is installing the SFBB network in phase 1 (it was awarded all phase 1 contracts). See Analysys Mason (February 2015), Report on UK Telecom market, p12.
[580] Where KCOM owns the network.
[581] Note that 'cable' refers to the cable network operators – their services are provided over fibre.
[582] TalkTalk had 90 to 100% coverage and Sky had 80 to 90% coverage of UK (excluding Hull area) in December 2012. See Ofcom (July 2013), *Review of the wholesale broadband access markets – Consultation*, Table A10.3.

unbundling is considerably more profitable than off-net reselling of BT wholesale products, due to increased control over costs and being better able to differentiate their product through installing their own network equipment (this is discussed further in Appendix L).

19.18 Other CPs such as EE, Post Office and Fleur Telecom only operate at the retail level, and therefore purchase an end-to-end managed wholesale product from BT or other upstream CPs and supply this to the end customer.

19.19 O2 does not currently offer retail fixed broadband services directly to retail customers, although it hosts MVNOs that provide these services.

19.20 Vodafone recently entered the residential broadband market (SBB and SFBB) with the limited launch of Vodafone Connect in June 2015. Vodafone made a full national launch of the product in October 2015. Vodafone Connect uses the Cable & Wireless fixed network acquired in 2012, and complements the existing broadband business product delivered to business customers.

Provision of retail fixed broadband services: SFBB

19.21 SFBB needs to be supplied through a fibre based network from BT, self-supply or from a dark fibre provider.

19.22 Virgin Media uses its own cable network through which it delivers superfast speeds. Other CPs resell BT's wholesale Generic Ethernet Access (GEA) product to deliver SFBB. Sky and TalkTalk have a joint venture agreement with wholesale supplier CityFibre to build a FTTP network in York that is separate from BT's access network. They are due to start connecting customers in [✂] 2015.

Regulation relevant to supply of broadband

19.23 Ofcom requires BT Openreach to provide WLA services on regulated terms. This covers LLU for copper-based CGA services (for provision of SBB), and VULA for fibre-based NGA services (for provision of SFBB). For more detail on the regulation imposed, see Appendices D and K, and the earlier section on wholesale broadband (the VULA regulation is discussed under the theory of harm concerning wholesale broadband – see Chapter 18).

19.24 Take-up of WLA has been low in some areas. This is largely in rural areas where WLA remedies are less viable due to the limited number of premises in the area, which reduces opportunities for CPs to recover the costs of installing LLU equipment.[583] In such areas, Ofcom imposes regulation further down the supply chain.

19.25 In its most recent review in 2014, Ofcom continued to find that BT had SMP in the supply of WBA in areas collectively referred to as Market A. Market A is defined as an area where no or only one Principal Operator[584] (PO) has unbundled or is forecast to unbundle the local exchange. Market A covers 9.5% of premises and is largely in rural areas. It can be subdivided into Market A1 (defined as areas where only BT is present and no other PO has unbundled or is forecast to unbundle the exchange) and Market A2 (defined as areas where one PO other than BT is present or is forecast to be present). We consider these subdivisions separately when appropriate in our assessment.

19.26 To take account of BT's SMP, Ofcom has imposed regulation on BT in Market A areas. Ofcom requires BT to adhere to general access, non-discrimination and transparency obligations as well as a charge control requirement, in order to restrict BT's ability to charge excessive prices to CPs and ensure that the price of BT wholesale products are cost-reflective.[585] For more details, see section on Regulation (see Chapter 4 and Appendix D)

Companies and shares of supply of retail broadband (SBB and SFBB)

19.27 We now consider the companies who supply fixed broadband at the retail level. Estimated shares of supply for fixed broadband in total and for SBB and SFBB separately can be seen in Table 19.1. This shows that in SBB, Sky, BT and TalkTalk are the major players with almost 90% of the market between them; whereas in SFBB, Virgin and BT are by some distance the major players, with 86% share between them.

19.28 EE has a small share of supply, by comparison, having only [✄]% in SBB and [✄]% in SFBB and 4% overall.

583 Ofcom initial submission, paragraph 6.6.
584 Principal Operator is an Ofcom term used in its 2014 WBA market review which refers to relatively large CPs, with a substantial presence across the UK as a whole, on the basis of network coverage. In this review Ofcom considered six CPs to be POs.
585 See Ofcom 2014 WBS market review, final statement, paragraphs 1.8–1.9 and section 6. The general access, non-discrimination and transparency obligations are also imposed on KCOM in the Hull Area where Ofcom found it has SMP.

Table 19.1: Retail shares of supply for fixed broadband, UK, Q1 2015

	All		*SBB only*		*SFBB only*	
	Number	*Share (%)*	*Number*	*Share (%)*	*Number*	*Share (%)*
BT	7,713	32	4,703	30	3,010	36
Virgin Media	4,564	19	493	3	4,071	49
Sky	5,528	23	5,028	32	500	6
TalkTalk	4,283	18	3,804	24	479	6
Other	1,916	8	1,712	11	204	2
Of which EE	884	4	[✂]	[✂]	[✂]	[✂]
Total	24,003	100	15,739	100	8,264	100

Source: Enders Analysis except for figures for EE for SBB only and SFBB only which are sourced directly from EE response to information request.
Notes:
1. Covers residential and business customers.
2. 'Number' represents the number of lines in thousands.
3. Figures for EE for SBB only and SFBB only are for May 2015.
4. Figures broadly similar to Ofcom market share figures.

Market definition

19.29 We now assess the appropriate definition of the market in which to consider the broadband theories of harm.

Product market

19.30 First, we considered the scope of the broadband product market for our analysis.

- *Parties' view*

19.31 The parties submitted that the appropriate product market definition is retail fixed broadband services provided over copper, fibre or cable, regardless of customer type or connection speed, and submitted that SBB and SFBB should be considered within a single product market definition.[586]

- *Ofcom's view*

19.32 Ofcom stated in its 2014 WBA market review that:

> We define the relevant retail market as asymmetric broadband internet access which as a minimum provides an always on capability, allows both voice and data services to be used simultaneously and provides data at speeds greater than a dial up connection. This market includes asymmetric broadband services of all speeds provided over copper, cable and fibre for business and residential customers. It excludes mobile

[586] Parties' response to the issues statement, paragraphs 18.1–18.2.

broadband, symmetric services, fixed wireless access, and satellite broadband.[587]

19.33 Ofcom rejected the suggestion that distinct product markets existed for SBB and SFBB products. It did acknowledge factors pointing to a separate market potentially emerging at some point in the future, though it did not expect the market to segment in the upcoming three year review period (until the 2017 market review). Ofcom attributed this to:

- evidence that average prices for SFBB relative to SBB are only 10% higher, with pricing in general indicating a chain of substitution; and
- the view that SFBB is not yet treated by consumers as a 'must-have' product relative to SBB.[588]

19.34 Ofcom's view in the 2014 WBA market review was that residential and business products are in the same product market. It provided the following reasons:

- Some businesses substitute between residential and business products.
- The evidence on product pricing suggests there is a chain of substitution across all broadband products.
- Supply-side substitution between different types of residential and business products is feasible.[589]

- *Other third parties' views*

19.35 TalkTalk told us that it considered that SFBB was no longer subject to competitive constraints from standard (copper-based) broadband products, but formed a separate retail market. It considered that the most appropriate market definition was likely to be asymmetric, with fibre broadband acting as a competitive constraint on copper-based products, but with no constraint from copper products on SFBB products. It observed that [✂].[590] TalkTalk therefore considered that there was no constraint on SFBB pricing from copper-based products.[591]

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587 Ofcom, Review of the wholesale broadband access markets - Final statement, 2014, paragraph 3.201.
588 ibid, paragraphs 3.43–3.47; and 3.56–3.66. Ofcom continued to note in its 2015 VULA margin statement its view that standard and superfast broadband currently comprise a single retail market as consumers do not consider there to be a significant difference between them.
589 ibid, paragraph 3.90.
590 [✂]
591 TalkTalk response to the issues statement (6 August 2015). See also TalkTalk hearing summary.

19.36 Sky reported that once customers switch to SFBB, they did not typically choose to switch back unless obliged to due to home moves into areas where SFBB was not available. It expressed the view that the constraint was asymmetric, with SFBB constraining SBB, but standard broadband not constraining superfast.[592] Sky noted that in the future it may be appropriate to define separate markets for SBB and SFBB on the basis that SFBB is growing in importance, as high speeds become increasingly synonymous with quality in the eyes of consumers. Sky submitted that Ofcom has recognised that the trends that would support a separate SFBB market – the inability of current generation broadband to act as a constraint on SFBB – are already present and becoming more pronounced. Acknowledging this, Ofcom has adopted different regulatory remedies to different segments (SFBB vs. SBB) of the same market, according to Sky.

19.37 We have not been provided with any submissions suggesting other product segmentations.

- *Our assessment*

19.38 We have used the Ofcom 2014 WBA market review definitions as a starting point for theories of harm related to the supply of retail fixed broadband, namely asymmetric broadband services of all speeds over copper, cable and fibre for businesses and residential customers. We are open-minded as to whether conditions since the publication of the 2014 Ofcom review have changed and therefore how the competition conditions relevant for these theories of harm have evolved.

19.39 We note that recent Commission decisions have defined the relevant market as standardised fixed telecommunication services enabling broadband access to the internet. The Commission considered in the latest set of decisions that there are separate product markets for the provision of retail broadband access to residential and small business customers on the one hand and large business customers on the other.

19.40 We note other evidence provided to us concerning the constraint of SBB on SFBB (see Appendix L). In particular, we note that [✂].

19.41 An internal EE document dated Q4 2013 notes that [✂].

19.42 An internal BT document from April 2014 noted that [✂]. However, the document also stated [✂].

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592 Sky hearing summary.

19.43 We note that the take-up of SFBB is expected to increase, and there is still a sizeable pool of standard broadband customers who have not converted to SFBB.[593]

19.44 This evidence suggests that if CPs are seeking to increase SFBB take-up from among the existing pool of standard broadband customers, then the price of SFBB is likely to continue to be constrained by that of SBB in order to attract consumers to switch.

19.45 We have not seen any indication that mobile broadband is a strong constraint on fixed broadband, and thus our provisional view is that mobile and fixed mobile are not in the same market.

19.46 Our provisional view is that SBB continues to exert some degree of constraint on the terms of supply of SFBB. We have not found it necessary to reach a firm view on whether the degree of constraint is such that SBB and SFBB are and will remain in the same market from either perspective; even on a narrow market definition, we have not found an SLC in either SBB or SFBB, and would not find one on a broader combined market.

19.47 In our competitive assessment, we have, however, considered the competitive constraint imposed by SBB and SFBB on each other where relevant, and considered any differences between competition in the business and consumer sectors.

Geographic market

19.48 From the consumer perspective, fixed broadband supplied in one location is clearly not a substitute for fixed broadband in a different location. However, we will define a geographic market more broadly where conditions of competition are the same. On that basis, most of the UK (excluding Hull, which is less important to our analysis as a result of BT's absence) is in the same geographic market, where there is strong competition between BT and some combination of Sky, TalkTalk and Virgin Media. This is reflected in single national pricing in on-net areas throughout Market B (and Market A2).

19.49 However, conditions of competition are materially different in Market A and, especially, Market A1 (as defined by Ofcom). In particular, given that: all of the major rivals to BT have either withdrawn from off-net areas or do not actively market there; where they do operate, they have higher prices and an inferior product compared to on-net areas; and BT's Plusnet brand charges

[593] Less than one in three retail broadband connections had headline speeds of 30 Mbit/s or more by the end of 2014.

higher prices in Market A1, we view Market A as a separate geographic market.

19.50 We did not find it necessary to conclude whether Markets A1 and A2 are separate markets, but we considered them separately in our assessment where appropriate.

Nature of competition (SBB and SFBB)

19.51 We now consider the nature of competition in SBB and SFBB, by looking at the extent of product differentiation, pricing, and the extent of 'bundling' of broadband products.

Product differentiation

19.52 In order to understand factors affecting the degree of competitive constraint, we considered the degree to which the supply of broadband services may be characterised by product differentiation.

19.53 Broadband services (SBB or SFBB) may be differentiated based on speed, throttling and data allowances. Most of the large CPs provide an unlimited data allowance as part of their standard package with the exception of Sky, BT and Plusnet where both capped and unlimited data allowances are available.[594]

19.54 Broadband services can also be differentiated on the quality/availability and convenience of customer service functions, broadband equipment (such as routers and Wi-Fi boosters) and other broadband features (such as parental controls and internet security).

19.55 Additional opportunities for product differentiation differ between SBB and SFBB, and how the broadband service is delivered.

- *SBB*

19.56 Further scope for product differentiation depends on whether the premises in a given area are connected to the CP's network (on-net) or are off-network (off-net).

19.57 CPs providing fixed broadband services through their own network or through BT exchanges that they have unbundled (ie on-net) are able to

[594] Additional per unit charges apply for data consumed in excess of the capped allowance. For Plusnet, currently both capped and unlimited data allowances are available for business customers and only unlimited data is available for residential customers.

differentiate on price, speed, and quality of service (eg ensuring consistent speeds and line maintenance/fixing of faults).

19.58 CPs operating in off-net areas or only at the retail level have more limited opportunities for product differentiation, as in this case CPs resell an end-to-end managed product from another provider. This is generally BT Wholesale in Market A where no or limited other CPs have network reach or have unbundled the local exchange. In Market A1, therefore, the speed and technical management of the line will be identical across all providers since they retail the BT Wholesale product and given that the per unit costs are regulated there will be limited scope to lower prices to attract new customers.

- *SFBB*

19.59 For SFBB, CPs other than Virgin Media (which has its own network) resell BT's wholesale Generic Ethernet Access (GEA) product to provide a fibre broadband service to their customers.[595]

19.60 BT argued that reliance on BT's GEA service did not preclude differentiation at the retail level. It referred to the Ofcom 2014 Fixed Access Market Review Statement that noted:

> VULA provides a virtual connection that gives CPs a direct link to their customers and provides flexibility over how this link is integrated into their network and over product offerings.

19.61 It also referred to the Ofcom 2010 WLA market review, which stated:

> VULA could allow significant product differentiation and innovation, potentially similar to the opportunities available using physical access products. For example, a CP would be able to provide a range of services over this connection, eg voice, video, internet services. It would also have total control over the dimensioning and operation of the backhaul and core networks needed to support these services.[596]

19.62 We note Ofcom's assessment that the characteristics of WBA products provided on networks that deliver SFBB (NGA) are essentially the same (although some of the upstream inputs are different). This is because WBA

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[595] In areas outside Hull (KCOM owns the network in Hull.)
[596] Ofcom (2014), *FAMR Statement*, paragraph 12.4. Ofcom (2010), *WLA market review*, paragraph 8.4.

products provide aggregated access to many customers, and offer less scope for innovation than direct access to the more upstream infrastructure.[597]

19.63 Sky told us there is currently little prospect of other operators (apart from Virgin Media) being able to do anything other than resell the BT Wholesale product, thus limiting the scope for retail differentiation (this is discussed in more detail in Chapter 20, which considers SFBB).

Pricing

19.64 The costs to CPs of providing broadband services depend upon whether they are provided on-net or off-net, and the area in which the service is provided.

19.65 As set out earlier (see paragraph 19.16), off-net CPs wishing to offer a retail product must purchase an end to end wholesale broadband product from an upstream CP. In rural areas where there is less population density over which upstream CPs can recover costs, the costs of the wholesale product are typically higher than for other areas. Downstream CPs in these areas typically face higher per unit costs than for areas where there is a higher population density and where upstream CPs are better able to recoup the (fixed) costs of building network and installing equipment in unbundled local exchanges.

19.66 Therefore CPs may offer differentiated prices depending on whether they serve the retail market using LLU (on-net) or by using WBA products purchased from another CP, particularly BT (off-net), which cost may in turn vary by area.[598]

19.67 BT's main retail offering is currently priced nationally for residential products. For business products, fibre is priced nationally but varies geographically for those with ADSL connections with higher prices across the whole of Market A. BT's wholly-owned subsidiary Plusnet varies its pricing on a geographic basis and charges more for areas where no CP has unbundled the local exchange (Market A1). EE, which supplies purely using WBA, prices nationally for fibre and prices differentially for ADSL connections with higher prices charged for the whole of Market A. Sky also charges more for its broadband product in its off-net areas. TalkTalk and Virgin Media maintain a single national price for products in their on-net areas (they no

[597] Ofcom (2014), WBA market review, paragraph 2.7.
[598] Ofcom initial submission.

longer provide an off-net product, having divested their off-net customer bases).[599]

Bundling

19.68 As described earlier in Chapter 5, we have defined 'bundles' as where a CP supplies more than one service to a consumer. Broadband services are offered by some operators as part of a bundle with fixed voice, TV and/or mobile services. The emergence of fixed-mobile bundles in the UK is discussed in Appendix H.

19.69 The majority of CPs bundle fixed broadband with fixed voice, or fixed voice and pay TV.[600] Only Virgin Media offers a fixed broadband service that does not include a fixed voice service of any description.[601] Currently, most residential consumers are on fixed voice and broadband or fixed voice, broadband and TV packages (see Appendix L, Figure 1).

19.70 Several providers offer, or plan to offer, mobile services that are available only to, or with a discount for, their broadband customers.[602] However, quad-play bundles[603] (fixed voice, fixed broadband, TV, mobile phone) have so far been taken by 2% of households (see Appendix L, Figure 1).

19.71 For the purposes of considering the identified theories of harm in retail broadband, we have taken each provider's fixed broadband product and line rental/fixed line ('dual-play') as the main point of comparison, particularly as all the CPs offer this package (including BT, Plusnet and EE) and a significant proportion of households choose this package.[604]

19.72 In the next two chapters we consider each retail fixed broadband theory of harm in turn.

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[599] For Virgin Media, this applies to residential customers only.
[600] Looking at the period from 2011, all the large CPs provide a fixed broadband and voice package; BT, Sky, TalkTalk and Virgin Media (but not Plusnet) all provide a fixed broadband, voice and pay TV package (from 2013 for TalkTalk); EE has not provided a package including pay TV up to present, but it does offer a fixed broadband, voice and mobile package.
[601] Ofcom (2014) *CMR*, p356.
[602] BT, TalkTalk, Sky, Virgin Media. Fixed/mobile bundles are currently offered by Virgin Media, TalkTalk and EE. BT has launched a SIM-only mobile package and Sky is set to launch its own fixed/mobile bundles in 2016. Vodafone recently launched its fixed/mobile service, and has announced its intention to add TV services.
[603] Consumers were asked if they received more than one of these services as part of an overall deal or package from the same supplier.
[604] Dual-play was the most prevalent package chosen in Q1 2015. 27% of households have dual-play packages, followed closely by triple-play at 25%. See Appendix L Figure 1 for further information.

20. Retail broadband: competitive assessment – loss of potential competition in Market A

Outline of theory of harm

20.1 The concern under this horizontal theory of harm is that the merged entity may have an incentive to raise retail prices or reduce the quality of retail fixed broadband provided in those areas where little LLU[103] has taken place at local exchanges. Our assessment is based on Market A. However, we recognise that parties and third parties sometimes refer to Market A as 'rural' areas, although it should be noted that these can be in urban areas.

20.2 This theory of harm is concerned with both SBB and SFBB, and each will be considered in our competitive assessment.

20.3 As explained earlier (see paragraph 19.25), Ofcom has divided local exchanges into two types according to whether and to what extent they have been unbundled. It classifies Market A as areas where up to one PO is present or forecast to be present through their own network or LLU.[104]

20.4 Within Market A, BT has a high retail market share. Although EE has a small share overall, EE is present at the retail level in some areas where only one PO (BT) is present with its own network and there is only a small number of operators reselling BT's product.

20.5 Similarly, many CPs do not offer or actively market SFBB outside the areas where they have unbundled exchanges and so there is limited competition. EE is one of a small number of CPs that offers SFBB in these areas.

Parties' views

20.6 The parties told us that EE is not [✂]. [✂]

20.7 The parties stated that the proposed merger would not present an appreciable increment to BT's rural market share. In addition, the proposed merger would not diminish the ability of established or prospective broadband suppliers to serve rural customers or to fill EE's pre-transaction role as a WBA operator.[105]

[103] See Chapter 2 and Appendix L.
[104] See Ofcom initial submission.
[105] See main parties' response to the issues statement. They also argue that from a consumer perspective, broadband products provided over WBA do not differ from those provided from unbundled exchanges. They refer to Ofcom and Competition Commission decisions, which they say show that suggestions that LLU-based

Third parties' views

20.8 TalkTalk told us it was concerned about the impact of the merger on competition in retail broadband in some areas. TalkTalk considers that there would be an SLC in the SBB market in areas where exchanges have not been unbundled (Market A1). It said that customers in these areas only have a choice of three major operators at present: BT, Sky and EE. TalkTalk and Virgin Media are no longer active in the supply of retail broadband in these areas and it understands that Sky does not actively market its off-net products. It considers that the merger will therefore reduce the number of significant active competitors from three to two in these areas. TalkTalk said that EE is likely to be one of the key constraints preventing BT from further increasing prices in these areas.[106] If EE is not acting as a constraint on BT in these areas, then it said it is not clear which competitors would be doing so, given the lack of other major competitors interested in serving customers in market A1, and the niche focus of smaller players such as [✂].[107] Post Office also voiced similar concerns.

Our assessment

20.9 To investigate this theory of harm, we have focused on retail broadband competition in Market A. We considered the following:

- To what extent is EE a constraint on BT in Market A?
- To what extent are competitors a constraint on BT in Market A?
- To what extent are there likely to be new entrants (or expansion) in Market A?

20.10 The following section considers these questions in turn.

EE as a constraint on BT in Market A absent the merger

20.11 We first looked at the extent to which EE could be considered to be a constraint on BT in the supply of broadband (SBB and SFBB) in rural areas (defined as Market A), by considering:

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competition is to some extent superior to WBA-based competition has been previously rejected (see for example paragraphs 7.76–7.80, 7.122 & 7.145 of the March 2013 Competition Commission decision on the appeal of Ofcom's 2012 WLR and LLU charge control. BT/EE response to the issues statement (July 2015), paragraph 17.3.

[106] It notes that BT already price discriminates against these areas by charging a higher price for Plusnet products than in areas where there is greater competition for customers.

[107] TalkTalk initial submission, paragraphs 3.51–3.54; and TalkTalk response to the issues statement, paragraphs 8.1 to 8.3.

- share of supply of EE
- trend in EE's share of supply
- pricing
- non price factors affecting EE's competitiveness
- switching to EE
- market perception of EE as a competitor

Share of supply of EE

20.12 We first looked at the market presence of CPs in Market A (see Appendix L for more detail).

20.13 Table 20.1 below shows the estimated shares of supply of the largest suppliers of retail fixed broadband in Market A ('rural' areas) and Market B (the rest of the UK).[108] This indicates that EE share is small ([✄]% for both Market A and B), compared with other operators. As the estimated share of supply of BT in Market A is [✄]%, the incremental impact of EE on the merged entity share is therefore proportionately small.

Table 20:1 Estimated market shares for retail fixed broadband, December 2014

Operator	*Estimated Market A share**	*Estimated Market B share†*	*Estimated national share* (%)
BT	[✄]	[✄]	[✄]
TTG	[✄]	[✄]	[✄]
Sky	[✄]	[✄]	[✄]
Virgin Media	[✄]	[✄]	[✄]
EE	[✄]	[✄]	[✄]
Others	[✄]	[✄]	[✄]

Source: Parties; [✄].
*9.5% of premises.
†89.8% of premises.

20.14 We then looked in more detail at the estimated share of supply of EE in Market A, by considering Market A1 and A2 separately. The evidence we received suggested that EE's share is small - approximately [✄]% for both Markets A1 and A2.

20.15 We then looked more closely at individual exchanges where the EE share of premises served by that exchange was higher than average.

[108] Except the Hull area where KCOM is the only significant provider (which accounts for 0.7% of UK premises). See Ofcom (2014), *WBA market review summary*.

20.16 There are a small number of exchanges where both EE and BT have significant market share with limited other operators present. These exchanges have a small coverage of UK premises ([✂]) for both SBB and SFBB.

20.17 For copper (ie in general, SBB) in most exchanges in Market A1 the share of EE is similar to or less than its national share. EE's share is 4% or more in exchanges equating to around [✂]% of UK premises, and exchanges with the highest shares of supply (where shares of [✂] were observed) covered only [✂]% of UK premises.

20.18 The situation is similar for fibre. EE's share is 4% or more in exchanges equating to around [✂]% of UK premises, and exchanges with the highest shares of supply (where shares of [✂] were observed) covered only [✂]% of UK premises.

20.19 This suggests that there are very few exchanges where EE could plausibly be a major constraint on BT.

20.20 Our provisional view is that EE in general has a small retail broadband customer base in rural areas compared to BT and other competitors, and although there are a small number of exchanges where both EE and BT have higher market shares with limited other competitors, this represents a small proportion of UK premises.

Trend in EE's share of supply of rural retail broadband

20.21 Having provisionally concluded that the current share of supply of EE was small, we looked at whether it could be expected to grow significantly, and thus provide a greater future constraint on BT, absent the merger.

20.22 [✂].[109]

20.23 [✂]

20.24 We investigated whether there was evidence of a trend in the EE share of supply. Evidence we received was inconclusive, suggesting that from September 2013 to March 2015, EE's share was [✂] for SBB but [✂] for SFBB. We note that as of March 2015, the proportion of exchanges with fibre customers was 69% for Market A2 and 33% for Market A1, suggesting that fibre was not available for most of Market A1.

[109] EE said that the vast majority of its marketing is targeted at its existing customers rather than generic newspaper or TV advertising, and so it can target geographically.

20.25 Our provisional view is that there is some evidence that EE's share in Market A broadband has increased over the last couple of years, but it is not clear that this growth will continue.

EE retail broadband pricing in Market A

20.26 In this section we analyse the relative pricing of BT, Plusnet, EE and other competitors in order to determine whether EE was likely to exert a competitive constraint on BT brands in Market A absent the merger, considering SBB and SFBB separately.

- *SBB*

20.27 We looked at the pricing of the options available for residential fixed broadband offered by the main CPs outside Market A (see Appendix K), both as a snapshot for a particular point in time taking account of available promotions, and looking at the lowest cost options over time. This analysis indicated that Plusnet is among the cheapest and BT is among the most expensive options. The relative ranking of EE varies, but the average monthly cost never puts EE as the cheapest or second cheapest option.

20.28 We then considered the higher prices imposed by CPs on customers in Market A compared to other areas. We noted that EE imposes a £15 surcharge across the whole of Market A which is higher than that charged by any other main competitor (whether on-net or off-net), and is the only CP to charge a connection surcharge for Market A. It is likely that EE's retail price in Market A1 and A2 for standard broadband is higher than the prices of most of its largest competitors for comparable products, and significantly higher than BT or Plusnet.

20.29 Given these price differentials, while the evidence we looked at only compared the relative prices of EE with those of other CPs for a selection of dates and took limited account of promotions, it appears that for most premises in Market A, EE is unlikely to represent strong price competition for BT unless it offers significant promotions (which it has not previously done).

- *SFBB*

20.30 Only Plusnet applies a surcharge for SFBB in Market A (for exchanges in Market A1).[110] No other provider (including EE) charges a surcharge for Market A where it offers fibre to retail customers.

[110] See Appendix L, Table 7b.

20.31 However, a comparison of the largest CPs' lowest cost SFBB services for April 2014, March 2013 and March 2012 shows that, excluding line rental, the monthly cost of EE's lowest cost superfast broadband package was considerably higher than those of the other main CPs, including BT and Plusnet.

20.32 We viewed internal strategy documents from EE for the periods of August 2014, November 2014 and March 2015 and Sky for October 2014, which show that [✂].

20.33 Given these price differentials, it appears that for Market A, EE is unlikely to represent strong price competition for BT in SFBB unless it offers significant promotions (which it has not previously done).

- *Provisional conclusions on pricing*

20.34 Given the price differentials described above, it appears that EE is unlikely to represent strong price competition for BT in SBB or SFBB unless it offers significant promotions (which it has not previously done).

20.35 We recognise that the decision of BT to price its fixed voice, SBB and SFBB products on a national basis is a commercial choice and it is not bound by this post-merger, so theoretically it could choose to increase its prices to a level at which EE would become more of a competitive constraint. However, given the small proportion of premises in Market A, the small scale of EE nationally, and other important competitive constraints generally, we would not expect this merger to give BT the incentive to deviate from this pricing policy.

Non-price factors affecting EE's competitiveness

20.36 Ofcom found that EE generated the most complaints for broadband as a proportion of its customer base for each quarter in the period Q1 2013 to Q3 2015.[111] The main parties said that they are not aware of any evidence that suggests that EE's quality of service is stronger in Market A than elsewhere in the UK. [✂]. It therefore appears that quality of service should not be regarded as a competitive strength of EE.

20.37 [✂]

20.38 [✂]

[111] Ofcom (June 2015), *Latest customer complaint numbers*.

20.39 [✂][112]

20.40 [✂]

20.41 We note that consumers may be aware of Ofcom research suggesting EE was a reliable mobile network.[113] However, EE reported that [✂].

20.42 [✂]

20.43 [✂]

Switching to EE

20.44 We looked at customer switching between CPs to see what further insights this provides over and above the recent market share statistics set out previously. [✂]

20.45 Our provisional view is that EE appears to be losing customers to BT, rather than gaining them, which suggests EE is not acting as a significant constraint on BT.

Perception of EE as a competitor

20.46 We then investigated whether EE was considered to be an important competitor in the supply of retail rural broadband.

20.47 BT told us that it did not consider EE to have a value proposition comparable to that of [✂]. It provided evidence from internal planning documents which stated that [✂].

20.48 BT said that Plusnet does not consider EE to be a meaningful constraint on the price, quality, or any other aspect of its provision of broadband services in A1 or elsewhere. The 'key competitors' mentioned in Plusnet's internal documents are [✂]. Other competitors ([✂],[114] [✂]) are mentioned but with no such emphasis.

20.49 Our provisional view is that EE is not perceived to be one of the main competitors in broadband by BT.

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[112] See Appendix L, Figure 7.
[113] Ofcom (August 2014), *Consumer experiences of mobile phone calls*. 94% of calls on the EE network were successfully connected, 87% on O2, 86% on Three and 80% on Vodafone during the second half of 2013.
[114] O2 has since exited the supply of residential broadband.

Provisional conclusion on EE as a constraint on BT

20.50 Our provisional view is that EE does not impose a significant competitive constraint on BT in retail broadband in Market A.

20.51 In SBB, evidence provided to us indicated that EE was unlikely to exert a strong competitive constraint on BT unless it offered other differentiating features.

20.52 In SFBB Market A, EE is one of only a few competitors providing fibre services. However, EE's SFBB prices are higher than those of other large CPs, so it is unlikely to exert strong competitive constraint on BT unless it offered other differentiating features.

Constraint imposed by competitors on BT

20.53 We now turn to assessing the constraint imposed by other competitors on BT in Market A broadband, again looking at SBB and SFBB separately.

SBB

20.54 We looked first at the network reach of the CP, (or POs, as Ofcom describes them) in Market A.

20.55 Table 20.2 shows the network and LLU coverage of Market A by PO in September 2013. Other than BT, the main PO with significant network coverage of Market A premises is TalkTalk, and even then the coverage is only of 45% of premises. All other POs have a small network footprint.[115] This suggests that there remain significant further sunk costs that would need to be incurred by operators other than BT to provide comprehensive coverage across Market A.

Table 20.2: Network and LLU cover of Market A premises by PO, September 2013

	%
Operator	*Market A coverage*
BT	100
Sky	0-10
TalkTalk	44.8
Virgin	0-10
Vodafone	1

Source: Ofcom (2014), Review of the wholesale broadband access markets final statement, Table 5.3.
Note: Ofcom intends to update this table in autumn 2015 in preparation for its 2017 WBA review.

[115] We note that the combined network reach of POs other than BT means that exchanges where only BT is present (no other PO is present either through its network or through LLU) amounts to only 5.2% of UK premises.

20.56 This suggests that there is only a limited presence in Market A of competitors operating on-net.

20.57 As noted earlier (see paragraphs 19.53 to 19.58 there is little scope to differentiate a broadband product from competitors when operating off-net, although we recognise that new competitors (eg Fleur Telecom) are attempting to differentiate themselves through customer service).

20.58 The parties provided data on the retail copper share of supply in Market A excluding cable (that is SBB but excluding Virgin Media). Given that Virgin Media has a small presence in Market A, as its network is concentrated in urban areas, this will slightly overstate the parties' shares of supply of SBB in Market A (see Table 20.3).

Table 20.3: Retail copper share of supply (excluding cable)

				%
	BT wholesale share	*BT CPs share*	*EE share*	*Other CPs share*
A1 (BT Only)	[✂]	[✂]	[✂]	[✂]
September 2013	[✂]	[✂]	[✂]	[✂]
March 2014	[✂]	[✂]	[✂]	[✂]
September 2014	[✂]	[✂]	[✂]	[✂]
March 2015	[✂]	[✂]	[✂]	[✂]
A2 (BT + 1 PO)	[✂]	[✂]	[✂]	[✂]
September 2013	[✂]	[✂]	[✂]	[✂]
March 2014	[✂]	[✂]	[✂]	[✂]
September 2014	[✂]	[✂]	[✂]	[✂]
March 2015	[✂]	[✂]	[✂]	[✂]

Source: BT [✂].
Note: [✂]

20.59 [✂]

20.60 [✂] This suggests that competitors other than EE do provide some competitive constraint on BT for SBB across Market A.

20.61 Our provisional view is therefore that there is some competitive constraint imposed by competitors in SBB on BT in Market A.

SFBB

20.62 The parties provided data on the retail fibre share of supply in Market A excluding cable (that is, SFBB but excluding Virgin Media). Given that Virgin Media has a small presence in Market A, as its network is concentrated in urban areas, this will only slightly overstate the parties' shares of supply of SFBB in Market A (see Table 20.4).

Table 20.4: Retail fibre share of supply (excluding cable)

				%
	BT wholesale share	*BT CPs share*	*EE share*	*Other CPs share*
A1 (BT Only)				
September 2013	[✂]	[✂]	[✂]	[✂]
March 2014	[✂]	[✂]	[✂]	[✂]
September 2014	[✂]	[✂]	[✂]	[✂]
March 2015	[✂]	[✂]	[✂]	[✂]
A2 (BT + 1 PO)	[✂]	[✂]	[✂]	[✂]
September 2013	[✂]	[✂]	[✂]	[✂]
March 2014	[✂]	[✂]	[✂]	[✂]
September 2014	[✂]	[✂]	[✂]	[✂]
March 2015	[✂]	[✂]	[✂]	[✂]

Source: Parties; [✂].
Note: [✂]

20.63 This evidence suggests that BT's share of SFBB in Market A at the retail level is [✂] in Market A1 and [✂]% in Market A2) with other POs (excluding EE) combined having shares of [✂]% in Market A1 and [✂]% in Market A2. This suggests that competitors other than EE do provide some, if limited, competitive constraint on BT across Market A.

Provisional conclusion on constraints imposed by competitors on BT

20.64 Our provisional view is therefore that there is a limited constraint imposed by competitors on BT in the supply of broadband in Market A.

Likelihood of new entrants or expansion

SBB

20.65 Ofcom said in its WBA 2014 market review statement that LLU roll-out was slowing considerably as CPs reached the less profitable exchanges. If there is only limited future unbundling of exchanges, the coverage by CP networks of Market A is unlikely to increase significantly.

20.66 CPs have told us that there will be limited future unbundling of exchanges, and Virgin Media said that its lack of presence in Market A will continue as it has limited network coverage in rural or semi-rural areas and does not plan to extend its coverage significantly to Market A.[116]

20.67 The likelihood of offnet expansion of existing large CPs in Market A appears to be low, particularly in Market A1. TalkTalk and Virgin Media recently sold their off-net customer base,[117] [✂].[118] This appears to indicate that large

[116] Virgin Media hearing summary (30 July 2015).
[117] For Virgin Media, this applies to their residential customers only.
[118] [✂]

CPs have little appetite for providing broadband in off-net areas. However, if prices were to rise, there are no technical obstacles to entry: any CP would be able to buy a wholesale product from BT, and the broadband service would be the same as BT's in terms of speed and consistency of service.

20.68 It is too early to note whether Fleur Telecom would be able to exert a significant competitive constraint post-merger. Fleur Telecom considers that it is unable to compete with BT/Plusnet on price for broadband as they sell below Fleur Telecom's costs, so it has to compete using a bundle that includes a highly discounted mobile package, and using other service offerings.[119]

20.69 Vodafone said that it does not currently plan to provide fixed retail broadband services in Market A.[120]

SFBB

20.70 Ofcom told us that the take-up in fibre and the expansion of BT's fibre network (including through BDUK[121]) has meant that they believe there is likely to have been an increase in the take-up of CPs of the regulated VULA product to enable them to supply SFBB to retail customers.[122] Ofcom said that the barriers to entry and take-up by CPs for fibre are low, as fibre enabled at any given exchange covered a greater number of premises than copper from the same exchange (thus many Market A premises are served by VULA from a Market B exchange), and the incremental cost of enabling VULA once LLU is enabled is low.

20.71 Some third parties had suggested that the limitations of the Ofcom regulation (the VULA margin test) would make it impossible to compete effectively with BT off-net because of the high price of those inputs.

20.72 Virgin Media told us that it was investing in expanding its network. The investment was focusing on 'in-filling' its existing network, rather than expanding into additional geographical areas, but it would enable Virgin Media to extend its network by an additional 4 million premises to around 17 million UK premises by 2020. This would represent an increase in its current coverage of around 50% of UK premises to an estimated 57% coverage by 2020.[123] However, as it told us that it does not plan to offer SFBB off-net (ie

[119] Parental control software and virus protection. Customers receive a £10 monthly discount on mobile services if they take broadband and line rental from Fleur Telecom.
[120] Vodafone hearing summary.
[121] See paragraph 19.11 for more details.
[122] In the context of an Ofcom market review.
[123] Source: Enders Analysis UK broadband, telephony and pay TV trends Q4 2014

outside its fibre network), the competitive constraint it imposes on BT would be limited to its network area and would have limited impact on Market A.

20.73 Vodafone launched superfast broadband services in June 2015 for the consumer segment [✂]. This will provide additional competitive constraint to BT.[124] However, Vodafone told us that it does not currently plan to provide fixed retail broadband services in Market A.[125]

20.74 We noted that any operator could purchase the required inputs (VULA) from BT to supply SFBB, as these were regulated products. In addition, inputs could be obtained from other suppliers (as described earlier in 19.21).

20.75 This suggests that barriers to entry to the SFBB market are low, as it would not be necessary for potential suppliers to invest in their own network in order to enter the market.

20.76 We considered the VULA margin test in our assessment of wholesale broadband (see Chapter 18), and we did not find it was likely that the merger would make the test materially less effective.

Provisional view on likelihood of expansion/entry

20.77 We sought evidence on any plans for CPs to expand their broadband operations in rural areas, but did not receive any.[126] However, we note that any CP would be able to purchase a wholesale product from BT to enable them to supply broadband (SBB or SFBB), and also take into account our assessment of wholesale broadband leading to our provisional conclusion that the merger would not lead to an SLC in that market. Our provisional view is therefore that the barriers to entry for CPs in the rural retail broadband market are low, and that if prices were to rise substantially then countervailing entry or expansion may occur in the market.

Provisional view on reduction in competition for retail broadband in Market A

20.78 Our assessment has looked at the supply of retail broadband in rural areas, defined as Market A, where no or only one PO has unbundled or is forecast to unbundle the local exchange.

20.79 In these areas, EE has a small retail customer base in Market A for both SBB and SFBB compared to BT and other competitors, and although there

[124] Note that Vodafone is not included in the Ofcom projected shares of supply in SFBB referred to in Appendix L.
[125] Vodafone hearing summary.
[126] For example, [✂].

are a small number of exchanges where both EE and BT have significant shares of supply, these represent a very small proportion of UK exchanges.

20.80 Across Market A, EE applies a significant surcharge for SBB that exceeds any surcharge applied by its main competitors within this area (including the surcharge applied by BT for business SBB product). While EE does not charge a surcharge for its SFBB product, the evidence we have viewed suggests that EE's pricing is not particularly aggressive compared to its competitors. We saw no evidence that EE is a stronger competitive constraint than its share of supply suggests.

20.81 We recognise that the decision of BT to price its residential SBB and SFBB product on a national basis is a commercial choice and it is not bound by this post-merger. However, given the small proportion of premises in Market A, the small scale of EE nationally and within Market A, we would not expect this merger to give BT the incentive to deviate from this pricing policy.

20.82 While large CPs have little current appetite for providing broadband in off-net areas, there are no material technical or other obstacles to entry if prices were to rise: any CP would be able to buy a wholesale product from BT, and the broadband service would be the same as BT's in terms of speed and consistency of service.

20.83 Our provisional view is therefore that the merger would not be expected to result in an SLC in any market or markets in the UK as a result of loss of competition in the supply of retail broadband (SBB and SFBB) in Market A.

21. Retail broadband: competitive assessment – loss of potential competition in standard broadband and superfast broadband

21.1 In this section, we describe the theory of harm concerned with the supply of SFBB at a national level, the views of parties and third parties concerning the theory of harm, and our assessment and preliminary conclusion. More details of our analysis can be found in Appendix M.

Outline of theory of harm

21.2 As described earlier (see paragraph 281), SFBB is defined as broadband with speeds in excess of 30 Mbit/s. BT and EE are currently both present in the supply of SFBB.

21.3 The theory of harm we are considering is that there would be a potential loss of competition in the retail supply of SFBB due to the merger. We are considering not just EE's current share but the share it would have been likely to achieve in the future. For example, if the trend of SFBB customers upgrading from SBB continues, EE's existing broadband customer base makes it one of the few plausible competitors to BT in SFBB. The merger would remove this competitive constraint, which could lead to higher prices or lower quality.

21.4 This chapter looks at the loss of potential SFBB competition across the UK as a whole, whereas the previous chapter addressed the theory of harm concerning the loss of broadband competition in Market A for both SBB and SFBB.

Parties' views

21.5 The parties argued that the proposed merger will not result in an SLC in the retail supply of SFBB. They told us that BT estimated it had a [✂]% share of supply in the SFBB segment[127] [✂]. [✂], as EE had only approximately [✂]% of the total number of SFBB customers in the UK, and this share had not recently increased in a meaningful way.

21.6 [✂].[128]

Third parties' views

[127] We note that this estimate for BT's share ([✂]%) is different from the estimate from Ofcom ([✂]). See Appendix M for Ofcom figures.
[128] Parties' response to the issues statement, paragraph 17.4.

21.7 Two third parties (Sky and TalkTalk) raised concerns that, particularly outside Virgin Media's network area, BT currently had a strong position in SFBB and EE was one of relatively few competitors that could constrain it.

21.8 Sky argued that BT's rate of conversion of its broadband customers to SFBB is much higher than any of its competitors, and that it expected that the additional broadband customers that BT will acquire will be quickly upgraded to SFBB, increasing its share of SFBB customers.[129]

21.9 TalkTalk argued that there were significant barriers to entry – all the main SFBB retail providers have achieved market share primarily by upgrading customers from SBB.[130]

21.10 Ofcom told us that although BT has a large share in SFBB, in the light of other operators' shares it seemed unlikely that the merger would give rise to competitive concerns because of the elimination of EE as an independent competitor in SFBB.[131]

Our assessment

21.11 To assess this theory of harm, we considered whether EE was a significant competitive constraint on BT, or was likely to be so in the near future, taking into account EE's own strengths and those of other competitors. To do this we considered the following:

- To what extent are other competitors a constraint nationally on BT's SFBB product?
- To what extent is EE a constraint nationally on BT's SFBB product?
- To what extent are there were likely to be new entrants in SFBB or expansion of existing SFBB players?

Competitors as a competitive constraint on BT in SFBB

21.12 We first looked at whether suppliers of SFBB other than EE would act as a competitive constraint on the merged entity, by considering the shares of supply of competitors compared with BT, the acquisition of SFBB customers, and the economics of supply of SFBB for competitors.

[129] Sky preliminary ITC, paragraphs 5.3–5.4.
[130] TalkTalk preliminary ITC, paragraphs 3.3–3.9.
[131] Ofcom initial submission.

Shares of supply in SFBB

21.13 The two main providers of SFBB are BT and Virgin Media, with shares of supply of 36% and 49% respectively in Q1 2015.[132] Data from Ofcom indicates that over the last two years, [✂].

21.14 As mentioned previously, Virgin Media has the largest share of supply of SFBB at 49%, and is the main competitive constraint on BT in SFBB in the network area it covers. However, it does not supply SFBB outside its network area and has no plans to do so. We must therefore also consider the competitive situation in the area outside the Virgin Media network. As described before (see paragraph 20.70), we note that Virgin Media's current network expansion, 'Project Lighting', will extend the network to approximately 4 million additional premises over the next five years, increasing the number of homes and businesses within the Virgin Media network area by a third, from around half of the country today to nearly 17 million premises by 2020, representing an expected 57% coverage of UK premises.[133]

21.15 While we do not have data on market shares outside Virgin Media's network areas, given the UK trend and the reasons for it, it is likely that Sky and TalkTalk are also increasing their market share in these areas. We use an approximation of what market shares of CPs are likely to be outside of this network by excluding Virgin Media from data available on national market shares. Data provided by the parties on shares of supply for fibre customers, excluding Virgin Media, show that [✂].[134] We observed that: [✂]

21.16 It is likely that although BT has the largest share outside the Virgin Media network area, other CPs also have significant and growing shares.

Acquisition of SFBB customers

21.17 In this section, we review the extent to which SFBB customers are acquired through upgrading existing customers rather than through acquiring new customers. This will help us to assess the extent to which third parties may be able to exert sufficient competitive constraint on the merged entity post-merger.

21.18 We observe that the source of new SFBB customers varies between competitors. For [✂] and [✂], currently most SFBB acquisitions are from competitors, whereas around two years ago most SFBB acquisitions were

[132] See Figure 2 in Appendix M.
[133] Source: Enders Analysis UK broadband, telephony and pay TV trends Q4 2014.
[134] See Table 2 in Appendix M.

from existing SBB customers upgrading to SFBB. For [✂] and [✂], the source of most SFBB acquisitions continues to be existing customers upgrading from its standard broadband service and/or from other services ([✂] or [✂]).

21.19 We note that [✂]. Sky's pay TV service is the biggest in the UK, with [✂] subscribers as of Q3 2014. Since launching fixed broadband and voice services in 2006, Sky has been successful at upgrading its pay TV base onto triple-play tariffs (phone, broadband and TV), and had [✂] by Q3 2014.[135]

21.20 We note that our review of BT Consumer's internal strategy documents on broadband indicated that [✂], and that [✂] was seen as a particularly strong competitor.

21.21 [✂]

Economics of providing SFBB

21.22 As set out earlier in paragraph 19.21, CPs without their own fibre network use inputs from BT in order to supply their customers with a competing fibre broadband service. This product provides access to BT's network through VULA. BT's retail SFBB bundles must comply with the VULA margin test, which means that BT must maintain a minimum margin between the wholesale price of VULA and the average retail price of broadband packages that use VULA as an input. The purpose of this obligation is to ensure that BT cannot use its SMP in the WLA market to set the VULA margin such that it causes retail competition in superfast broadband to be distorted.

21.23 Competition is strong particularly for SFBB entry level products and those customers considering switching to SFBB continue to be highly price sensitive, resulting in keen pricing in this segment

21.24 An internal EE document dated Q4 2013 notes that [✂].

21.25 [✂].[136]

[135] Analysys Mason (February 2015), *Report on UK Telecom market*, p7.
[136] BT (April 2014), *Core Products Insight – Overcoming Infinity Barriers*, pp3 & 9.

Our provisional view on competitors as a constraint on BT in SFBB

21.26 Evidence provided to us suggests that competition is strong in SFBB in the areas within Virgin Media's network area, with Virgin Media having the highest share of supply.

21.27 Outside Virgin Media's network area, we note that although BT has a share of supply of around [✄]%, competitors have significant shares and are likely to be currently gaining share in the supply of SFBB at the expense of BT. Sky in particular is considered to be particularly strong competitor given its existing customer base and opportunities to cross-sell from its popular television products.

21.28 We recognise the concerns of third parties about the economics of providing SFBB through purchasing inputs for providing SFBB from BT and the VULA margin test. However, these inputs are regulated by Ofcom and our competitive assessment of wholesale broadband provisionally finds that the merger will not make the test materially less effective.

21.29 Our provisional view is therefore that competitors other than EE do impose a constraint on BT in SFBB nationally.

EE as a constraint nationally on BT in SFBB

21.30 To assess to what extent EE currently acts as a constraint on BT in SFBB, we considered the shares of supply of SFBB, the pricing of EE SFBB compared to competitors, and whether EE's position in mobile or SBB provided a competitive advantage over other operators.

Share of supply

21.31 Evidence provided by Ofcom suggests that EE is one of a few competitors to BT in SFBB, but it has a small share of supply (see Appendix M for details of shares of supply). It has a national share of supply of only [✄], significantly behind the other major players.

21.32 In addition, looking at the trends in shares of supply, the Ofcom data suggests that Sky and TalkTalk have increased their number and share of customers over the last two years at a faster rate than EE.

21.33 Although Virgin Media has the highest national share of supply of SFBB, we recognise that it does not offer a service outside its network area, which currently covers approximately 50% of premises. We therefore looked at whether EE would provide a greater competitive constraint on BT outside the Virgin Media network area, ie where Virgin Media was not a competitor.

21.34 [✂]

21.35 It therefore appears that although EE is one of a small number of competitors to BT in SFBB, it currently has a small share of supply compared with competitors both in and outside the Virgin Media network area, and its previous growth rate has been less than that of competitors.

Pricing and quality of EE's SFBB service

21.36 We then looked at the price and quality of the SFBB services supplied by EE and considered whether it would be likely to increase its share of SFBB significantly.

- *Main parties' views*

21.37 The main parties told us that EE was not especially price competitive on SFBB, being more expensive that TalkTalk, Vodafone and BT and Plusnet and offering less attractive introductory offers (see Appendix M for further details).

21.38 EE provided us with internal strategy documents indicating that [✂].[137]

- *Third parties' views*

21.39 Ofcom told us that EE generated the most complaints for broadband as a proportion of its customer base for each quarter in the period Q1 2013 to Q1 2015.

- *Our assessment*

21.40 The headline price of EE's lowest cost SFBB package was considerably higher than the other large CPs in the period 2012 to 2014. Table 21.1 provides a comparison of the largest CPs' lowest cost superfast broadband services for each of April 2014, and show that, excluding line rental,[138] the monthly cost of EE's lowest cost superfast broadband package were considerably higher than the other main CPs. We also looked at other points in time and found that the headline prices for each CP were the same at April 2014 as at March 2013 and March 2012, so this conclusion has held for more than two years.

[137] [✂]
[138] Differences in line rental prices are small.

Table 21.1: A comparison of the largest CPs' lowest cost superfast broadband services, April 2014

	BT	*Virgin Media*	*TalkTalk*	*Plusnet*	*Sky*	*EE*
Headline download speed/technology	38Mbit/s FTTC	50Mbit/s cable	38 Mbit/s FTTC	38 Mbit/s FTTC	38 Mbit/s FTTC	38 Mbit/s FTTC
Monthly cost	£15 plus line rental	£15.50 plus line rental (or stand-alone at £25)	£13.50 plus line rental	£15.99 plus line rental	£20 plus line rental	£26 plus line rental

Source: Ofcom.
Note: Data from Figure 5.9 of the 2014 CMR; Figure 5.12 of the 2013 CMR; and Figure 5.5 of the 2012 CMR, all sourced from the Pure Pricing UK Broadband Pricing Briefing for April 2014, March 2013 and March 2012.

21.41 As set out in Chapter 20, this is consistent with internal strategy documents from EE for the periods of August 2014, November 2014 and March 2015 and Sky for October 2014, which show that [✂] (see Appendix M for further details).

21.42 When considering this theory of harm we looked at the importance of pricing in the choice of broadband provider (see Appendix M). [✂]

21.43 Given these price differentials, and the importance of price in consumers' buying decisions, it appears that EE is unlikely to exert a strong competitive constraint on BT in superfast broadband unless it offers significant promotions and factors around quality and other product differentiation features such as mobile bundles apply.

21.44 We have not seen any evidence to suggest that EE's higher SFBB prices can be justified by better quality or other benefits.

Potential competitive advantage of EE

21.45 We looked at whether EE may have specific competitive advantages over other operators in acting as a constraint on BT in SFBB, absent the merger. This could be the case if:

- EE had an advantage in cross-selling to an extensive existing customer base; and/or
- most additional subscribers to SFBB were obtained from upgrading from SBB, and EE had a larger base of SBB subscribers than competitors to upgrade.

- *Potential EE advantage in cross-selling*

21.46 EE acquires a significant number of SFBB customers from its mobile customer base. At the time of purchase, [✂] of new fibre customers were subscribers to EE's mobile phone service and only [✂]% of new fibre customers were new to EE (see Appendix M, Table 4). The CMA notes that

[✂]. This large customer base has contributed to growing EE's small share of SFBB.

21.47 However, we note that EE's net additions for SFBB have nevertheless been lower than those of BT, Virgin Media, TalkTalk and Sky in the year to Q1 2015,[139] and relatively few of EE's mobile customers are also fixed customers of EE.

21.48 EE informed us that the vast majority of its marketing is targeted at its existing customers rather than generic newspaper or TV advertising, [✂].[140]

21.49 Our provisional view is therefore that while EE has a large number of mobile phone customers to which it seeks to upsell fibre broadband, we have not seen evidence that this has translated into it achieving a higher number of SFBB acquisitions than other competitors, despite this being the target of its marketing strategy, and this potential for cross-selling SFBB has not resulted in it being a greater competitive constraint on BT than other operators.

- *Potential EE advantage in upgrading from SBB*

21.50 We first looked at the extent to which SFBB customers are acquired though upgrade rather than through competition in the market.

21.51 As stated previously (paragraph 21.7), two third parties have argued that since SFBB customers have generally upgraded from SBB, EE's existing broadband customer base makes it one of the few plausible competitors in SFBB.

21.52 We noted that the parties and third parties expected SFBB take-up to increase,[141] and there was still a sizeable pool of standard broadband customers who have not converted to SFBB.[142] However, evidence provided to us suggested that the proportion of SFBB acquisitions acquired from upgrading from SFBB, rather than being acquired from competitors, was decreasing.

21.53 We observed that there was variation across competitors in the extent to which SFBB customers were acquired through upgrade rather than competition in the market. For [✂] and [✂], currently most SFBB

[139] CMA analysis of Enders Analysis data. See Appendix M, Table 3 for SFBB customer acquisitions data.
[140] See Appendix M, Table 4.
[141] BT notes that analysts estimate that superfast fibre connections will exceed copper connections by 2017.
[142] Less than one in three retail broadband connections had headline speeds of 30 Mbit/s or more by the end of 2014. See Background section.

acquisitions were from competitors, whereas around two years ago most SFBB acquisitions were from existing SBB customers upgrading to SFBB.

21.54 For [✂] and [✂], the largest source of most SFBB acquisitions continued to be existing customers upgrading from its standard broadband service and/or from other services ([✂]). [✂]

21.55 We note that while EE had around [✂] million standard broadband customers in Q4 2014,[143] this is far less than the numbers for Sky ([✂] million) and TalkTalk ([✂] million) (see Appendix L, Table 2). Even if EE were to upgrade all its standard broadband customers to SFBB and other competitors did not gain any SFBB customers, then EE's share of SFBB would increase from [✂]% to [✂]%.

21.56 However, [✂]. A more realistic scenario would therefore be to assume that Sky and TalkTalk also upgraded some of their SBB customers. We note that even if Sky and TalkTalk were to upgrade only [✂]% of their standard broadband customer base to SFBB, each of these CPs would still have more SFBB customers than EE even if EE upgraded all of its SBB customers.

21.57 Furthermore, we note that as take-up of SFBB increases, a smaller proportion of acquisitions will be from upgrading SBB, and more will be acquired from other SFBB providers.

21.58 TalkTalk said that around 41% of BT's broadband customers were now on SFBB so there was a larger pool of existing fibre customers for it to acquire. This suggests that even if EE did have an advantage in acquiring SFBB customers by upgrading existing SBB customers (which, in any case, the evidence does not support), this advantage would be diminishing.

- *Our provisional views on potential competitive advantage of EE*

21.59 We therefore provisionally conclude that EE has no material competitive advantage in selling SFBB. It has the potential ability to sell SFBB to its mobile customers or upgrade existing SBB customers, but this would still leave EE with a small share of supply of SFBB, and this ability has not led it to increase its number of SFBB customers at a faster rate than its competitors.

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[143] EE had [✂] fixed broadband domestic customers, of which [✂] standard on 31 May 2015.

Likelihood of new entrants or expansion of existing players in SFBB

21.60 For completeness we also looked at whether it was likely that there would be new entrants or expansion of existing provision in SFBB. We first looked at potential future trends in SFBB, and projected shares of supply. We then looked at evidence of new entrants planning to enter the supply of SFBB, and assessed the barriers to entry (details of our assessment can be found in Appendix L).

21.61 As discussed above,[144] our provisional view is that barriers to entry to the SFBB market are low, as it would not be necessary for potential suppliers to invest in their own network in order to enter the market.

21.62 We also note that existing CPs Sky and TalkTalk are building their own FTTP network in York through a joint venture agreement with wholesale operator CityFibre. This is expected to reach around 20,000 premises with the first customers to be connected in [✂] 2015.[145] TalkTalk previously announced an ambition to reach 10 million households with FTTP within a five- to ten-year period if York trials are successful.[146]

21.63 However, as we have provisionally concluded that EE is not, and is not likely to become absent the merger, a major competitive constraint on BT in SFBB, the likelihood of new entrants or expansion of existing players in SFBB does not affect our competitive assessment.

Provisional conclusion on loss of superfast broadband competition

21.64 The SFBB segment has been rapidly growing over the past year, and is expected to expand further. It is a rapidly evolving market, with [✂]. Competition is strong, particularly for SFBB entry-level products, and those consumers considering switching to SFBB continue to be highly price sensitive, resulting in keen pricing in this segment.

21.65 While we observe that EE is one of a few competitors to BT in SFBB, it has a small share of supply and does not acquire a substantial share of acquisitions. Its headline pricing for entry level fibre products is higher than its competitors, [✂].

[144] Paragraph 20.75.
[145] See TalkTalk press release (23 June 2015): TalkTalk unveils York ultrafast broadband packages and prices; Cityfibre initial submission; Enders Analysis UK broadband, telephony and pay TV trends Q4 2014; ISPreview (March 2015), *Sky, TalkTalk and CityFibre to Expand 1Gbps FTTP Broadband Rollout in York*.
[146] Cityfibre initial submission; Enders Analysis UK broadband, telephony and pay TV trends Q4 2014.

21.66 While EE has a large number of mobile phone customers to which it seeks to upsell SFBB, we have not seen evidence that this has translated into it achieving a higher number of SFBB acquisitions than other competitors. Alongside this, [✂] EE is not seen as a major competitor.

21.67 On the evidence provided to us, our provisional conclusion is that the merger would not be expected to result in an SLC in and market or markets in the UK as a result of loss of competition in the supply of SFBB.

22. Competitive assessment: other theories of harm

Coordinated effects

Outline of theory of harm

22.1 In principle, concerns may arise in relation to coordinated effects where we think that three conditions are met:

- firms can reach and monitor the terms of coordination (eg by setting prices or sharing customers);
- coordination is internally sustainable among the coordinating group (ie firms find it in their individual interests to coordinate); and
- coordination is externally sustainable (ie competition from outside the coordinating group is unlikely to undermine it).[147]

Third party views

22.2 TalkTalk told us that, absent the merger, it was highly likely that BT would have acted as a maverick in the retail mobile market – following roll-out of its femtocells – due to asymmetries between BT and incumbents in the market, particularly in its cost structure. TalkTalk thought the retail mobile market was particularly susceptible to coordination, and that BT could have disrupted coordinated effects.[148]

Our assessment

22.3 We have seen no evidence to suggest that the merger would increase the possibility of coordinated effects in the retail market, or in any other market. In our analysis of the retail mobile market (which is set out in detail in section 10) we considered whether BT had specific strengths, including in relation to femtocells, which would suggest it would have been an important disruptive force in the counterfactual. We provisionally found that it did not.

22.4 Generally, we have more concerns about coordinated effects where a merger increases symmetry in an affected market, which in turn may align the interests of competitors to coordinate rather than compete; this makes coordination more internally sustainable.

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[147] See *Merger Assessment Guidelines*, section 5.5.
[148] TalkTalk initial submission at phase 2.

22.5 In this case, the merger brings about relatively small changes to market shares in most affected markets and generally makes the share of the market leader larger (ie makes it less similar to its competitors). Therefore it is unlikely to create a greater risk of coordinated effects. The merger does increase contact between operators in fixed and mobile markets), but again does not lead to a situation where firms are likely to have similar incentives.

22.6 We provisionally find that the merger is not expected to result in an SLC as regards coordinated effects.

Conglomerate effects

22.7 In principle, concerns may arise about conglomerate effects where we think that the merged firm might increase the selling price of one of its products when sold on a stand-alone basis, but might not do so if customers buy both the merged firms' products; this would give customers an incentive to buy the second product from the merged firm as well, putting rivals in the second product market at a disadvantage.[149]

22.8 It has been suggested by third parties that we may wish to consider whether any conglomerate effects arise as a result of the transaction.

22.9 Our provisional view is that any possible conglomerate effects in this case are closely linked with the issue of bundling. To assess the existence of conglomerate effects, we would consider whether there is an incentive to foreclose in one market to harm a rival primarily active in a different product market, on the basis that an increased propensity for bundling will lead to some additional conversion of sales to the merged entity. This effect has been suggested to us by third parties.

22.10 We stated in our issues statement of July 2016 that it appeared unlikely to us that the merger would be expected to result in an SLC as regards conglomerate effects. Nevertheless, we invited interested parties to provide us with evidence of any such effects. No one has put forward any material evidence in relation to conglomerate effects (as distinct from the bundling issue which is covered in detail in our assessment of theory of harm 3).

22.11 Our provisional view is that, to the extent this effect exists, it has been covered by our assessment of the other theories of harm. We provisionally find that the merger is not expected to result in an SLC as regards conglomerate effects.

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[149] See *Merger Assessment Guidelines*, paragraph 5.6.13.

Interrelated effects

22.12 As well as our assessments of the individual theories of harm, we also looked at whether any potential interaction between each theory of harm would give rise to an SLC, or whether the overall effect of the merger on players in the UK telecoms sector would give rise to competition concerns.

22.13 For each theory of harm, we considered whether there were any aggravating factors which potentially could arise from the merger in other markets considered, which could have an impact on our assessment.

22.14 We considered the way in which competitors would require inputs from the merged entity across several markets (notably in wholesale mobile, backhaul and wholesale broadband). However, if we found that the merged entity did not have the ability or incentive to foreclose these competitors for any individual input taking all the relevant evidence in the round, then there would be no additional theory of harm to assess. As part of this, we also considered whether the theories of harm could interlink or amplify each other as a result of consumer behaviour and therefore took account of issues such as the possible increased popularity of fixed-mobile bundles when assessing the merged entity's incentives.

22.15 Our provisional view is that all relevant concerns were fully addressed under the individual theories of harm, and no additional theories of harm apply.

23. Provisional findings

23.1 We provisionally find that the merger is not expected to result in an SLC within any market or markets in the UK, including the retail mobile, wholesale mobile, mobile backhaul, wholesale broadband and retail broadband markets which have formed the focus of our inquiry.

23.2 The group was unanimous in provisionally finding no SLC in all but one market. The inquiry group is currently evenly divided over whether there is an SLC in the wholesale mobile market (theory of harm 3). The law states that for an SLC to be found under section 36(1) of the Act, there must be a two-thirds majority of the group in favour of an SLC.[150] It follows that we have therefore arrived at a provisional decision that there is no SLC in any market in the UK.

[150] See Schedule 4 of the Enterprise and Regulatory Reform Act 2013, paragraphs 55–56.